

Science and Mathematics Education Centre

Relationships amongst Science, Ethics and *Polis* in
Pre-Modern Times

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Declaration Page

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material that has been accepted for the award of any other degree or diploma in any university.



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Table of Contents

Declaration Page	ii
Table of Contents	iii
List of Tables	v
A Note on Enquiry Method: Standardisation of Key Terms Meanings and a 'Representative Firm' Approach to Naming and Tracking Prequels	viii
Index of Foreign Word Usage (French, Greek, German, Italian, Latin)	xii
Index of Foreign Word Usage (Hebrew-English)	xviii
Acknowledgements	xix
Devotion	xx
Abstract	xxi
Introduction	1
The Thesis Proposition Statements	18
Part One	
Early Transition from Religion to Philosophy, Socratic Turning and Subsequent Emergence of a Unified Political Philosophy of Aristotle (BC 384 – 322)	20
Chapter 1: Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato's Political Philosophy	21
Appendix I as a Coda to Chapter 1: Approaches to Reading Plato	137
Chapter 2: Key Terms Usage and Enquiry Methodology	174
Chapter 3: Science, Ethics and <i>Polis</i> in the Political Philosophy of Aristotle (BC 384-322)	204
Part Two	
From Aristotle (BC 384 – 322) to Jean Buridan (AD c.1300 – c.1358): Science, Ethics and <i>Polis</i> and Transition from Philosophy to Theology	277
Chapter 4: Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	278
Chapter 5: Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	361
Chapter 6: Science, Ethics and <i>Polis</i> —Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274) and Aquinas to Buridan (AD c.1300 – c.1358)	403
	iii

Part Three

Re-emergence of Experimental Science, Arrival of a New Political Philosophy and Dawning of a New Era Later Called The Modern Age	440
Chapter 7: Re-emergence of Experimental Science	441
Chapter 8: Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	466
Chapter 9: Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	568
Chapter 10: Veracity of the Thesis Proposition Statements, Original Contribution and Closure of the Enquiry	589
Bibliography	632

List of Tables

Table 1: Articulation of Thesis Proposition Statements Begins	18
Table 2: Three Divisions of Philosophy Discernible at the Time of Plato’s Life.....	25
Table 3: Ionian Science Answers to a Question—What is the World Made of?.....	39
Table 4: Aspects of the Rich Thought Detectable in Presocratic Cosmology and Cosmogony	46
Table 5: Changing Usage of the Terms Matter and Form.....	54
Table 6: The Forms in Plato from the Human Condition to the Natural and Universal Condition	115
Table 7: Plato's System of Knowledge—His Parable of the Line	122
Table 8: Key Terms Nuance—Plato (BC c. 427 – c. 347)	133
Table 9: Progressive Articulation of the Thesis Proposition Statements—Plato (BC c. 427 – c. 347)	134
Table 10: Manifestations of Scientific Thinking to the Time of Plato	179
Table 11: Tabular Illustration of a Process by which Chapeau Questions are Applied to Esoteric Key Terms Referents in Discerning Esoteric Terms Meanings	183
Table 12: Tabular Example of Measurement of Esoteric Key Terms Meaning for the Case of Plato	186
Table 13: Key Terms Nuance—Plato (BC c.427 – c.347) to Hobbes (AD 1588 – 1679).....	192
Table 14: Progressive Articulation of Thesis Proposition Statements—Plato (BC c. 427 – c. 347) to Hobbes (AD 1588 – 1679).....	196
Table 15: Aristotle's Categories of Being.....	207
Table 16: Examples of Hierarchies in Primary Substance and Secondary Substances	209
Table 17: Three Subdivisions of Theoretical Philosophy within One of Three Divisions of Philosophy .	211
Table 18: Aristotle’s Four Causes of Being and Their Traditional Names	216
Table 19: Working Definitions of Classes of Matter Mentioned by Aristotle	217
Table 20: Elements Expressed as Qualities.....	218
Table 21: Mediaeval Classification of Aristotle’s Major Lecture Works	223
Table 22: Beings Known to Aristotle.....	225

Table 23: Attributes of Soul	230
Table 24: Kinds of Enform-ment	232
Table 25: Kinds of Justice	239
Table 26: Faculties and Virtues of the Soul	241
Table 27: Ross' Compilation of Aristotle's Moral Virtues	243
Table 28: Definitions of Four Classes from Which all Propositions and Problems Emerge	255
Table 29: Six Forms of Government	269
Table 30: Key Terms Nuance—Aristotle (BC 384 - 322).....	273
Table 31: Progressive Articulation of Thesis Proposition Statements—Aristotle (BC 384 – 322).....	274
Table 32: First Explanation of Names Used in the Text	279
Table 33: Name Attribution Characteristic of Scholars Urging a Hint of Redaction in Psalm 82 and Deuteronomy 32: 8 – 9.....	286
Table 34: Third Explanation of Names Used in the Text.....	298
Table 35: Historical Context of the Translation of the <i>Septuagint</i> from Hebrew to Greek.....	299
Table 36: <i>Logos</i> Metaphor.....	308
Table 37: Fracturing of Aristotle's Unified Scheme	358
Table 38: Key Terms Nuance—Rational Metaphysics to Christian Theology	358
Table 39: Progressive Articulation of Thesis Proposition Statements—Rational Metaphysics to Christian Theology.....	359
Table 40: Medieval Nominalism and Realism	367
Table 41: Key Terms Nuance—Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	400
Table 42: Progressive Articulation of Thesis Proposition Statements—Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142).....	401
Table 43: The Articles or Mysteries of Faith	413
Table 44: Aquinas—Virtues and Their Functions.....	416
Table 45: Key Terms Nuance—Aquinas (AD 1225 – 1274) at the High Point of Syncretisation	424

Table 46: Key Terms Nuance—Aquinas (AD 1225 – 1274) to Buridan (AD c.1300 – c.1358).....	433
Table 47: Progressive Articulation of Thesis Proposition Statements Abelard (AD 1079 – 1142) to Aquinas (AD 1225 – 1274) and Aquinas to Buridan (AD c.1300 – c. 1358).....	434
Table 48: Roger Bacon’s Prerogatives of Experimental Method	446
Table 49: Newton’s Rules of Reasoning in Philosophy	463
Table 50: Key Terms Nuance—Return of Experimental Science.....	464
Table 51: Progressive Articulation of Thesis Proposition Statements—Return of Experimental Science	465
Table 52: Bacon’s Plan for the Great Instauration	493
Table 53: Francis Bacon’s General Classification of Faculties of the Soul and Their Associated Categories of Knowledge	496
Table 54: Bacon’s Subdivisions of Natural Philosophy	501
Table 55: Bacon’s Idols of the Mind.....	515
Table 56: Key Terms Nuance—Francis Bacon (AD 1561 – 1626).....	565
Table 57: Progressive Articulation of Thesis Proposition Statements—Francis Bacon (AD 1561 – 1626)	566
Table 58: Hobbes’ Laws of Nature 1 Through 4.....	579
Table 59: Key Terms Nuance—Thomas Hobbes (AD 1599 – 1679)	584
Table 60: Progressive Articulation of Thesis Proposition Statements—Thomas Hobbes (AD 1599 – 1679)	585

**A Note on Enquiry Method: Standardisation of Key Terms Meanings and a
'Representative Firm' Approach to Naming and Tracking Prequels**

The key terms of this enquiry are Science, Ethics and *Polis* and the enquiry ranges over a long period in Western history. Consequently, as explained in the Introduction and further developed in Chapters 2 and 10, a method had to be found which, *inter alia*, would permit consistent usage of these key terms in a manner compatible with changing nuance in them.

By way of further explanation, and focussing on Plato for discussion purposes, there are a number of words he uses in his efforts to identify kinds of knowledge—the true as opposed to the false, sophistic conjecture as opposed to reasoned argument, and logical reasoning as opposed to eristic obstructive filibuster. At *Statesman* 258e (Plato, 1903c; 1952t, p. 580) the dialogical Young Socrates voices an assumption that Science consists of two divisions, one practical (*praktikos*), the other pure or intellectual (*gnostikos*), Science in the first place being used in one sense of *episteme* (ἐπιστήμη) full knowledge about matters, including arts, professions and the like *Philebus* 55d (Plato, 1925f; 1952p, p. 633), and *gnosis* appearing to have no sense of personal mystical truth as it later came to have. Science so used comes from ἐπι = upon and ἵσταμαι = to stand upon and in this sense science as *episteme* *Republic* 477b (Plato, 1925c; 1952r, p. 371) *Ion* 536c (Plato, 1925c; 1952h, p. 145) is a kind of true and tried knowledge upon which other knowledge may be built. The word *sophia* (σοφία), which may be used to mean cleverness or skill in handicraft in the sense of knowledge of the handicraft *Republic* 406b (Plato, 1952r, p. 335; 1969a), *Protagoras* 321d (Plato, 1952q, p. 44; 1967d) can also serve to mean skill in life matters, practical wisdom, sound judgment and the like *Protagoras* 360d (Plato, 1952q; 1974, p. 64), or in the sense of learning or wisdom *Apology* 20e (Plato, 1952a, p. 201; 1966a). *Phronesis* (φρόνησις) may also be used in the sense of a reliable kind of knowledge, namely practical wisdom or prudence in government and affairs *Symposium* 209a (Plato, 1925g; 1952r, p. 166). *Techne* (from the Greek τέχνη) refers to art and trade *qua* making, the knowledge of *techne*, being practised trade knowledge *Protagoras* 317c (Plato, 1952q, p. 42; 1974) or learned professional knowledge *Protagoras* 312b, 315a,

(Plato, 1952q, pp. 39, 41; 1974). *Techne* also signifies a set of rules or system of making, crafting, doing *Phaedrus* 245a, 271c (Plato, 1925e, pp. 124, 137; 1952o), *Phaedo* 90b (Plato, 1952n, p. 237; 1966c), *Euthydemus* 282d (Plato, 1952e, p. 71; 1967a) in a collective noun sense as knowledge. *Nous* (νοῦς) is implicated in perceiving or thinking, *Republic* 619b (Plato, 1925c; 1952r, pp. 439 - 440) or in act of recalling or remembering *Republic* 490a (Plato, 1925c; 1952r, p. 376) or as having sense or being sensible *Laws* 887e (Plato, 1952j, p. 759; 1967/68a), or mind as resolve or purpose as in putting one's mind to a subject or issue *Republic* 334d (Plato, 1925c; 1952r, p. 299) or as reason or intellect *Timaeus* 51d (Plato, 1925h; 1952w, p. 457) or as active principle of universe *Timaeus* 48a (Plato, 1925h; 1952w, p. 455), *Sophist* 249a (Plato, 1921b; 1952s, p. 568), *Philebus* 30c (Plato, 1925f; 1952p, p. 619). *Dialectike* (διαλεκτική) is used in a sense of skill in discussion by question and answer as a philosophical method used by Plato *Cratylus* 390c (Plato, 1921a; 1952c, pp. 88 - 89), *Republic* 534e (Plato, 1925c; 1952r, p. 398) and in a sense of argument by general principles as opposed to scientific argument *Philebus* 17a (Plato, 1925f; 1952p, p. 612), *Meno* 75d (Plato, 1952l, pp. 176 - 177; 1967c). *Eristike* (εριστικός, in the sense of squabble or quarrel) is found in *Lysis* 211b (Plato, 1903a; 1952k, p. 18) or as sophistry in *Sophist* 231e (Plato, 1921b, p. 559; 1952s). It is associated with merely verbal antagonism *Euthydemus* 278a, 301b, (Plato, 1952e, pp. 68, 81; 1967a) *Theaetetus* 164c (Plato, 1921d; 1952v, p. 524), and employed in a sense of neglecting to differentiate and divide, *Philebus* 17a (Plato, 1925f; 1952p, p. 612), *Phaedrus* 265e, 266a-b (Plato, 1925e; 1952o, p. 134), in a sense of failure to distinguish hypothesis from consequence, *Phaedo* 101e (Plato, 1952n, p. 242; 1966c), *Parmenides* 135-136 (Plato, 1925d; 1952m, pp. 490 - 491) and as an opposite to dialectic *Republic* 454a (Plato, 1925c; 1952r, p. 358). *Anagnorisis* (ἀναγνώρισις) is used in a sense of a sudden recognition of something, an epiphany, or *dénouement* as in a play when all the parts are brought together and matters are clarified *Theaetetus* 193a (Plato, 1921d; 1952v, pp. 539-540).

Attempting to decipher clear cut distinctions between branches of knowledge by endeavouring to tie down specific word meaning, in this case for the key term Science, is already complex and becomes more so when the process is extended to other extant

writers, or to the fragments, or forward past Aristotle, or to earlier works, and, except for a skills explanation of virtue as some kind of knowledge, and brief clarification of early Greek ideas of justice, god and happiness for set-up purposes, key terms meaning and/or nuance is not traced in such a manner, there yet being collections of instructive scholarship which, inter alia, employ exegesis of this kind (Montanari, Matthaios, & Rengakos, 2015a, 2015b; Stern-Gillet & Corrigan, 2007, 2008) and a long rich established heritage as well.

In this enquiry key terms meaning and nuance are consistently measured in the following way. First, specific meanings are assigned to key terms at the outset and these attributed meanings do not change over the duration of the enquiry. Second, a key terms hierarchy of relationships amongst those attributed key terms meanings is identified and how political philosophy is generally made within that hierarchy is explained. The key terms relationships hierarchy and its general method of making political philosophy do not change over the duration of the enquiry. All key terms nuance, and consequential attendant nuance in political philosophy measured in the manner next explained in the third step, occurs within the unchanging attributions of the first and second steps outlined in this paragraph. Third, key terms nuance and attendant political philosophy is traced throughout the enquiry by reiterative measurement of esoteric key terms meaning captured by consistent chapeau questioning of three vectors of esoterism for each key term, these vectors being cognitive method, cognitive domain of operations, and cognitive constraints, the chapeau questions being How do I come to know?, What do I come to know? and What limits my knowing?

The measurement of key terms in this manner is thus a measurement by transform and was constructed from first principles for enquiry purposes. Nevertheless, from hindsight, its legitimacy may be rationalised by depicting it as a kind of literary version of ideas of transform which underly logarithmic notation, La Place transforms, two dimension Cartesian tracking of that legendry insect, or the whole geometric saving the appearances, the idea in this latter case not being defective, but rather the geocentric premise on which it was required to operate. Caveats about this measurement-of-

meanings-part of enquiry methodology are given in the Introduction, Chapter 2 on method, Chapter 10, and in footnotes to tables. Elsewhere, text boxes within the enquiry address relevant meanings contention in specific instances. Meanings of foreign words used in the enquiry, but outside of the third step measurement process just explained above, are specified in an index provided on pages xii to xviii.

An inspection of the tabular representation of method on page 609 reveals that prequel marker names Republic of Ideas through Leviathan are matched with particular representative names Plato through Hobbes. Such linking identifies what, in this enquiry is called a ‘representative firm’ convenience after the fashion of political economists who—after having defined various kinds of market structures and finding a plethora of possible firm types emerging within, and sharing characteristics across, those structures—alleviate the issue through a ‘representative firm’ construct, that is, through identifying or describing a ‘representative’ firm typical of each market structure category. Thus the enquiry may well have proceeded by applying its chapeau questioning to a different series of ‘representative firms’, for example, Xenophon instead of Plato, Magnus instead of Aquinas, Locke, Rousseau and Campanella as a job lot instead of Bacon, or Machiavelli instead of Hobbes, to likely arrive at different conclusions. As well, none of the identified enquiry prequels alone may likely explain a detected quickening change in political philosophy during Bacon’s time. Detection of quickening change and likely emergence of a new era is an outcome of method itself as explained on page 611. In addition, ideas progress throughout the prequel series is by ebb and flow rather than discreet Kuhnian paradigm shift, and as stated in the Conclusion, almost every important claim made, or finding conjectured, is admitted contestable.

Index of Foreign Words Used
(French-English, German-English, Greek-English, Italian-English and Latin-English Equivalents
for Enquiry Purposes)

a	<i>agon</i>	Contest or struggle in a sense of improvement through resolution of conflict in human society.
	<i>andiamo</i>	Let's go.
	affliction (πένθος)	Affliction in mystic language connotes "fall" or "sin."
	<i>a fortiori</i>	From a position of higher reason: for example, if a person of one skin colour were seen stealing then, on the face of it, there being no falsity or disguise involved in the seeing, others of different skin colours may be reasoned out of contention. The fact of the seeing sets up the <i>a fortiori</i> on which the ruling out of others is more confidently acceptable.
	<i>aínigma</i>	Expressing words so that they do mean what they are intended to mean but bequeathing to them obscure symbolism and meaning accessible only to those keyed ready through prior initiation.
	<i>aliquid</i>	Something otherwise or anything else again.
	<i>anámnesis</i>	The idea Plato develops in the <i>Meno</i> and <i>Phaedo</i> that knowledge of earthly beings results from blurred memory of knowledge gained through processes of reincarnation(s).
	<i>anschauung</i> (Kant)	Kant's word translated as intuition or intuitive reason or sensibility or internal sensation, or sense perception. Consciousness to itself at the beginning, that given by the patternmaking of time and space. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
	<i>ante rem</i>	Before the thing
	<i>apatheia</i>	A condition of the wise, a state in which the mind is free of disturbance from the passions.
	<i>apeiron</i>	Unending, infinite, indefinite.
	<i>a posteriori</i>	Later, following—in philosophy <i>a posteriori</i> knowledge is associated with scientific knowledge.
	architectonic (αρχιτεκτονικός)	Master or chief: for example in the list theology, physics, politics and economics, theology might be architectonic, governing or blueprinting the rest.
	<i>arete</i>	Virtue either (a) in a technical sense of good-at-what, that is, professional and technical know-how for a task, or (b) in a moral sense depending on the era and purpose of usage. For example a good or virtuous shoemaker is one fully appraised of the technical skills of shoemaking while a good and morally virtuous mankind is, in Plato's exegesis of it in which <i>nous</i> discerns happiness predicated on obedience to the law, justice and self-control, one in which virtue is some kind of knowledge.
	<i>articuli fidei</i>	Precepts of divine revelation.
<i>askesis</i>	In more general usage: training oneself, transforming oneself towards a chosen state of being.	
ἄστυ	A city as a gathering of bricks and mortar and its streets and institutions and the like.	
<i>atomi</i>	Particles, atoms.	
b	<i>bacchoi</i>	Literally, branches carried by some participants of the Eleusian Mysteries <i>thiasos</i> in their journey from Athens to Eleusis; figuratively initiates.
	<i>begriffe</i> (Kant)	Conceptions. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
	<i>bios politikos</i>	A marker signifying political life or active life in the communal space of the P(p)olis which evokes practical wisdom's action as <i>phronesis</i> .
	<i>bios theoretikos</i>	A marker signifying contemplative life which evokes theoretical wisdom's contemplation of the unchanging and its attendant <i>sophia</i> .
c	<i>carte blanche</i>	Metaphor for full authority to act.
	χαῖρε χ = chi =phonetically kai = ch	Hail as in a greeting to a personage such as Persephone in the gold tablets or in "Hail to thee blithe spirit" (Shelley, 1961, pp. 602 – 603.)
	<i>collegium</i>	A group of people joined by law, Romanised from the Greek <i>hetaireia</i> or company of persons, in the first instance, bodyguards.
	<i>communis opinio</i>	Common opinion or a generally accepted view on a mater.
d dz/zita	<i>cosmos or kosmos</i>	Colloquially <i>cosmos</i> or <i>kosmos</i> = world. In another usage however Guthrie informs that it is an untranslatable word combining notions of "order, fitness and beauty" (Guthrie, 1975a, p. 37) this enquiry, when not used colloquially, and unless otherwise stated, <i>cosmos</i> or <i>kosmos</i> signifies a grown or strived for order, a right order in a community or state.
	<i>dasein</i>	For Heidegger the Presocratic's <i>phusis</i> is the original coming out of concealment (di Pippo, 2000, pp. 32 - 34), an original letting itself be seen kind of idea. Heidegger considers Being, signified in his word <i>Dasein</i> , as that from "beyond Being, yet manifesting itself in an understanding of Being which permeates all our comportments" (Taminiaux, 1991, p. 11). In particular three dispositions, <i>poiesis</i> , <i>praxis</i> , <i>theoria</i> and their corresponding action or

d dz/zita		movement twins <i>techne</i> , <i>phronesis</i> and <i>sophia</i> constitute <i>Dasein</i> , understood as being in the world, and of these <i>praxis</i> = <i>phronesis</i> provides the right way to <i>Dasein</i> , to being and caring in the world and a realisation of the temporal ephemerality of Being so understood. Within <i>Dasein</i> , <i>poiesis</i> is a principle of origination, and bringing forth from concealment or leading into unconcealment, which yet does not reveal itself in the <i>praxis</i> or doing of the unconcealment. (Heidegger, 1950/2002, pp. 41, 47 - 48). For example, at the level of artisanship, craft being done, that is, craft as <i>praxis</i> , has left the sphere of <i>poiesis</i> . Taminioux names <i>Dasein</i> Heidegger's "ontical foundation of fundamental ontology" (ibid.) (Taminioux, 1991, p. 11) which brings another set of definitional issues.
	<i>Dum inter homines sumus, colamus humanitatem.</i>	So long as we are among men, let us cherish humanity, more colloquially since we are humans, let us live as humans.
	<i>déjà vu</i>	Already seen.
	<i>differentia</i>	Difference, differentiation.
	daimones	In Middle Platonism (1) the human soul itself, (2) souls which have left their bodies, and (3) daimones who never enter bodies. Daimones as disembodied souls help humans reach the afterlife (Cline, 2011, p. 2011).
	<i>dike</i>	Generally a marker for justice. There is a habitually right way in a custom of a tribe and a morally right way predicated doing the so-called right thing. Such tensions are present in debates about killing and eating whales. In Greek mythology Dike is the daughter of Zeus and Themis, the goddess of law. Guthrie uses <i>dikaioyne</i> as a longer form of the noun. Plato uses <i>dikaios</i> .
	<i>ding an sich</i>	A thing/things in itself/themselves, Kant's word for noumena postulated existing beyond the phenomena themselves pattern made by space and time.
	<i>doxa</i>	Opinion as differentiated from <i>techne</i> as knowledge of craftsmanship, the art of making or doing, <i>episteme</i> as scientific knowledge or true belief, <i>phronesis</i> as practical wisdom, <i>sophia</i> as theoretical wisdom and <i>nous</i> as pure apprehending.
	δημιουργός <i>dunameis</i>	One who works for the people, a skilled workperson or a handicraftsperson. Souls.
e	ἐγκώμιον <i>en arrivant</i>	Encomium, laudatory ode, eulogy, panegyric, warm and enthusiastic praise In an act or state of arriving.
	<i>en précis</i>	By way of pinpoint or summary.
	ἐντελέχεια	Entelechy, or fullness or completeness of the being to the service of final cause.
	<i>empfindung</i> (Kant)	Sensation. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
	<i>episteme</i>	Scientific knowledge or true belief as differentiated from <i>doxa</i> or opinion, <i>techne</i> as knowledge of craftsmanship, the art of making or doing, <i>phronesis</i> as practical wisdom, <i>sophia</i> as theoretical wisdom and <i>nous</i> as pure apprehending.
	<i>epistomia</i>	<i>Epistomia</i> is an archaeological term for objects placed on or inside mouths of the dead, instead of a burial coin.
	<i>epithumia</i>	Appetite, desire, passionate longing in a neutral sense, the thing being desired determining a pejorative dimension
	<i>erscheinung</i> (Kant)	Phenomenon. The undefined object of an empirical intuition. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
	<i>ergazesthai</i>	Arendt attempts to associate <i>ergazesthai</i> with work in a sense of human body at slavish working. For Sprague <i>ergazesthai</i> = working as distinguished from making <i>ponen</i> or doing <i>prattein</i> .
	<i>ergo</i>	Therefore.
	<i>eros</i>	The god Eros or erotic love depending on context.
	<i>eudaimonia</i>	In simple form Happiness or flourishing in humans In a specific form blessed happiness won through theoretical wisdom as the highest intellectual virtue's contemplation of the unchanging.
	<i>ex nihilo</i>	Out of nothing.
<i>extinctus amabitur idem</i>	He shall be had in honour after Horace (1888, p. 42).	
f	<i>fundamentum in re</i>	Foundation within the thing. Concepts are not a function of mind alone but have a <i>fundamentum in re</i> , a foundation within the thing perceived/conceived.
g	<i>gemiith</i> (Kant)	A certain affection of the mind. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
h	<i>haecceitas</i>	Scotus' term for whatness.
	<i>hedone</i>	Pleasure which, depending on contextual usage, may be associated with or differentiated from hedonism and/or striving for and achieving the good.
	<i>hêgemonikon</i>	Ruling faculty of mind, control centre of the sense organ in Stoic theory.

h	<i>hieros logos</i>	Sacred account Note: “Hieros-logos—a sacred tale, sacred word or book (e.g. possessed by the initiation priests of Dionysus and by the Pythagoreans); there were <i>logoi</i> (accounts, explanations) within practical mysteries and additional <i>logoi</i> added from the outside; they were both esoteric and exoteric, within the mysteries and about the mysteries priests containing information within the mysteries or about the mysteries, developed on three different hermeneutical levels, those of myth, allegory, and metaphysics” (Uzdavinys & Finamore, 2004, p. 300)
i	<i>in foro externo</i>	In open court, in person made law: Hobbes’ adaption is explained in the text.
	<i>in foro interno</i>	In closed court, in conscience. Hobbes’ adaptation is explained in the text.
	<i>inter alia</i>	Among other things.
	<i>imprimatur</i>	Authoritative approval.
	<i>isonomia</i>	Equality before the law.
j	no entry	No entry.
k	<i>kalon</i>	A combination of nobleness, kindness and beauty.
	<i>katabasis</i>	Descent, in Orphism a descent to the underworld.
	<i>kleos</i>	Renown or glory.
	<i>kosmos</i> or <i>cosmos</i>	Colloquially cosmos or cosmos = world. In another usage however Guthrie informs that it is an untranslatable word combining notions of “order, fitness and beauty” (Guthrie, 1975a, p. 37) this enquiry, when not used colloquially, and unless otherwise stated, cosmos or kosmos signifies a grown or strived for order, a right order in a community or state.
l	<i>lex naturalis</i>	Law of nature.
	<i>logoi en paideia</i>	Logoi as educators or trainers.
	<i>Logos/logos</i>	Depending on context: (a) God’s word, or the Greek divine element of mind, or Christ incarnate as Logos on earth, or Adam as Logos within, or (b) as small l logos a rational as opposed to mythical account for example of natural beings and occurrences, not the speech or discourse of the Sophists; or a speech or discourse or an account depending on the context in which the word is used.
	<i>logos endiathetos</i>	Internal Logos, Logos within the soul, with a capital or lower case depending on context.
	<i>logos prophorikos</i>	External logos, Logos without the soul, with a capital or lower case depending on context.
	<i>lamellae</i>	Thin plates, in this case of metal.
	<i>lingua franca</i>	A bridge or shared language between differing mother tongues.
m	<i>magoi</i>	Translated meaning is contested (R. G. Edmonds, 2008, pp. 16-17). Edmonds allows <i>magoi</i> to be priests or magicians associated with the abnormal (ibid., p. 35), whether the association is pejoratively positive or negative, positive or negative being conative perspectives brought to usage by attitudes and values held by the user. Unless otherwise stated the general usage implied in this enquiry is that <i>magoi</i> are magicians rather than <i>mystai</i> , either priests or initiates considered ready to witness the greater mysteries.
	<i>materia-prima</i>	Aquinas’ primordial material.
	<i>materia primo-prima</i>	Duns Scotus’ name for a formless and incorporeal matter which can never exist on its own unless God wills it. It is the first material of the world.
	<i>materia secundo-prima</i>	Duns Scotus’ name for what the world is made of. It is Aquinas’ primordial <i>materia prima</i> . It is a substrate of <i>materia primo-prima</i> and is the material of becoming and change.
	<i>medicina-cultura-animi</i>	In short form = <i>cultura-animi</i> in Corneanu’s usage = collective descriptor for the genres, texts, literatures, themes attitudes, and approaches embodying medicine of mind perspective.
	<i>medietas</i>	A medium or midpoint.
	<i>mētēr</i>	Mother.
	<i>mimesis</i>	Imitation, resemblance, mimicry.
	<i>μύστης</i>	Initiate, initiated member.
	<i>moira</i>	Fate.
	<i>mystai</i>	Translated meaning is contested (R. G. Edmonds, 2008, pp. 16-17). Unless otherwise stated the general usage implied in this enquiry is that <i>mystai</i> are either priests or initiates considered ready to witness the greater mysteries, rather than <i>magoi</i> or magicians.
<i>mythos</i>	A mythical, as opposed to rational account of beings and occurrences, for example gods causing lightning and thunder.	
n	<i>nomos</i>	In a general sense culture or law. In this enquiry its figurative connotation is the rule of man-made law away from rule of nature as brute force.
	<i>nous</i>	An essential and divine element of human soul. Pure apprehending as differentiated from <i>doxa</i> or opinion, <i>techne</i> as knowledge of craftsmanship, the art of making or doing, episteme, or scientific knowledge or true belief, <i>phronesis</i> as practical wisdom, and <i>sophia</i> as theoretical wisdom.
	<i>nunc dimittis</i>	Now you dismiss from <i>Luke 2:29 – 32</i> (Holy Bible, 2009b) where the first words of the canticle is established as “Lord, now lettest thou thy servant depart” (ibid.).

ο	Ο έξω λόγος	Spoken word, <i>logos</i> outside the soul.
	Ο εν τῇ ψυχῇ	The discourse within the soul, <i>logos</i> inside the soul.
	<i>officina omnium</i>	Workshop of all things.
	<i>ὁμοούσιον</i>	Of one substance.
	<i>ὀργή</i>	Anger, rage, wrath.
	<i>ousia</i>	Being.
	<i>oeuvre</i>	A body of creative work by one person, for example a writer or artist.
π	<i>paideia</i>	In a simple sense training and thus when, used with qualifying words, particular kinds of training for example, reparation, including education and training, for membership of a Greek <i>Polis</i> .
	<i>pari passu</i>	Moving together, with equal step.
	<i>patria eqh</i>	Fatherland laws (Simple translation is troublesome (Mason, 2007, p. 19).
	πένθος	Affliction (I) grief, sadness, sorrow, (Homer) especially of the outward signs of grief, for example mourning for the dead Herodotus (II) a misfortune, Herodotus, Pindar (III) of persons, a misery, Sophocles.
	<i>per se</i>	In itself.
	<i>phantasia</i>	In Stoic theory a form of a sensed object carried back to the <i>hégemonikon</i> by a current of rational <i>logos</i> . Sense impression and its cognitive affection in the material soul. The usage is technical or clinical it having no association with notions of unreality, uncertainty or extraordinariness.
	<i>phantasia kataleptike</i>	In Stoic theory, <i>phantasia</i> after certification by <i>kataleptike</i> , <i>phantasia</i> certified as bringing objective and subjective reality of a sensed object to mind.
	<i>philosophia prima</i>	Bacon's first philosophy or natural history.
	<i>philosophia secunda</i>	Bacon's second philosophy or active Science.
	φρόνησις	<i>Phronesis</i> .
	<i>phronesis</i>	The intellectual virtue of practical wisdom at work in discerning right action. Scholars have adapted <i>phronesis</i> to their own projects shades of such usage being explained in appropriately located text boxes within the enquiry.
	<i>phusis or physis</i>	Nature, natural beings and their possible inter-relationships.
	<i>physis or phusis</i>	Nature, natural beings and their possible inter-relationships.
	Φίλων ο πρεσβυτερος	Philo the Elder.
	<i>poiesis</i>	In narrow usage = technical or craft skill. Shades of meaning in use of this term, for example by Plato, Aristotle and Heidegger, are addressed in a text box on page 166.
	politeuma (πολίτευμα)	1. Civil affairs administration of a state or commonwealth (2) Laws and constitution and form of government. (3) A state or commonwealth.
	<i>politique</i>	After Francis Bacon's usage a person making their way in civil service <i>qua</i> politics. One having to make their own fortune or chance.
	<i>ponein</i>	Arendt's identifies labour as hurtful activity associated with acts of deriving essentials, growing food and the like in the manner of unchosen labour to survive drudgery in ancient times. She associates this activity with the word <i>ponein</i> as different from <i>ergazesthai</i> or artisan making by relying on differing connotations of work signified between say <i>travailler</i> and <i>ouvrier</i> in French and <i>arbeiten</i> and <i>werken</i> in German. Such survival labour is the work of animal labourers and is a consequence of biological-life (<i>zōē</i>) necessity imposed on humans. Such animal labour is differentiated from work <i>qua</i> fabrication or making of more durable goods like schools, museums, literature, artworks and complementary existences and these are made with societal ends (sic) in view. The work or fabrication by artisans freed from necessity is part of existence between life and death, part of human life (<i>bios</i>) and is designated <i>poiesis</i> . Arendt's attempted differentiation between <i>ergazesthai</i> and <i>ponein</i> is not without its own complications because of the range of meanings carried by <i>ergazesthai</i> itself. An example of terms cloudiness can be found at <i>Charmides</i> 161e – 163c (Plato, 1952b, 1955a; 1992a, pp. 71-74)
	<i>polis</i>	A cognitive or esoteric political gathering.
	P(p)olis	P(p)olis is a marker derived from <i>Polis qua</i> esoteric gathering to identify either a touchable, visible, manufactured, constructed or exoteric gathering of bricks and mortar and institutions and regulations and the like, or illness of fit of the term <i>Polis</i> depending on context. A gathering in an exoteric sense identified by laws, institutions, bricks and mortar and the like.
<i>praxis</i>	Either in a simple modern form as a combination of theory and application combined, or particular usages explained in appropriately located text boxes within the enquiry, for example on page 166.	

P	<i>praxis qua phronesis</i>	After usage by Arendt as political action or working out of ideas as <i>phronesis</i> or prudence practical wisdom in contrast to her usage of <i>theoria qua sophia</i> understood as theoretical wisdom's pursuit of wisdom as a patron of action. <i>Theoria qua sophia</i> marks intellectual mankind and <i>praxis qua phronesis</i> action mankind, the full souled version not being given an epithet.
	<i>primum mobile</i>	In Bacon's day the movement of the outermost sphere of the heavens, generic meaning being first moved.
	<i>principia exempla</i>	Eriugena's phrase for divine names such as goodness, truth, virtue, and wisdom.
	<i>profanum vulgus</i>	Vulgar herd.
	<i>psyche</i>	Soul
q	<i>qua</i>	In the capacity of.
	<i>quidditas</i>	Scotus' term for thisness.
	<i>Qui longum note scriptori proroget ævum.</i>	Which will secure a long age for the known writer. (Ben Jonson's translation (Jonson, 2015b, p. 127) of <i>Ars Poetica</i> by Horace (Horace, 1942, pp. 450 - 489).
r	regimen	Corneanu's word for operations performed on the human mind = cure, cultivation, education, training, government or discipline.
	reine anschauung (Kant)	Pure intuition. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
s	<i>sensus communis</i>	Either Aristotle's construct of a common sense understood as an ability occurring in animals when, by virtue of individual senses acting in unison, those animals may recognise existences of movement or bulk dimension, or more generally an intuitive kind of working understanding shared amongst people about social conditions and situations—use-your- <i>nous</i> use your common sense. Arendt's appropriation of common sense is idiosyncratic as explained in the text.
	<i>sinnlichkeit</i> (Kant)	Sensibility. Terms relationships are further discussed in the dialogue box on page 159.
	<i>sitz-im-leben</i>	Either (a) in biblical study a setting in life of a passage e.g. the passage might be a psalm, a parable or a letter, or (b) in a more general way as position or place in a community.
	<i>sophia</i>	The knowledge product of theoretical philosophy. The knowledge product of <i>theoria</i> narrowly differentiated from <i>doxa</i> or opinion, <i>techne</i> as knowledge of craftsmanship, the art of making or doing, <i>episteme</i> , or scientific knowledge or true belief, <i>phronesis</i> as practical wisdom, <i>sophia</i> as theoretical wisdom and <i>nous</i> as pure apprehending.
	<i>s'ouvrir</i>	To open oneself to.
	<i>sparagmos</i>	Tearing apart, rending or mutilating as in Dionysiac cult ritual. The following quotation illustrates the nature of sparagmos. "Two maenads are dancing in an ecstatic trance; possessed by the spirit of the god, they can perform superhuman feats of strength, are impervious to weapons and can handle wild animals and poisonous snakes without harm. Here, one carries a deer on her shoulders and the other dangles a young lion by its tail. The moment is approaching the <i>sparagmos</i> , the climactic act of communion with the god, when they will tear the animals to pieces with their bare hands and eat the raw flesh. These maenads are to be considered nymphs rather than contemporary mortal worshippers, but this violent form of Dionysiac cult continued to be practised in Thrace, and possibly in some parts of Greece, in the Classical period" (H. A. Shapiro, 2014, entry 16).
<i>synkatathesis</i>	In Stoic theory a free and conscious act, under patronage of <i>hêgemonikon</i> , of judging the correctness and moral status of the <i>phantasia</i> .	

The remainder of this page is intentionally blank to accommodate software formatting imperatives.

t	<i>tabula logica</i>	A table of concordance of degrees of abstraction with degrees of real existence in a context of emanation literature.
	<i>taxis</i> and <i>cosmos</i>	<i>Taxis</i> is made order, for example order in a battle or order in a procession to distinguish it from <i>cosmos</i> as right order in a community or state. The phrase <i>taxis</i> and <i>cosmos</i> as when used in this enquiry signifies a condition of right order, procedure and place occurring when wisdom's effectively discernment between the harmful and unharmful leads mankind to that which never harms.
	<i>techne</i>	Craftsmanship, or art of making or doing and its knowledge as differentiated from <i>doxa</i> or opinion, <i>episteme</i> as scientific knowledge or true belief, <i>phronesis</i> as practical wisdom, <i>sophia</i> as theoretical wisdom and <i>nous</i> as pure apprehending.
	τελετή	Ceremony or rite.
	<i>themis</i>	Themis, Dike's mother, announces law so that <i>themis</i> is a marker of social order. Simple translation is problematic.
	<i>theoria</i> .	In a narrow sense as state of knowledge and mind occasioned by speculative wisdom's contemplation of the unchanging, or, more loosely, states of mind and knowledge associated <i>phronesis</i> and <i>poiesis</i> by scholarly attribution As outlined in text boxes appropriately located within the enquiry..
	<i>theoria qua sophia</i>	After usage by Arendt as theoretical virtue's pursuit of wisdom as a patron of action in contrast to her use of <i>praxis qua phronesis</i> as political action or working out of ideas as <i>phronesis</i> or prudence. <i>Theoria qua sophia</i> marks intellectual mankind and <i>praxis qua phronesis</i> action mankind, the full souled human not being given an epithet.
	Θεός Θ = th	God or with no capital, god in the pagan Greek sense.
	<i>theos</i>	God with a small g.
	<i>thiasos</i>	Procession and/or retinue of people associated with, or followers of, a personage. Note: " <i>Thiasos</i> : a group or band of associated deities or other figures, sometimes participating in a feast or celebration, as with Dionysus's <i>thiasos</i> " (Perseus Digital Library, 2014).
	<i>thymos</i>	Spiritedness.
<i>travailler</i>	To work or toil.	
u	<i>uberwindung</i>	Breaking through, triumphing over, going beyond or leaving behind that which no longer has relevance or meaning as distinguished from <i>verwindung</i> as overcoming or getting over or surpassing by winding or twisting or deviation without completely leaving behind or consigning to oblivion that overcome. One overcomes fear, or illness or obstacle in this manner.
	<i>universalia ante rem</i>	Universals before the thing.
	<i>universalia in re</i>	Universal essences existing within the thing.
	<i>universalia post rem</i>	Universals after the thing.
v	<i>vernuft</i> (reason)	Comprehension at work in distilling principles, and in systematisation of concepts brought to it by understanding into one unified whole. The ideas, namely soul, cosmos and god are its <i>a priori</i> . Pure reason "never refers direct to objects, but to the concepts of objects brought to it by the understanding (Kant, 1896, pp. 272 – 273).
	<i>verstand</i> (understanding)	Understanding making intuitions into conceptions. Whatever objects may be, there is in human mind a receptivity called sensibility, or <i>sinnlichkeit</i> , and this sensibility is capable of receiving representations or <i>vorstellungen</i> as affects of objects. Sensibility so constructed provides mind with intuitions or <i>anschauungen</i> . <i>Verstand qua</i> understanding is that which converts intuitions into conceptions or <i>begriffe</i> . Pure intuitions are empirical and are given by space and time, pure forms existing a priori in mind independent of experience.
	<i>verwindung</i>	Overcoming or getting over or surpassing by winding or twisting or deviation without completely leaving behind or consigning to oblivion that overcome. For example one overcomes fear, or illness or obstacle. <i>Verwindung</i> is differentiated from <i>uberwindung qua</i> breaking through, triumphing over, going beyond or leaving behind that which no longer has relevance or meaning.
	<i>Video meliora,</i> <i>proboque, deteriora</i> <i>sequor.</i>	I see and approve of the better but follow the worse. after a translation from Ovid <i>Metamorphoses</i> VII, 20 - 30 or VII 25 – 30 (1826, p. 159; 2008, p. 144).
	<i>vorstellungen</i> (Kant)	Representations (in the mind) of something without, of some object. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
	<i>vorstellungsfahigkeit</i> (Kant)	The faculty of representation. Inter-relationships amongst Kant's terms are explained in a dialogue box on page 159.
w	<i>werken</i>	Work, connatively creation as opposed to <i>arbeiten qua</i> work connatively slavery.

x	<i>xynon</i>	In Heraclitus, the common reality.
y	no entry	No entry.
z	no entry	No entry.

Index of Foreign Word Usage (Hebrew-English Equivalents for Enquiry Purposes)

(alef)	אלהים (L ← R)	God(s). Caution: “This conception [of mine that Israelite religion included a council of gods (אלהים) and servant angels (מלאכים) under Yahweh-El] included the idea that Yahweh was “species unique” in the Israelite mind, and so terms such as henotheism, polytheism, and even monolatry are not sufficiently adequate to label the nature of Israelite religion. Those who use such terms also assume that אלהים is an ontological term in Israelite religion, denoting some quality or qualities that points to polytheism if there are more than one אלהים. This fails to note the use of the term within and without the Hebrew Bible for the departed human dead and lower messenger beings מלאכים ⁽¹³⁾ . Rather, אלהים in Israelite religion denotes “the plane of reality” or domain to which a being properly belongs (for example, the “spirit world” versus the “corporeal world”). For these reasons and others it is more fruitful to describe Israelite religion than seek to define it with a single term” (Heiser, 2006, pp. 1-2).
מ (mem)	מלאכים (L ← R)	Servant angels
ו (vav/vau)	והיה (L ← R)	YHWH, Yahweh

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Devotion

To Noela Jean Eddington, Her Children, and Grandchildren

Abstract

Relationships amongst Science, Ethics and *Polis* in Pre-Modern Times

The major aim of the enquiry is to effect a multiple-voice interpretation of conditions of political philosophy both prequel to, and then metamorphosing coincident with, a new era discerned emerging during the times of Francis Bacon and Thomas Hobbes. Political philosophy prequels are detected, measured and tracked within an enquiry method constructed for such purposes. Three key terms—Science, Ethics and *Polis*—are central to the whole enquiry (a) because key terms meanings and interrelations amongst them generate those political philosophy prequels, and (b) because those same key terms meanings and interrelationships inform three Thesis Proposition Statements articulated and evaluated throughout the enquiry. The key terms are shown to contain both esoteric and exoteric dimensions and within the method, esoteric key terms nuance is sequentially and consistently transformed into political philosophy through chapeau questioning of three elements of esoterism inhering in each key term. As the enquiry progresses, and prequel political philosophies emerge, geographies of mind intrinsic to them are brought to a common neuroscientific base for comparison purposes, this linking process serving the enquiry’s minor aim which focuses on philosophy’s ongoing efficacy in analysis of human condition and *Polis*.

The enquiry proceeds as follows: first political philosophies representative of the times of Plato and Aristotle (BC 384 – 322) are derived from works written during the period from Homer (circa 8th century BC) to Aristotle (BC 384 - 322) inclusive, and from recent scholarship about those works. Next follows articulation of perceived ongoing change of Aristotelian political philosophy coincident with (a) intermingling of Greek, Jewish and Christian traditions from after Aristotle (BC 384 – 322) to the time of Augustine (AD 354 – 430), and (b) the spread of monastery and cathedral school education, rediscovery of Aristotle and the wider Greek tradition in the West, and transition of cathedral schools into universities in the centuries after Augustine. In the time from Aristotle to Augustine a transition from political philosophy predicated on rational Ethics and an impersonal god to one predicated on faith Ethics and a personal

God is conjectured to have occurred. After Augustine an integrated, complex, erudite, unified political philosophy representative of the time of Thomas Aquinas (AD 1225 - 1274) is conjectured unravelling and fracturing by the time of Jean Buridan (AD 1300 - 1358). In turn, re-emergence of experimental Science conjectured to have occurred during the period from Albert Magnus (AD 1193 - 1280) to Isaac Newton (AD 1643 - 1727) is discussed and its possible contributions to emerging political philosophy are evaluated in the light of works by Francis Bacon (AD 1521 – 1626) and Thomas Hobbes (AD 1588 - 1679). Other influences are acknowledged and brought to the enquiry in the form of multiple-discipline, multiple-voice constructions of exoteric backgrounds—historical events, specific discoveries, well documented scientific inventions, artworks, military battles and the like—amongst which exoteric backgrounds, progressively measured esoteric prequels and their attendant political philosophies are situated for time marking purposes. A discernibly new political philosophy is detected emerging during the lifetimes of Bacon and Hobbes, and is conjectured so different in nature from any of those identified, long standing, integrated, political philosophy prequels that developed incrementally over the preceding two millennia so as to signal their quickening decline coincident with dawning of a new era.

Qualified conclusions are derived and, within constraints imposed by the constructed methodology, and in fulfilment of the minor aim, questions are raised about contributions philosophy may make to ongoing investigation of human condition and *Polis*.

Introduction

Relationships amongst Science, Ethics and Polis in Pre-Modern Times is the title given to this enquiry into Pre-Modern heritage and its basis for, and possible contributions to, fundamental conditions from which a new era, subsequently named the Modern Age, may have begun its emergence. The enquiry does not then identify tenets of modernism

Enquiry Usage of Esoteric and Exoteric

Esoteric

Of ideas as opposed to materiality, thus Plato's city of ideas is esoteric and Pericles' beautiful physical Athens is exoteric. Likewise Plato's Science *qua* soul's beholding of forms is esoteric while his own reliance on watertightness to explain the soul's imprisonment is, like Anaximander's explanation of earthquakes in terms of physical elements rather than in terms of gods, exoteric. An esoteric Rousseau *qua* educator of youth might inhere in his artistic creation of *Émile* (Rousseau, 1918). An exoteric Rousseau *qua* educator of youth might reveal itself in his depositing children in an orphanage or poorhouse say. An exoteric Rousseau may too reveal itself in a French education system partly informed by that work *Émile* (Rousseau, 1918) years after books by that name were burnt.

Exoteric

Actual as sensed rather than ideal as thought about, the making or doing of, rather than the thinking of alone.

This enquiry contains a posit that while differentiation between esoteric and exoteric in the manner explained is plausible for discussion purposes yet the esoteric and exoteric inform one another, the nature of the bridge between them constituting a perpetual conundrum.

Enquiry methodology's employment of an esoteric/exoteric divide is discussed further on pages 186 to 189. The manner in which enquiry usage of these terms differs from their use elsewhere in the literature is discussed on page 184.

and search for their Pre-Modern origins. Rather its focus is on Western political philosophy prequels to what later was to be called Modernism, and detection of a new era through application of an analytical method to derive those prequels, a new method developed independently of them and of what is now called a Modern Age.

The major aim of the enquiry is to effect a multiple-voice interpretation of conditions of political philosophy both prequel to, and then metamorphosing coincident with, emergence of a new era subsequently named the Modern Age. There is one minor aim, namely to

focus, from a geography of mind perspective, on mankind's struggle with the fact-value and theory-action divides, and glean from that focus and from insights gained from ongoing application of enquiry methodology, an opinion about contributions philosophy might offer to ongoing enquiry about human condition and consciousness, and twenty-first century speculation about *Polis*.

The major aim is effected by articulating meanings of, and relationships amongst, Science, Ethics and *Polis* through engagement with socio-cultural, socio-political and socio-physical conditions that may have informed these meanings and relationships from the times of Presocratic thinkers and Plato (BC c.428 – c.348) up to and including the

times of Francis Bacon (AD 1521 – 1626) and Thomas Hobbes (AD 1588 - 1679). Science, Ethics and *Polis* are key terms and engagement is understood as interpretation of selected and justified texts germane to these terms, and analysis and application of

Geography of Mind?

For example, all of the hierarchies constructed to help explain Bacon's divisions of knowledge in Chapter 8, if joined together, constitute a geography of mind. Likewise the information in the text box on page 540, if converted into a chart, might better represent another geography of mind. Similarly the content of Table 23 on page 230 might form part of Aristotle's geography of mind, if one dare be constructed from the five components of soul he names—nutrition, perception, cognition, imagination and desire—and interrelations amongst them, and one for Aquinas drawn up on the basis of interrelationships amongst the virtues outlined on page 416, and explanations of synderesis and infused cardinal virtues explained in the accompanying text. Hobbes has his Bacon-hierarchy equivalent and so too Kant and so on up to neuroscience's ongoing mapping. This geography of mind construct is employed in a general manner in this enquiry under severe caveat only in respect of tentative articulation of the enquiry's minor aim.

philosophical and other-discipline construct considered relevant for enquiry purposes. The enquiry progresses by bringing traced and articulated nuance in these key terms to reiterative interpretation of three Thesis Proposition Statements containing those terms, of which more later in this Introduction and Chapter 2.

Foundational attributions of enquiry key terms, and other important ancillary terms, inform the enquiry. Science means the pursuit of true knowledge—knowledge of that which can be no other. Ethics means correct action and just desire in personal and social affairs, and *Polis* means political gathering. Political

Received Convention: Pre-Modern, Modern and Post-Modern Ages

Pre-Modern
The era from Hesiod (c. BC 750 – 65) to AD the 1650s.

Modern
The era from circa the 1650s to circa the 1950s.

Post-Modern
The era from circa the 1950s to the present with postulations and urgings of emerging eras such as Digimodernism and Post Protomodernism.

philosophy is critical moral evaluation of political gathering. These foundational meanings attributions, which do not change over the duration of the enquiry, are derived from a number of sources and are further clarified as the enquiry progresses. Each of these key terms is postulated to have an esoteric dimension and an

exoteric dimension and, after qualifications are made and caveats drawn, and even though the foundational key terms attributions apply to both dimensions, the enquiry focusses on the former of these, that is, on the esoteric dimension. The accompanying dialogue box on page 1 provides a working explanation of the distinction between the words esoteric and exoteric as these are employed in this enquiry, of which more later. The term Pre-Modern refers to the first of the three era names explained in the dialogue box on page 2, such names being widely and conventionally used to categorise

development of Western society. The enquiry does not in respect of its first aim, except in some limited cases for benchmarking purposes, engage much beyond the times of Niccolò Machiavelli (AD 1469 – 1527), Francis Bacon (AD 1561 – 1626), and Thomas Hobbes (AD 1588 – 1679). That is, while a new political philosophy is discerned emerging amongst works by these authors, the enquiry does not follow that discerned emerging political philosophy's continuance and change during the times of an era now referred to as a Modern Age. Thus the term Modern Age serves as no more than an arbitrary enquiry-purpose convenience to identify the Pre-Modern Age as an era in sunset in the second half of the seventeenth century. While ages may come and go, ideas may remain and subsequently reappear in new settings. P(p)olis, a marker derived from *Polis qua* esoteric gathering identifies a touchable, visible, and otherwise sensible exoteric human gathering including its constructions of bricks and mortar and its trades and skills, institutions, laws and regulations and the like. An enquiry such as this cannot help but approach its subject from a general position of hindsight.

An unchanging and fixed ideas relationship hierarchy which binds the key terms together, and which applies in both esoteric and exoteric domains, also informs the enquiry. To wit, on the esoteric side, thinking about adjustment of societal arrangements aimed at improving conditions of gathering *qua Polis* begets political theory. Thinking about justly-desired right action to effect political theory begets Ethics theory and thinking about the purpose for which such adjustments might be made begets political philosophy, generally understood as critical moral evaluation of political gathering. *Polis*, political and ethical thought and political philosophy so linked *qua* esoteric knowledge domains can hardly be discrete categories and each also has its paired exoteric existential associate, respectively P(p)olis, policy strategy, ethical condition *qua* active state of being and politics which in turn generate an exoteric relationships hierarchy. Science, esoterically that which can be no other, whose source is reason, inheres everywhere within the esoteric relationships hierarchy and when sought for exoterically is postulated found in various forms of applied scientific method.

The thinking of *Polis* and the making of P(p)olis inform each other and the question of which came first, if indeed answerable in simple specification of one-before-the-other, is not considered crucial for enquiry purposes. Arrival of *Polis*/P(p)olis is postulated coeval with arrival of human consciousness and dawning apperception of mankind's so-called break from nature. In addition, focus on the esoteric dimension of these domains and their attributed ideas-relationships framework hierarchy inevitably, and sometimes involuntarily, invokes their exoteric associates.

Again, foundational attributions of key terms meanings, and of an attendant ideas-

Thesis Proposition Statements⁽¹⁾

(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of *Polis* situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of *Polis* is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.

(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

Notes: (1) The term Modern Age simply marks an era posited arriving circa the 1650s and departing circa the 1950s.

relationships hierarchy framing them, remain constant throughout the enquiry which yet attempts to track key terms nuance and carry it to progressive interpretation of the Thesis Proposition Statements outlined in the dialogue box on page 4, which Proposition Statements employ those key terms. Such a task, that is the task of tracking such nuance amongst attributed definitions and an ideas framework considered unchanging, might appear absurd—a case of have-your-cake-and-eat-it, and a contradiction in terms—and is also discussed further in this Introduction and in Chapter 2

where the enquiry's methodology and its exoteric/esoteric divide construct are clarified further. Until then an analogy might help clarify the apparent contradiction. Were a house being discussed, the foundations *qua* unchanging base and framing patterning perimeter might represent the foundational attributions while subsequent above-base renovations and alterations might represent change or nuance. Nevertheless, analogy can only go so far and the enquiry is not about such exoteric constructs as houses and the like but rather about meanings of key terms words *per se* and ideas-relationships amongst them. Consequently, foundational attributions of key terms and their relationships framework might be considered as denotative meanings and tracked

nuance as connotative variation. Of course foundations do crumble, that is root meaning can become lost under new layers, yet such an issue, briefly discussed further in Chapter 2, is not considered fatal to enquiry methodology. Until then, traced incremental changes in key terms meanings and relationships and progressive interpretation of Thesis Proposition Statements in terms of these are intended to be understood within the boundaries and limitations of those denotative attributions of key terms meaning and ideas-relationships hierarchy earlier explained.

I turn to general discussion of the context and scope of the three Thesis Proposition Statements and then to explanation of enquiry structure and chapter content.

Context and Scope of Three Thesis Proposition Statements

As earlier explained, the major aim is realised through articulation of Thesis Proposition Statements which in themselves frame enquiry scope. These Thesis Proposition Statements are:

(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of *Polis* situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of *Polis* is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.

(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

These Thesis Proposition Statements emerge in part from reading Straus's *Political Philosophy of Thomas Hobbes*, (L. Strauss, 1966) in part from uncertain notions, ideas and wonderings formed during undergraduate days, and in part from general reading and discussions with colleagues since those days. Although Strauss is mentioned, the enquiry

Reading Caveats

(1) In this enquiry I trace nuance of key enquiry terms Science, Ethics and *Polis* in the context of a development of Western ideas. There is engagement with writings of scholars who were also men of Churches. Nonetheless, the enquiry is primarily about political philosophy. The enquiry is not about theology, or creation, or so-called Post-Modern tensions between Science and religion and takes no sides, nor offers findings or criticisms in such matters. Rather the enquiry is simply an attempt to contribute to understanding of so-called Pre-Modern conditions which may have helped occasion an emergence of a new era. The enquiry is also, *inter alia*, an attempt at an alternative approach to articulation of Western history of ideas from which to enquire into philosophy's continuing efficacy for analysis of human condition and *Polis/P(o)lis*, and identify possible areas for future research..

(2) I follow a convention of using lower case nouns and pronouns when referring to so-called pagan gods and first letter capitalisation thereafter. Thus Plato's so-called one has a lower case first letter and is a god, rather than a God.

(3) In parts of the enquiry I indirectly touch on expressed beliefs respectively important to Christians and/or peoples of Islamic and Jewish faiths. In such discussions, I may, in spite of my best efforts to the contrary, have used words which might offend. No offence is intended and deliberate pejorative interpretation of perceived theological or religious differences has no place in this enquiry.

(4) Centre aligned font 10 small capital and lower case headings, rather than margin annotations, are provided as reading guides and *aide memoirs*. These devices are employed because in many of the chapters much development work has to be done before key terms nuance can be traced in a consistent manner. Even with these headings, some of the chapters take a long time to bring ideas together before getting to main points, but there is no escaping such apparent inertia which is dictated by the nature of the enquiry and the key terms developments investigated in it. Sections on Aristotle, Eriugena, Aquinas, Roger Bacon, and Francis Bacon are named in this respect. As noted in (5) below in this box, so-called in-text aids are employed to help alleviate this burden.

(5) In-text aids to reading include first letter capitalisation of key terms Science, Ethics and Polis, italicisation of foreign words and book titles, frequent use of the word so-called as a qualifier to signal underlying contestation and/or invite interpretive caution, occasional use of single inverted commas to alert possible presence of additional connotative meaning, or that a seemingly out-of-place word usage is intended. Numbers in square brackets, for example [5], may form part of conventional translations of writers like Plato and Aristotle. Square bracket inclusions other than these are identified within citations by the words "my square brackets", or "my brackets" or "my round brackets" as the case may be.

(6) Text boxes are used to carry forward and repeat information developed in earlier chapters when such information is referred to again in enquiry text, after pages of dormancy. Background information and/or contention is also sometimes included in text boxes and tables so as to separate it from main ideas flow. Summary tables throughout the chapters are designed to provide helpful guides to tracking of key terms nuance and integrating articulation of Thesis Proposition Statements 1, 2 and 3 in terms of that nuance.

(7) While historical background contexts provided serve as buoys to anchor developments in ideas, ideas-temporality takes priority over historical-events temporality in respect of enquiry focus. Likewise, in so far as it is possible to separate them, ideas themselves are sometimes of more importance than their respective progenitive ideologies.

(This dialogue box continues on the next page.)

is not Straussian and Strauss' subsequent acknowledgement of Machiavelli's earlier-than-Hobbes contribution to substantial change in political philosophy is acknowledged (L. Strauss, 1966, p. xv). Articulation of the Thesis Proposition Statements 1, 2 and 3 by virtue of which the major aim is realised is effected through critical analysis of, and questioning engagement with, English translations of original works.

Where such translations are not available I engage with scholarly commentary and opinion provided in English by writers fluent in the native language of those original works.

For instance, in the case of say Abelard's *Theologia Christiana* (Abaelardus, 2014) I engage with scholarly opinions and explanations provided by

Ueberweg who lived closer to the times of these thinkers, who was fluent in Latin, and whose work continues to be read. I also consult some histories of philosophy, Ethics,

religion, church dogma, education and Science, and other literature, as guides to historical trends, conventions, etymology and countervailing opinion.

Uncertainties about the hand or hands of authorship of classical and mediaeval texts, questions about quality of translation, and difficulty of divining accurate meanings of

Reading Caveats (Continued)

(8) The so-called ‘falls’ discussed in this enquiry, for example a fall of Aristotelian reasoned Ethics to Christian faith Ethics, are not falls in the sense of Khunian paradigm shifts. That is, newly arrived ideas do not completely annihilate old ones. Cultural richness and complexity is taken to increase by assimilating change and by accommodating and modifying ideas.

(9) Illustrations employed serve as an open-ideas complement to the text, their chronology being generally relevant but of lesser importance. Facial likenesses are subject to sculpting and painting conventions which might obscure faithful representations.

(10) Enquiry text is a mixture of active and passive voice and involves some use of first person for efficiency of expression purposes. In no cases is correctness or incorrectness of argument, opinion and the like asserted through use of the first person singular which when used has no intended egotistical content. The enquiry is performed as quiet exploration and learning in full acceptance of contestability of progressive claims and final conclusions. Writing condition is such that the writer is in the writing, whether present in the first person or covert through its absence.

(11) In citations the abbreviation n. p. indicates that no page number can be provided because the source cited, being an electronic document or the like, carries no page numbers. Likewise the term n. d. indicates that the source cited does not provide its year of publication as is the case for an issue of the complete works of Francis Bacon issued over some ten or twelve years.

(12) Curtin University rules governing submission of this PhD thesis prescribe American Psychological Association (APA) citation and referencing formats and the 6th edition of APA is the working default. Slight variation of APA format is used to accommodate in-text citation convention specific to such authors as Plato and Aristotle. In such cases two citations are always given to confirm translated meaning and the name of the work is provided together with further information about book and/or chapter and/or chapter line details within the work. For example in the in-text citation *Metaphysics* XI 7 1064a30 – 35 (Aristotle, 1952, p. 592; Aristotle, 1989) *Metaphysics* is the title of the work, XI the number of a book within the work, 7 is a chapter within that book, 1064a30 – 35 specifies line sections within that chapter and the bracketed content specifies publication/reference list details, one of the two bracketed references always containing a page number to satisfy APA requirements. Sometimes chapter number is not provided. Similar slight variation is used for other ancient writers and also in some cases for Bacon and Hobbes.

(13) Caveat 13, which addresses the manner in which Damasio’s *Self Comes to Mind: Constructing the Conscious Brain* (Damasio, 2010) is used as a basis for comparison of earlier geographies of mind, is contained in a dialogue box in Chapter 10 on page 613.

past usage of terms all constitute constraints to the enquiry. To countervail, I select well accepted and enduring translations of classical works, and refrain, unless where otherwise qualified, from basing claims on original works whose authorship is disputed. Such countervailing strategy is not necessarily without its own defects. Problems concerning authorship and temporality of scripture are discussed in Chapter 4.

The conclusions of most enquiry chapters contain tables of key terms nuance and progressive articulation of Thesis Proposition Statements

to assist a reader to follow the integrating argument of the enquiry. When offered, discussion of historical events is designed to provide simple where-and-when beacons within an already mentioned esoteric approach taken in the enquiry, of which esoteric approach again more later in this Introduction and in Chapter 2.

In all enquiry chapters except Chapter 2, a general component provides background and context, and a specific component traces key terms nuance, changing key terms relationships meanings and progressive articulation of Thesis Proposition Statements against that background, summary tables provided in conclusions to these chapters being an outcome of that process. One set of summary tables presents key terms nuance progressively drawn from chapter content. A second set of summary tables presents progressive articulation of Thesis Proposition Statements 1, 2 and 3 in the light of that captured key terms nuance outlined in the first summary tables. Placement of summary tables of key terms nuance and progressive articulation of Thesis Proposition Statements in chapter conclusions constitutes a general pattern partly developed in Chapter 1, explained further in Chapter 2 and fully present in each of Chapters 3 through 9. Important general qualifications to enquiry structure, delivery, process and procedure are provided in the accompanying reading caveats box continuing over pages 6 and 7. General discussion of such issues of who, dialogical Socrates *vis a vis* Plato, originally generated ideas, and of a correct chronological order of Platonic works containing such ideas, is generally discussed in the dialogue boxes on pages 9, 10, and 11 provided for background referent purposes when such issues are subsequently raised in the enquiry on pages 109, 142 and elsewhere briefly in passing.

The minor aim depends on progress and completion of the major aim so that further discussion of the minor aim is postponed until Chapter 10.

Explanation of Enquiry Structure Begins

The enquiry is divided into three parts.

Part One consists of Chapters 1, 2 and 3 and begins with discussion about emergence of *Polis* from nature, a Presocratic flowering of Science as knowledge of the natural world, and notions of Science and Ethics inherent in philosophy emerging in Plato's time. After engagement with works by Plato and Aristotle Part One ends with a statement of Aristotelian political philosophy. By building on Plato, Aristotle had developed a political philosophy that remained influential for some two millennia.

In particular, in Chapter 1 I first examine three kinds of philosophical enquiry said to be

Dating Plato's Works and Managing a Dialogical Socrates/Plato Divide

Dating of Plato's works in the manner of say Jowett (1892, pp. xxix – xxxvii) or Guthrie (1975b, pp. 39 - 56) bespeaks a received convention in which Plato's development, variously defined, is gleaned from his works chronologically ordered, relatively, into early, middle and late groups. Received scholars, commenting or building on this tradition, for example, Fine (1999, pp. 200 – 226), Irwin (1977, passim; 1992, pp. 51 - 89; 1995, passim), Kahn (1981, pp. 305 – 320; 1988, pp. 69 - 102), Tarrant (1982, pp. 2 - 22; 1994, n. p.) and Vlastos (1957, pp. 496 – 516; 1988, pp. 362 - 396; 1991) have contributed to articulation and refinement of this convention.

In this relative chronology tradition, early works, in so much as they differ from late works, may, *inter alia*, allow insights into both the character and ideas of that man Socrates, while middle, and/or now-called transition dialogues, together with later dialogues, may provide further insights about Socrates, and about Plato's own development and breaking away from the so-called spell of Socrates. For example, the development of the theory of ideas outlined in Table 6 may owe much to Plato himself. There is in this convention an element of circularity in that exegesis of a Socrates/Plato divide might be employed to establish chronological order, and vice versa or if the question is one of dating, ideas development might be used to establish chronology and vice versa. Nevertheless the work is fine, insightful and impressive and in Jowett's case (1892, p. xxxvii) recognises unity and development of Plato without imposing a system on him. Stylometric dating technique took a new step in line with emerging electronic computing technology, Brandwood (1990/2009) and Ledger (1989) being leading examples. Nails (1995) claims in her enquiry into how Plato might be read, and in respect of stylometric approaches to dating Plato's works, that if Thesleff (1982) is right—Thesleff's stylometry is focussed on elements of biography and history and his work is hardly dominated by electronic computation alone—then no amount stylometric analysis will untangle Plato's chronology (Nails, 1995, p. 6).

Alternatively, if Ledger (1989) is right—Ledger investigates style by electronic stylometric methodology applied to counting letters, words and word strings—new levels of accurate dating of Plato's works have arrived (Nails, 1995, p. 6). If either Thesleff or Ledger is wholly right says Nails the other is wrong, and so to, leading developmentalist views (*ibid.*, p. 6). As the accompanying text box on page 11 reveals, Ledger and Thesleff, who offer publication dates by year, differ about the number and chronology of Plato's works.

(This box continues on page 10.)

extant during the time of Plato's life and search for information each reveals about the nature of Science and Ethics in those times. Both Science and Ethics are found to be conditions of soul. Because philosophical enquiry *per se* is said to have emerged from primitive religion as a logical consequence of growth and development of human settlements, the chapter's enquiry also ventures beyond that extant philosophy in search of first principles of Science and Ethics.

Taking the lead from Cornford that first stirrings of soul are found in an awareness of otherness and out of body feeling said to accompany ritual frenzy, an attendant claim is investigated, namely, that the origins of Science and Ethics themselves are inherent in natural law, that is, in practices emerging from a need to obtain sustenance from tribal habitat and place.

If my interpretations of the Cambridge

Ritualists and Aristotle are valid then it appears that neuroscience, as represented by Damasio, has arrived in a similar place (Damasio, 2010, pp. 2 – 152, 159 - 160).

Chapter 1 also articulates possible then-extant usage of some clearly defined terms considered germane to philosophy in Plato's times. These terms—justice, virtue, god and happiness—are subsequently used to engage with some of Plato's works, and with

commentaries by other scholars, to derive detailed starting expressions of the enquiry terms Science, Ethics, and *Polis*. These meanings are used to help explain a manner in

Dating Plato's Works and Managing a Dialogical Socrates/Plato Divide (Continued)

Nails (1995, p. 65) finds one point of general but not unanimous agreement between Ledger, Thesleff and traditional groupings—common acceptance, on the basis of style, of a group of dialogues, namely, *Timeous*, *Critias*, *Sophist*, *Politicus*, *Philebus* and *Laws* as late dialogues. Nails (1995, pp. 58, 59, 60, 76) also provides examples of chronologies grouped under general names—stylometric after Campbell (1867), Brandwood (1990/2009) and Ledger (1989); philological after Lesky (1966) and Thesleff (1982) philosophical after Fine (1999), Guthrie (1975b, pp. 39 - 56), Irwin (1977), Kahn (1981, 1986, 1988), Kraut (1992), and Vlastos (1991), and a stand-alone example for Vlastos (1991) and provides clarifying analysis of similarities and differences amongst their chronologies and groupings.

Keyser (1992, pp. 50 - 74), not without contestation (Clayman, Crane, & Guthrie, 1993, pp. 75 - 81), imagines a battlefield of dead or dying stylometries, (Keyser, 1992, p. 72), is sceptical towards stylometry in general and argues that practitioners of it appear not to know what they are doing on statistical grounds, Ledger and Brandwood in his view not being wholly innocent on this account. Questions about chronology, about interpretation based on style, philosophical content or historical likelihood, and about the Socrates/Plato divide are acknowledged in a variety of contexts (Annas, 1999, pp. 72 - 162; Cormack, 2006, pp. 7 - 16 then passim; Rutherford, 1995, pp. 1 - 69).

Whether back with Jowett and his caution against analysing words “without reference to their connection ... [or by piecing] together different parts of dialogues in a purely arbitrary manner” (Jowett, 1892, p. xxxiii, my square brackets), or more lately with Nails' caution against stylometry's assumption of a linear development in Plato's dialogues (Nails, 1995, pp. 97 - 98, 124 - 127), stylometry narrowly defined *qua* computer analysis is not without its own issues. For example, Cryzbek (p. 66) is unable to succinctly define stylometry because of its own his-called unilinear and overlapping lines of development, let alone other issues of applied statistics *per se* (Eder & Rubicki, 2013, pp. 229 - 236; Herz & Bellaachia, 2014, n. p.).

Notwithstanding such issues, and even acknowledging James' modern claim that the only states of consciousness in which thoughts exist are personal consciousnesses (James, 1892, p. 153)—there being as many interpretations of words as there are readers or hearers, so that taken to extremes under radical constructivism say (von Glasersfeld, 1995, pp. 1 - 2) one of us, strictly speaking, is unable to tell the other where they might find the car keys—the whole subject is quite some treat, the purpose of this brief explanation being to provide explanatory and general background information only. Of course personal independent ideas appear to overlap sufficiently to solve most where-are-the-keys-type problems and Plato's own confrontation with words and how to make them into meaningful definitions upon which thoughts might be shared is instructive in its own way.

(This box continues on page 11.)

which Science and Ethics inform the political philosophy of a Platonic *Polis*. To wit: Science occurs when, through partaking of forms, soul arrives at knowledge of the beautiful, good and unchanging. Ethics occurs when wisdom, through discerning between what is harmful and unarmful, leads mankind to that which never harms and thereby facilitates achievement of right order, procedure and place in *Polis*, that is, with what the ancient Greeks called *taxis* and *cosmos* of *Polis*. *Polis qua* city of ideas and final cause of cognitive gathering, is predicated on four classic Greek values that inhabit soul. In an ideal *Polis* Science guides ethical choice that correctly leads mankind in

obedience to law, justice and temperance.

Some major methodological issues become apparent as Chapter 1 progresses, particularly that one commented upon earlier, concerning how, across an extended period covered by the enquiry, general consistency in key terms usage can be maintained in an enquiry predicated on capturing incremental changes in the meanings of those

terms. How, under such circumstances, can key terms be consistently and meaningfully

Dating Plato's Works and Managing a Dialogical Socrates/Plato Divide (Continued)	
Comparative Chronologies of Absolute Dates of Platonic Works Thesleff v. Ledger	
Ledger (1989)	Thesleff (1982, 1989)
400? Lysis	
399 Death of Socrates	
Euthyphro	
(Minos)	
Hippias Minor	
395? Ion	<392 proto-Republic2,3,5,7
Hippias Major	392-1 (394-380) Polykrates's pamphlet
Alcibiades 1	392 Aristophanes: Ecclesiazusae
Theages	<390 Thrasyarchus (later Republic1)
Crito	390 Isocrates: founds school, Against the Sophists
389 First visit to Sicily	<389 Apology
387? Founding of Academy	388-387 First visit to Sicily; Gorgias1 386
Gorgias	386 Peace of Antalcidas; Menexenus1 (a speech)
Menexenus	Phaedrus1, Protagoras 1 (without prologue)
Meno	384 Symposium1 (without prologue)
Charmides	Republic1,4
Apology	Meno
Phaedo	380 Gorgias2 (Socrates's report dropped)
Laches	Phaedo
(Hipparchus)	Euthydemus
(Amatores)	Symposium2
380? Protagoras	Protagoras2
Euthydemus	Menexenus2 (prologues added)
Symposium	Lysis
Cratylus	Charmides
Republic	Theaetetus1 (narrated dialogue)
Parmenides	Cratylus
369 Theaetetus	Phaedrus2 (latter part added)
	Theaetetus2 (Socrates's report dropped)
Second visit to Sicily	367 Aristotle joins Academy
366 Epistle 13	
365? Phaedrus	362 Parmenides (with second hand)
361-0 Third visit to Sicily	Republic2
355? Philebus	
Clitophon	350s Republic completed
354 Murder of Dion	
352-3 Epistles 7,3,8	"with secretary"25
Sophist	Timaeus (early 50s)
Politicus	Critias (early 50s)
350? Laws	Sophist (early 50s)
Epinomis	Politicus (early 50s)
Timaeus	Philebus (>354)
Critias	Epistle 7 (353-2)
348-7 Death of Plato	Laws (347)
Notes provided by Nails: 25 = According to Thesleff: "school accumulation" or "semi-authentic": <i>Clitophon</i> (379); 370s: <i>Crito</i> , <i>Laches</i> , <i>Alcibiades 1</i> , <i>Theages</i> , <i>Hippias Minor</i> , <i>Ion</i> ; 360s: <i>Amatores</i> , <i>Eryxias</i> , <i>Euthyphro</i> ; <i>Hippias Major</i> (360); 350s: <i>Epistles</i> 2,3,4,6,8,13, <i>Hipparchus</i> , <i>Sisyphus</i> , <i>Minos</i> , <i>Demodocus</i> , <i>De Virtute</i> , <i>De Justo</i> ; <i>Epinomis</i> (>347); L[edger]: parentheses = dubia/spuria. T[h[esleff.]: superscripts = editions (<i>Gorgias</i> 1, <i>Phaedrus</i> 1, and <i>Theaetetus</i> 1 being narrated dialogues, the others as described).	
Source: Adapted by Ian Eddington from Nails, D. (1995). <i>Agora, Academy and the Conduct of Philosophy</i> . (p. 134). Springer: Dordrecht. (Nails, 1995).	

applied in articulation of the Thesis Proposition Statements 1, 2 and 3?

This question and others are addressed in Chapter 2 where the enquiry methodology generally discussed earlier on pages 2 to 5, and again continuing below from this page until page 13, is further explained. In particular, esoteric meanings for Science, Ethics and *Polis* are measured by asking chapeau questions of three esoteric referent components attributed to each of those key terms, namely, cognitive

method, cognitive domain of operations, and cognitive constraints.

The first chapeau question, how do I come to know, is asked of method. The second chapeau question, what do I come to know, is asked of domain of operations and the third chapeau question, what limits my knowing, is asked of constraints.

These esoteric referents are short form expressions for particular mental procedures, processes and/or attendant cognitive domains. For example cognitive method refers to

GENERAL OVERVIEW OF A CHAPEAU QUESTIONING PROCESS TO DERIVE ESOTERIC KEY TERMS MEANINGS		
Chapeau Questions by Esoteric Referent ⁽¹⁾ by Key Terms		Esoteric Key Terms Meaning ⁽²⁾ (Generic Form of Answers to Chapeau Questioning of Esoteric Key Terms Referents)
How do I come to know?	Meth.	<i>Science</i> By the cognitive method by which Science provides knowledge. The kind of knowledge Science provides and the cognitive domains or states in which it resides. States of human condition that impede method and operations in Science are identified.
What do I come to know?	Ops.	
What states and conditions of mind limit my knowing?	Cons.	
How do I come to know?	Meth.	<i>Ethics</i> By the cognitive method by which Ethics discerns knowledge of ethical condition. The kinds of knowledge Ethics provides and the cognitive domains or states or conditions in which it resides. States of human condition that impede method and operations in Ethics are identified.
What do I come to know?	Ops.	
What states and conditions of mind limit my knowing?	Cons.	
How do I come to know?	Meth.	<i>Polis</i> By the cognitive method by which <i>Polis</i> as final cause engenders intellectual like-mindedness, that is intellectual gathering. By the kinds of knowledge <i>Polis</i> provides and the cognitive domains and states in which it resides. States of human condition that impede method and operation in <i>Polis</i> are identified.
What do I come to know?	Ops.	
What states and conditions of mind limit my knowing?	Cons.	
Notes (1) Taken esoterically Meth. = Method = cognitive or pure method by which the term produces its knowledge; Operations = Domain of Operations = Cognitive Domains or states in which knowledge operates; Cons. = Constraints = cognitive impedance to attainment of Method and Operations. (2) Key terms meaning <i>qua</i> answer to chapeau questioning is given a generic explanation in this overview box and can be brought into sharper focus through a quick perusal of Table 11 on page 183 and its attendant text and Table 12 on page 186 and attendant text which illustrate esoteric key terms meanings derived by application of the method in Plato's case. Change in key terms meaning discerned through progressive application of the method to writer after writer is the surrogate measure of nuance employed in this enquiry in the manner illustrated in the method overview box on page 609.		

the mental process by which the esoteric key term produces human knowledge. Thus when the chapeau question, how do I come to know, is asked say of Aristotle's Science, an answer might be for example 'by syllogistic reasoning of universals from universally commensurate premises'. Likewise an answer to the same chapeau question asked of Aquinas's Ethics might be 'by contingent will's free choice of means to ends under necessary will's adherence to happiness as mankind's end'.

Domain of operations is short form for cognitive domain or domains in which particular forms of knowledge inhere and function, constraints is short form for cognitive impedance of method and operations. Answers to respective chapeau questioning of these three esoteric referents for each key term completes a profile or measure of key

terms meaning. Caveats discussed in Chapter 2 accompany the esoteric key terms referents. Change detected in esoteric key terms meanings progressively so measured becomes the enquiry's surrogate measure of key terms nuance, the combined impact of this nuance being a surrogate measure of changing political philosophy by virtue of the presence of the three esoteric key terms in the Thesis Proposition Statements being articulated. A general overview of the chapeau questioning process is given in the diagram box on page 12 and further clarified in complementary boxes on pages 183 and 609 and their surrounding texts.

Chapter 3 focuses on Aristotle and his demolition of Plato's journey-of-soul explanation of noesis. I suggest that Aristotle achieved this end by allowing human reason to access eternal forms in nature beginning with a premise that individual beings exist, and continuing on to develop a unified political philosophy based on detailed explanations of Science, Ethics and *Polis* predicated on mankind's psyche and inherent social being. The chapter first addresses Aristotle's argument that form brings name to matter and that human understanding is made possible when human reason accesses the forms in composite beings. It then continues in articulation of Aristotle's system of rational Ethics wherein reason informs desire under practical reason's cognitive appeal to scientific reason and theoretical wisdom, when it, practical wisdom, is confronted with challenges arising in the realm of the lower moral virtues.

In next explaining Aristotle's foundation of Science as a process of induction and subsequent deduction operationalised through syllogistic method, the chapter proceeds to an interpretive understanding of the role of Science and Ethics in his political philosophy. Aristotle announces a *Polis* which, because it is none other than a development of a natural social instinct implanted in mankind, and also because of political mankind's penchant for justice with happiness, holds out promise of a gathering that is stable and good.

Chapter 3's derived understanding of Aristotle's political philosophy is essential to ongoing articulation of Thesis Proposition Statements 1, 2, and 3 which, *en précis*,

express a general view that a new era might be discerned emerging coincident with, *inter alia*, (a) *Polis* as a natural state being met by Polis/P(p)olis as an artificial state, (b) Science's estrangement from Ethics and theology, and (c) Ethics' estrangement from theology.

Part Two of the enquiry consists of Chapters 4, 5 and 6 and in it I enquire into changing meanings of, and relationships among, Science, Ethics and *Polis* that occurred first during the seven centuries from Aristotle's lifetime (BC 384 – 322) to Augustine's lifetime (AD 345 – 430) and secondly, during the ten centuries from the lifetime of Augustine (AD 345 – 430) to that of Buridan (AD 1300 – 1358).

The first time period from Aristotle's earthy *Polis* to Augustine's city of God is the subject of Chapter 4 wherein key terms and relationships meanings germane to Greek soul and its rational virtues are differentiated from key terms and relationships meanings germane to Christian *Logos* and its faith virtues. Chapter 4 contains interpretive understanding of the ways in which Christian faith virtues might be said to have subsumed classic rationalist Greek virtues. After first tracing possible Persian influence on Judaism in consolidation I discuss intermingling of Greek and Hebrew traditions and ongoing fusion of that intermingling with Christianity in development and suggest that, through these latter encounters, Aristotelian rational moral virtues were displaced by, even partly transformed into, absolute virtues of faith, and that theology alienated philosophy and sidelined Aristotelian Science. This reported change from virtues of reason to virtues of faith is postulated coincident with waning of Aristotle's four-causes explanation of being in favour of a moral teleology informed by God in Christ as the cause and explanation of all in all. Faith virtue is depicted as permeating a rational Greek soul while revealed truth is depicted as deposing reasoned scientific truth about the natural world. In turn, *Polis* became a heavenly gathering and final cause of attainment of grace through personal acceptance of God through Christ as *Logos*.

Chapters 5 and 6 contain discussion of that earlier mentioned second era from Augustine (AD 345 – 430) to Buridan (AD 1300 – 1358) which discussion addresses a slow

rehabilitation of Science and its attendant reason and how this occurred under a restraining patronage of revealed faith, and vicariously through a re-emergence of experimental method. There is some continuing focus on elucidation of that process by which classical Greek rational virtues might have been usurped by revealed faith virtues. I accept a view that a unified relationship amongst Science, Ethics and *Polis* was developing during this time of rehabilitation of Science, and that reason, through the new position of influence Science's rehabilitation allowed it, together with a re-emergence of experimental method itself, were soon to participate in destabilisation of Aristotelian political philosophy.

Chapter 5 which covers the time from Augustine (AD 345 – 430) to Abelard (AD 1079 – 1142), employs historical records and commentary on curriculum structure, content and teaching method in monastery and cathedral schools to assist in considering ways in which reason was employed to defend church dogma. I suggest that by the close of the twelfth century, reason was once again indispensable to Ethics. Although revealed truth, faith Ethics, and the heavenly *Polis* were to maintain a dominant position for a long time, reason, Science as syllogistic logic, was gradually becoming known as dialectic, and steadily being found indispensable to the needs of the authorities.

In Chapter 6, which covers the time from Abelard (AD 1079 – 1142) to Buridan (AD 1300 – 1358) in the context of a return to the West of Aristotle's wider corpus, I discuss how Magnus (AD 1193 – 1280) and Aquinas (AD 1225 - 1274) allowed that human mind can obtain objective truth through God's gift of divine reason. Aquinas' detailed explanation of Science as syllogistic demonstration and his teaching that Ethics involves will's free choice of means to ends in search of happiness are also discussed. In Aquinas's system, in which reason is compatible with faith, this explanation is given a more complex expression: Science is syllogistic demonstration *a priori* and *a posteriori* and Ethics is contingent will's free choice of means to ends under necessary will's adherence to happiness as mankind's end.

In particular, Chapter 6 contains an interpretation of the nature of relationships amongst Science, Ethics, theoretical reason, syllogistic reasoning, and practical reason or prudence in Aquinas's system as well as discussion of Aquinas' detailed explanation that through adherence to theological virtues and God's gift of grace, mankind might enter an eternal *Polis* and city of God. Aquinas' explanation of entry to *Polis* is complex. Wisdom or theoretical reason, and Science or syllogistic reasoning, under the intellect's necessary adherence to first principles of understanding, counsel practical reason called prudence. Prudence in its own way, under the intellectual appetite of the will's necessary adherence to precepts of natural law, determines, through syllogistic reasoning, choice of best means to ends. When such ethical reasoned choice is made in grace and under infused theological virtues, mankind is prepared for entrance to an eternal *Polis* and city of God.

Chapter 6 also conjectures that Aquinas' system began to unravel under the influence of John Duns Scotus (AD 1274 – 1308), William of Ockham (AD 1289 – 1349) and Jean Buridan (AD 1300 – 1358). I discuss how this unravelling allowed Science, metaphysics, and philosophy to win their freedom from theology when Duns Scotus (AD c. 1265 - 1308) announced that theology was a practical rather than a speculative faculty, and a faculty capable of direct perception of principles. I propose that Ockham's revival of nominalism, and his argument that universals exist nowhere in reality, also further questioned Aristotelian understanding of Science as knowledge of universals and discuss how, in part, this challenge prepared a way for emergence of natural Science as syllogistic reasoning about relationships amongst individual phenomena. Under Buridan, reason alone no longer separates mankind from the beasts. The will now plays a dominant role.

Chapter 6 is, as well, an interpretation of the last Pre-Modern political philosophy. Aristotle had been given modified residence in a heavenly *Polis* and city of God, which city was soon, under reasoned questioning by clerical and secular minds alike, to lose efficacy as an explanation of final cause of moral behaviour. The Part Two explanation of the possible nature of a transformed Aristotelian system provides insight into how

Aristotelian political philosophy lost much of its influence in an era when Science was expelled from theology and dogmatic rules were set against change. It is an important preparation for further elucidation of thesis Propositions 1, 2 and 3.

Part Three of the enquiry consists of Chapters 7, 8, 9 and 10.

Chapter 7 focuses on re-emergence of experimental Science during the thirteenth and fourteenth centuries and emergence of new applied scientific methods that occurred in the period from Magnus (AD 1193 – 1280) to Newton (AD 1643 – 1727). I suggest that natural philosophy was turning into natural Science and that this development, in the ferment of humanism, was soon to be part of a mix of so-called isms.

Chapters 8 and 9 respectively focus on works by Francis Bacon (AD 1521 - 1626) and Thomas Hobbes (AD 1588 - 1679) in whose combined writings I find a beginning estrangement or separation of Science from metaphysics and Ethics, and of Ethics from theology. I also find in works by Bacon (AD 1521 - 1626) and Hobbes (AD 1588 - 1679) elements of a new political philosophy and detect in these elements a political philosophy so different from scholastic accumulation of Aristotelian philosophy as to signal dawning of a new era.

Machiavelli's works *The Prince* (Machiavelli, 1968) and *Discourses on Levy* (Machiavelli, 1996) can also serve to signal emergence of a new era (Bloom, 1983a, Lecture 1 of 5 audiorecording, n. p.; Fischer, 2006, pp. xxxiv - xxxvi; Hornqvist, 2004, pp. 225, 275; L. Strauss, 1966, pp. xv - xvi; Sullivan, 2000, pp. 41 - 44). Machiavelli is acknowledged but not discussed in detail. There is no counting mechanism on the digitally remastered Bloom lectures so that the citation of Bloom above carries no time lapse marker number. Yet within the first half of Lecture One of five available lectures Bloom adds Machiavelli (AD 1469 – 1527) to Hobbes (AD 1588 - 1679), Locke (AD 1632 - 1704) and Rousseau (AD 1712 – 1778) as progenitors of liberal democracy.

Explanation of the claimed Bacon-Hobbes shift is followed in Chapter 10 by discussion of the veracity of the Thesis Proposition Statements, original contribution or otherwise

made through the enquiry, achievement of enquiry aims, and implications of enquiry findings for further research in philosophy, after which the enquiry closes.

Table 1 on page 18, which offers a summary of the articulation of Thesis Proposition Statements contained in this Introduction, is the first of a number of such tables given chapter by chapter as the enquiry progresses.

Table 1: Articulation of Thesis Proposition Statements Begins

INTRODUCTION			
#	Proposition Statements	Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Introduction	Foundational unchanging key terms meanings are established: The Modern Age is an era emerging circa the times of Francis Bacon (AD 1561 - 1626) and Thomas Hobbes (AD 1588 - 1679) and continuing to circa the middle of the twentieth century. <i>Polis</i> means cognitive or esoteric political gathering. P(p)olis is a marker derived from <i>Polis qua</i> esoteric gathering and it serves to identify either (a) a touchable, visible, manufactured, constructed or exoteric gathering of humans including for example their constructions of bricks and mortar, and their institutions and regulations and the like, or (b) illness of fit of the term <i>Polis</i> , depending on the context in which it is used. Political philosophy is critical moral evaluation of political gathering. Articulation of divine is not yet begun. Articulation of virtue is not yet begun.
2	(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Introduction	Attribution of the Modern Age as the era from circa the times of Bacon (AD 1561 – 1621) and Hobbes (AD 1588 – 1679) until circa the middle of the twentieth century. Articulation of metaphysics is not yet begun. Foundational attributions of meaning: Science means the pursuit of true knowledge—knowledge of that which can be no other. Ethics means correct action and just desire in personal and social affairs. Articulation of practical Ethics is not yet begun.
3	(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Introduction	Modern Age as the era emerging from circa the times of Francis Bacon (AD 1561 - 1626) and Thomas Hobbes (AD 1588 - 1679) until circa the middle of the twentieth century. Foundational attribution of meaning: Ethics means correct action and just desire in personal and social affairs. Articulation of practical Ethics is not yet begun.

Again, the Thesis Proposition Statements are:

(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of *Polis* situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of *Polis* is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.

(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

In Part One next following I turn to the work of Chapter 1.

Part One

**Early Transition from Religion to Philosophy, Socratic Turning and
Subsequent Emergence of a Unified Political Philosophy
of Aristotle (BC 384 – 322)**

Chapter 1

Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato's Political Philosophy

INTRODUCTION AND SCOPE

In this chapter I trace development of relationships between Science and Ethics from the end of the Greek Dark Ages, heralded in with the first Olympic games circa BC 776, through the entire Archaic Period from BC 750 to Xerxes' invasion of Greece in BC 480, to Plato's life (BC c. 428 – c. 348) in the Classical Period, which period is taken as the time from the fall, in BC 510, of Hippias, the last tyrant of Greece, to the death of Alexander the Great in BC 323. In order to better articulate an Ethics-of-place theme that emerges as the chapter progresses I also venture beyond the so-called Dark Ages to search for origins of Science, morality and Ethics in natural law preconditions for human settlements.

I draw on insights provided by received authors—for example (Ackrill, 1980, 2001; J. Adam, 1908; Annas, 1981, 1982; Barnes, 1982, 1987; Bloom, 1968a, 1983a; Brisson, 1995a; Burkert, 1968, 1972, 1985; Caird, 1904; Cherniss, 1935, 1945, 1951; F. M. Cornford, 1923, 1932, 1957, 1967; Dodds, 1951; Durkheim, 1915; Fraser, 1925; Freeman, 1948; Gadamer, 1980b; Gomperz, 1901-12; Grube, 1935; Guthrie, 1952, 1962, 1965, 1975a, 1975b; J. E. Harrison, 1905, 1908; James, 1902; C. H. Kahn, 1960; Kirk & Raven, 1957; Linforth, 1941; McGahey, 1994; Naussbaum, 1985, 1992; Oakeshott, 1933, 1975b; Reinach, 1909, 1912; H. J. Rose, 1936; W. D. Ross, 1930, 1961; Rouse, 1940; J. Sandys, 1915; L. Strauss, 1963, 1964, 1966, 1987; Swanson, 1974; Voegelin, 1957; Zuntz, 1971) and others; on translations of some of the works of Plato or imitators of Plato, *Timaeus*, *Cratylus*, *Phaedrus*, *Ion*, *Meno*, *Phaedo*, *Philebus*, *Republic*, *Laws*, *Seventh Letter*, *Alcibiades I and II* (Plato, 1921a, 1925c, 1925e, 1925f, 1925h, 1952c, 1952h, 1952j, 1952l, 1952n, 1952o, 1952p, 1952r, 1952w, 1966c, 1967c, 1967/68a, 1969a; Plato or an imitator of Plato, 1952, 1955, 1966, 2006); on translations of some of the works of Aristotle, or imitators of Aristotle, for example *Metaphysics*, *Physics*, *On Generation and Corruption*, *Nicomachean Ethics*, *De Anima*, *Meteorology*, *On*

Melissus, Xenophanes and Gorgias, acknowledged as spurious, (Aristotle, 1926, 1936a, 1952b, 1952d, 1952e, 1952f, 1952g, 1952i, 1952n, 1984b, 1984c, 1989, 2005; Aristotle or another, 1984b); on translations of Aeschylus—the *Oresteia* and *Prometheus Bound* (1893, 1912, 1926c, 1977), Homer—*Iliad* and *Odyssey* (1898, 1915, 1924, 2008), Virgil—*Aeneid* (1910; 1997), Ovid—*Metamorphoses* (1826, 2008), Nonnos—*Dionysiaca* (1940a, 1940b, 1942), and Sophocles—*Antigone* and *Oedipus the King* (1887a, 1887b, 1891, 1900, 2003a, 2003b); and on the work of received scholars continuing to contribute mainly since 2000, for example (Baltzly, 2009; Bernabé, 2007a, 2007b, 2011, 2012; Bernabé 2013; Bernabé, 2004; Bernabé & Jiménez San Cristóbal, 2008, 2010; Betegh, 2007; Borgeaud, 2004; Bradshaw, 2004; Burkert, 2004; Calame, 1999, 2002; Carru, 2011; Casadio & Johnston, 2009; Cavero, 2009; S. M. Cohen, Curd, & Reeve, 2005; Cohn & Russell, 2012; Corcoran, 2006; Curd, 1996, 2007; Curd & Graham, 2008; de Jáuregui, 2010; Destrée & Herrmann, 2011; Dousa, 2010; R. G. Edmonds, 1999, 2004, 2009, 2010a, 2010b, 2013; Flensted-Jensen, 2000; Freely, 2012; Graf, 2010; Graf & Johnston, 2007/2013; Graham, 2009, 2010; Griffith, 2008, 2009; Hopfe, 1994; Huffman, 2006, 2008; R. Janko, 2001, 2002, 2004, 2005, 2006a, 2006b, 2013; Kingsley, 1996; Kirk, Raven, & Schofield, 2002; McKirahan, 2005, 2011; Morford & Lenardon, 2003; G. Murray, 2004; M. J. Murray & Rea, 2008; Nachtegaele, 2013; Naddaf, 2005; Natali, 2013; Newbold, 2014; Oakeley, 2007; Obbink, 2010; Osek, 2013; Pantel & Zaidman, 2002; R. Parker, 1995; Parker, 1997, 2007, 2011; Petsalis-Diomidis, 2007; Propp, 2009; Riedweg, 2002, 2008; Roller, 1999; Sattler, 2011; Scalera McClintock, 1991; Schuré, 2010; Tarrant, 2000; Tortorelli Ghidini, 2006; Tsantsanoglou, 1997; Y. Z. Tzifopoulos, 2010; Uždavinsys & Finamore, 2004; van Gennepe, 2004; Vlastos, 1991; Waterfield, 2009; M. L. West, 2002) and others. The contributions of the second tranche of researchers consist of both original works and/or ongoing complementary and progressive articulation of those earlier cited first tranche works on which they are partly predicated. A wish to draw more from the contributions of scholars like those cited explains, in part, my decision, through this enquiry, to search out and understand the basic ideas of the great classical writers on which the contributions of the cited writers themselves are also partly predicated.

I have provided two citations for every quotation of a translated classical work and/or for every mention of such a work. In particular for Plato, except for the disputed Sixth and Seventh Letters, a Jowett citation is accompanied by a second one under the imprimatur of either the Loeb Classical Library, or the Perseus Digital Library project, or both. Thus Jowett's elegant Victorian English and delicate smoothing of same sex relationships for example is balanced by more literal approaches. Likewise, cited translations of Aristotle's works under the general editorship of W. D. Ross are paired with citations of those works contained in the Loeb Classical Library and/or Perseus Digital Library. Yet selecting translations under the imprimatur of these libraries does not necessarily resolve issues of translation. For example Bloom (1968b, pp. xiv-xviii), in his preface to his literal translation of *The Republic* takes Cornford to task on the appropriateness of his translation yet Cornford is one of the translators of Aristotle's

Physics in the Loeb Classical Library. Translator's notes sometimes provided in the Perseus Digital Library project, and that project's provision of Greek and English text and links to English-Greek lexicons, have been instructive and edifying.

In general this chapter is an attempt at consolidation wherein, through discussion about a wide and diverse range of issues of the human condition, I establish some of the

foundations on which the remainder of the enquiry and its thesis rest. In particular, I begin to articulate some of the word usage and context of the Thesis Proposition Statements. For the first Thesis Proposition Statement I investigate the meaning behind claims that reason is divine and that virtue is some kind of knowledge. For the second Thesis Proposition Statement I articulate Science understood as theoretical philosophy and Ethics understood as practical philosophy. Various approaches to interpreting Plato are discussed in Appendix I, located as a coda to Chapter 1.

Thesis Proposition Statements

(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of *Polis* situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of *Polis* is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.

(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

In its work of consolidation outlined in the previous paragraph this chapter progresses in three steps. In Step 1 I examine the proposition that three divisions of philosophy were extant at the time of Plato's life and that the emergence of the three divisions is coeval with a general transition from religion to philosophy. The first division, scientific philosophy, is interpreted as emerging from mankind's interest in knowledge about the world for its own sake. The second division, ethical philosophy, is interpreted as emerging from mankind's need to find the best way to live in communities. The third division, critical philosophy, is explained as an outcome of human introspection. I maintain that in its transition from religion, philosophy carried within itself preoccupations with nature or *physis*, with god or *theos*, and with soul or *psyche*, and that morality and soul are themselves extensions of natural law, that same kind of law that Science subsequently sought to understand.

In Step 2 I describe Platonic usage of the terms justice, virtue, god, and happiness in some detail because they are germane to, and intended referential predicates for, a Step 3 discussion of Science, Ethics and *Polis*. Specific meanings of non-English words used elsewhere in the enquiry, except for those constituting long quotations in French, are provided in an index beginning on page xii.

In Step 3, in light of the explained Platonic usage of those terms, and against the background of the transition from religion to philosophy discussed in Step 1, I attempt an explanation of how Science as scientific philosophy, and Ethics as practical philosophy, inform the political philosophy of a Platonic *Polis*. Again the work of consolidation referred to earlier on page 23 occurs within an integrating exposition of the three steps.

THREE DIVISIONS OF PHILOSOPHY INTRODUCED AND CONSECUTIVELY EXPLAINED

I begin Step 1 by drawing on claims by Guthrie (1975a, pp.16 - 21) and Diogenes Laertius (1925b, Prologue, 18; Yonge, 1915, pp. 11 - 12) that three divisions of philosophical enquiry were discernible at the time of Plato's life. These three divisions are described in Table 2.

The speculative philosophy of Table 2 is also known as scientific philosophy because it consists of a curiosity driven interest in the physical world (Burnet, 1908, p. 28). It began to emerge in Ionia in the late seventh and early sixth centuries BC when high

Table 2: Three Divisions of Philosophy Discernible at the Time of Plato’s Life

Speculative or Scientific Philosophy	Practical or Ethical and Political Philosophy	Critical of Psychological Philosophy
Mankind’s attempt to explain the macrocosm, the universe in which they live. It is largely speculative because it is driven by curiosity.	Mankind’s attempt to explain the microcosm, mankind themselves and their nature and place in the macrocosm. It is largely practical because it is driven by a desire to find out how human life and conduct can be improved.	Mankind’s attempt to understand the nature of their own minds and the implications of such understanding as it impacts on speculative and practical philosophy.

Source: Constructed by Ian Eddington from Guthrie, W. C. K. (1975). *The Greek Philosophers from Thales to Aristotle*. (pp. 16 – 21). New York: Harper and Row; Hicks, R. D. (2008). (Ed.). *Lives of Eminent Philosophers*, (Prologue 18); Yonge, C. D. (Ed.). (1915). *The Lives and Opinions of Eminent Philosophers*. (pp. 11 - 12). London: G. Bell and Sons Ltd.

living standards and curiosity partly engendered through trade led the Greek Ionians into attempts to explain the world by reason rather than by magic (Burnet, 1908, pp. 37 - 38; Graham, 2009, pp. 1 - 2; Guthrie, 1975a, pp. 22 - 23; Kirk et al., 2002, p. 7; Sarton, 1993, p. 162).

Ionia, the Greek islands extending to and including the coastal regions of present-day



Source: (Raffaello, 1509). Diogenes the Cynic, cropped by Ian Eddington from Raffaello’s *The School of Athens*. (1509). (fresco). Stanza della Segnatura, Vatican City: Web Gallery of Art. Diogenes the Cynic, about whom Diogenes Laertius wrote, sits alone.

Turkey, then geopolitically abutted the western extremity of the Persian Empire and as a result this early scientific or speculative curiosity-driven enquiry became known as Ionian materialism. Sarton additionally argues that Ionia at the time was essentially a new Crete, in essence not unlike the New England of the Pilgrim Fathers, and that the political environment the Cretan colonists made for themselves, together with the cosmopolitan geography of Western Anatolia, explains an

emergence of curiosity-driven Science as knowledge for its own sake. Lindberg (2008,

p. 12) finds the origins of Greek Science in Mesopotamia and Egypt but also counts the high literacy of Greek society as a factor in the flowering.

The practical philosophy of column 2 of Table 2 has been called Italiote mysticism (F. M. Cornford, 1912/2009, p. vi; Orsucci, 2002, p. 14; Planinc, 2001, p. 99; Yonge, 1915, p. 10) because it is thought to have emerged from Greek colonies in Italy and Sicily as a heritage of mystic cults such as those of Orpheus and Dionysus of the 6th century BC, and later of Pythagoras in the 5th century BC (Bianchi, 1976, pp. 1-7; Casadio & Johnston, 2009, pp. 1 - 5). Italiote philosophy also includes Eleatic philosophy established at then Elea, now Velia, in southern Italy, variously associated with Parmenides (BC c. 510 – c. 450), Zeno (BC. c. 490 – c. 430), Melissus, (born c. BC 500) and Xenophanes (BC c 570 – c.475) and generally with the doctrine of unity of being likely posited by Melissus of Samos (DK 30B8.1-8.10) to admit a unified god among gods who, on the likely say so of Xenophanes of Colophon (DK 21B23-25), creates through thought. Euclid (BC 435 – 365) and others, mainly centered on the Greek town of Megara are said to have synthesised Eleatic and Socratic philosophy (Drozdek, 2007, p. 145; Lomas, 2013, p. 95).

The critical philosophy of Table 2 is discernible in the dialogical Socrates' turning to human nature in his search for answers to questions about the world around him, however as Janko persuasively argues, political and religious tensions may also be implicated, of which more later beginning on page 32. The earlier mention of the dialogical Socrates in this paragraph acknowledges a widely accepted tenet that Socrates left no writing for posterity.

I discuss each of these kinds of philosophy in more detail beginning, in the next paragraph, with speculative philosophy.

This speculative philosophy of curiosity driven knowledge about the real world is not the speculative philosophy Whitehead (1978, pp. 3 - 17) defined in his 1927 Gifford Lectures, which speculative philosophy Siebers (2002, p. 1) found more useful than ever in the first years of our present millennium (ibid., 15 – 18). Whitehead's speculative

philosophy would admit and remodel all of the Table 2 categories under its own

Greek and Phoenician Settlements in the Mediterranean Basin about BC 550



Source: Shepherd, W. R. (1923). Historical Atlas. (p. 12). New York: Henry Holt and Company.

definitions and rigour. Nor is it the pursuit of holistic self-knowledge as Verene (2009, p. xiv) would define speculative philosophy. Rather the speculative philosophy of Table 2 is its own flowering, that kind of human enquiry that may not

have been destroyed in a night had Plato not fallen under the “spell of Socrates” (Nietzsche, 2007, pp. 123- 124).

Schmidt (2001, pp. 150 - 153), drawing on Holderlin’s translations of Sophocles’ *Oedipus and Antigone*, now translated into English (Holderlin, 2001), focuses on Oedipus’ driven curiosity to know and offers him as a symbol of ancient Greece’s entry to the West and a trajectory of Western culture’s unfolding into a condition where incessant curiosity leads mankind to know more than it can bear. The end result for Oedipus is madness, a condition Holderlin himself is said to have experienced (Corngold, 2013, pp. 37 -54), other afflictions being postulated to explain his documented insanity. Holderlin’s translations have, until recently, been considered extreme but he is progressively being brought in from the cold (Pfau, 1988, pp. 1 - 3). *Antigone* was written circa BC 441, and *Oedipus the King* circa BC 431/30 and, as subsequent engagement with Janko’s work on the Derveni Papyrus beginning on page 32 reveals, the last decades of the 5th century BC were so increasingly difficult for the survival of speculative or scientific philosophy as to dampen the curiosity and desire to

know in new ways of quite some many. Subsequent discussion of Janko's work reveals that a developing speculative or scientific philosophy, now beginning to be called

The Athenian Empire at its Height About BC 450



Source: Shepherd, W. R. (1923). *Historical Atlas*. (p. 23). New York: Henry Holt and Company.

predicated on the basis of salvation through a personal soul (J. Adam, 1908, pp. 7 - 8; Barnes, 2002, p. xviii; Guthrie, 1975a, p. 82; Sarton, 1993, pp. 194 - 198).

So called state calendar religion is also referred to as polis religion (Burkert, 1985, pp. 246 -247, 216 - 272; Kindt, 2012; Schmitt Pantel & Bruit Zaidman, 1993, pp. xiv, 3 - 16; Sourvinou-Inwood, 2000a, 2000b)—the polis “anchored, legitimated and mediated all religious activity” (Sourvinou-Inwood, 2000b, p. 15) and there is renewed interest in polis-theory readings of Greek history (Vlassopoulos, 2007, pp. 52 - 63). Hereafter in this enquiry, except in quotations where author usage is respected, the term P(p)olis as opposed to *Polis* will signify an exoteric gathering within the context of the esoteric/exoteric divide employed for methodology purposes as explained on pages xv and 3. The esoteric/exoteric division catches all of the discussion of this paragraph so that in the present discussion the words state religion, polis religion and P(p)olis religion might be used interchangeability. P(p)olis in this sense is literally a town or city or city state as Xenophon for example uses the term (Nielsen, pp. 133 - 140) or historians in the late 5th and early 4th centuries BC (Hansen & Nielsen, 2000, pp. 141 - 150) used it.

Presocratic physics, was likely to have endured a social and religious backlash.

The speculative or scientific philosophy under discussion is said to have begun its emergence at a time when religion, as the worship of the pantheon of Olympian gods, was practised as an accepted part of a State calendar of events, and except perhaps in Orphic cults, was not

Henceforth in this enquiry *Polis* denotes an esoteric gathering and the term polis signifying a physical exoteric town or city is replaced by P(p)olis. For example, Plato's esoteric *Polis qua* city of ideas articulated in *The Republic* IX 592a-b (Plato, 1952r, p.

427; 1969a) might, by the time of *Laws* IV 711e - 712a (Plato, 1952j, p. 680; 1967/68c), be thought of as morphing towards a P(p)olis, Heaven excepted.

**Nutshell Expression of
Esoteric/Exoteric Divide**

Cities of ideas, cities of God are esoteric cities, cities of ports, harbours, legal frameworks and the like are exoteric cities. Rousseau rears children esoterically in his constructed *Émile* (Rousseau, 1918) and exoterically by abandoning them in an orphanage.

Esoteric marks ideal dimensions, exoteric marks physically active and/or material dimensions.

If it be accepted for simplicity's sake that things and/or situations exist, that thoughts following things and/or situations, that words follow thoughts and that actions precede, accompany or follow words, then the esoteric is at the thinking end and the exoteric is at the being *qua* doing or action end. In this enquiry, in search of an esoteric Aristotle say, it is assumed that when Aristotle writes about *nous* as part of the divine in mankind he is sincerely expressing his thoughts, likewise Plato when he writes of a republic of forms.

This renewed scholarly interest in P(p)olis or state religion, together with Derveni Papyrus scholarship, which partly focuses on personal eschatology in cult religion and possible wider socio-religious and socio-political pressures impacting on state religion, provide an opportunity to test the validity of the general statement about state religion made in the opening sentence of the preceding paragraph namely, that speculative or scientific philosophy began its emergence at a time when religion, except in the cults, might be viewed as state calendar worship of a pantheon of gods. This validation occupies pages 29 to 38 after which I

return to discussion of speculative philosophy broken off here.

P(p)olis and Derveni Papyrus Research Insights into State Religion and Cults

To wit: so-called cult religion with its attendant definitional difficulty is generally understood for the purposes of this enquiry as a form of religious praxis distinguished from that of official, or established religion through being perceived as different or deviant, whether in pejorative connotation or otherwise. Such an understanding, like that of duty of care in present times, is nevertheless workable even though it is predicated on circularity and its own moving benchmarks. The cult religions discussed in this chapter and elsewhere are some of those of ancient Greece and Rome which came to an end, and if not to an end then to a possible transformation, with the adaption by Christianity of cult-type initiation and confirmation rituals. I provide examples of such cult religions in the next paragraph, some being relevant to the period under discussion and others not,

and after that focus on Orphism in further articulation and assessment of the P(p)olis religion and personal eschatology claims accepted earlier.

Examples of the kinds of cults under discussion are the so-called Orphic Mysteries dating from 5th to the 4th centuries BC (R. Parker, 1995, pp. 484 - 488) associated with the Zagreus Myth which records the creation of humans from the dust of the Titans destroyed by Zeus in punishment of their killing and eating all but the heart of Dionysus, and with Orpheus themselves, there being three of Orpheus, and Orpheus's journey to Hades and back; the Pythagorean Mysteries, associated with reincarnation and immortality of the soul, dating from the 6th century BC; the Cult of the Mithras, in existence during the 1st to the 4th century AD duration of the Roman Empire, interpreted to be a mystery religion which might also be considered as one of the threats to arriving Christianity (Hopfe, 1994, p. 147), whether it moved from Babylon, in ancient



Notes: Cybele and her youthful Phrygian-capped consort Attis are seated in a chariot pulled by lions and accompanied by a possible ecstatic *thiasos*.

Source Cropped by Ian Eddington from a photo taken by Giovanni Dall'Orto, in 2012 of the silver embossed plate known as *Parabiago Patera* circa AD 363 on display at the Museo Archeologico di Milano (Anonymous, c. AD 363).

Mesopotamia now in Iraq, through Phrygia, now part of Turkey, to Rome via returning Roman soldiers, slaves and freedom seekers, rather than through mainland Greece, (Cumont, 1903b, pp. 10 - 12, 81 - 84), or whether Roman troops carried it eastwards (Hopfe, 1994, p. 156); the cults of the Sibyls, particularly that of Demo, the possible Sibyl of Cumae, Greek-colony prophetess of Apollo's oracle at Cumae and associated with Aeneas' arrival and progeneration of the Romans *Metamorphosis* XIII 624 – 681, XIV 78 – 603, XV 437 – 861 (Ovid, 1826, 2008) and journey to the underworld *Aeneid* VI

(Vergil, 1910; Virgil, 1997), some of the Sibyl's 'writings' storied to have been acquired and held by Romans until burned in the 5th century AD in Rome; the Greek cult-following of Cybele—Cybele being a possible continuation of an 8th century BC Mesopotamian earth-mother goddess depicted in art and subsumed into Greece from

Phrygia during and after the 6th century BC as *Mētēr* or mother and, perhaps through association with Rhea and Demeter (Roller, 1999, pp. 19, 174), subsequently attaining foreign god status (Burkert, 1985, p. 177) in Athens circa BC 500 (Borgeaud, 2004, pp. 11 - 30) and in Rome during the last decade of the 3rd century BC. The *Parabiago Patera* pictured on page 30 is dated at circa AD 363, a time of revival of paganism in Rome. It depicts Cybele and her Phrygian-capped consort drawn by lions and leopards and accompanied by a likely ecstatic *thiasos*. While acknowledging Roman beliefs that their god Mithra was of Phrygian origin, more recent scholarship (Clauss, 2001, pp. 1,7) views the Roman mystery Cult of Mithra as a modern construction and distinguishes between it and the god Mitra or Mithra of Zoroastrianism, consolidating as a monotheistic religion circa the late sixth century BC.

Notwithstanding some of the cults mentioned in the previous paragraph I mainly engage with recent studies of Orphism for further insights into personal eschatology in the presence of state religion and for possible caveats such insights may contain in respect of the validity of the received state religion theme under discussion, and more generally for the from-religion-to-philosophy claim being addressed in this chapter. For example, researchers have focussed on elements of personal or cult religion and practice which ‘transcend’ the P(p)olis (Betegh, 2007, pp. 74 - 91; Bowden, 2010, passim; Graf & Johnston, 2007/2013, passim; Henrichs, 1984, pp. 255 - 268; Hernández, 2005, pp. 85 - 105; Instone, 2009, pp. 42 - 55, 125 - 138, 206 - 224; Kearns, 2010, pp. 37 - 141; M. Meyer, 1999, pp. 61 - 101).

The growing literature on the Derveni Papyrus, together with that flowing from research about Orphic Gold Tablets, and the Strasbourg Papyrus has, through some of these authors and others subsequently discussed, also allowed new insights into the nature of personal eschatology in respect of wider socio-political, socio-religious and Science-religion developments in fourth century BC Greece. For example, Furley (1996, pp. 13 - 40) discusses the turmoil and retributions surrounding the destruction, in BC 415, of the herms and controversy associated with profanation of the Eleusinian Mysteries from

both political and religious perspectives. He provides a plausible reason for the Derveni author's cited reconciliation of religion and Science through reference to allegorisation, and also adduces a fusion of vectors—unpopularity of the Sicilian expedition, political

Around the Derveni Krater
Anticlockwise



and/or theatrical strategy to diminish Alcibiades' opposition to the priests, plague, Periclean war strategy and anti-democracy activism—to posit that the “whole Olympian system [of the Athenians and their gods] was damaged” (ibid., p. 22, my square brackets). Parker (1997, pp. 122 - 188) also attests to the socio-political and socio-religious complexities of this time. Further discussion of 5th century BC disruptions to religion continues in the next paragraph and detected discord and differences underlying these disruptions serve as further qualifications to the generality of the state-calendar religion statement made on page 28.

For example Janko provides valuable insights into a possible conflict between Science and so-called salvation religion circa BC 415. Notwithstanding Janko's then belief that “the Derveni Papyrus has left the scholarly community almost completely baffled” (2001, p. 15), his exegesis of that papyrus, and reasoned attribution of its authorship to Diagoras of Melos (R. Janko, 2001, pp. 2, 4), likely born circa BC 469/8 and likely alive in Athens in BC 423, provide insights into the nature and survival fortunes of a cult, “probably that of Dionysus, i.e. of the Orphic/Bacchic variety” (R. Janko, 1997, p. 93). His elimination (1997) of other suggested authors—Epigenes (Kapsomenos, 1964-65, pp. 3 - 12), Euthyphro (C. H. Kahn, 1997, pp. 55-63), Stesimbrotus of Thasos (Burkert, pp. 1 - 5), Prodicus of Ceos (Laks & Most, 1997, p. 129), Anaximander of Miletus, Glaucón, Metrodorus of Lampsacus, and Diogenes of Apollonia (R. Janko, 1997, pp. 75 - 87), together with his differentiation between Diogenes of Apollonia and Diagoras of Melos—also provided

valuable insights into a likely battle royal between Science and cult religion that encompassed the economics and politics of state or P(p)olis religion—a Greek Reformation and Counter Reformation he calls it—in which Science came off second best.

Should the Derveni Papyrus constitute part of a book, or even the book, in which Diagoras revealed the Eleusinian mysteries and for which he was exiled—Diagoras once

Around the Derveni Crater
Anticlockwise (Continued)



silenced and now free—then, claims Janko, there is much thinking to be done. For example, has not Plato, in branding Diagoras an atheist in order to emphasise his own piety and camouflage introduction of gods in which he himself believed, “achieved the most successful cover-up in intellectual and religious history[?]” (ibid., p. 93, my square brackets); and might not Sophocles, through a re-appraisal of his *Antigone* (1891, 1900, 2003b) and *Oedipus the King* (1887b, 2003a), in the light of the Derveni revelations, be exposed as “a die-hard religious conservative[?]” (R. Janko, 1997, p. 94, my square brackets). The question of a cover-up by Plato is a hard question for philosophy, but one not directly pursued in detail in this enquiry. Nevertheless, it begs subsidiary questions of whether the dialogical Socrates’ turning was, in part, and in Janko’s tone, a safe cop-out for Plato as clever word-spinner to his Socrates’ rejection of Anaxagoras’s book—and possibly other writer’s books as well—and consequently whether Aristotle’s variously discussed and supposed offend-or-sin-twice-against-philosophy rationalisation or jest explanation for quitting Athens (Aelianus, 1670, Bk. 3, Ch. 36; Bearzot, 2011, pp.

44 - 45; During, 1957, p. 402; Natali, 2013, p. 63; Stillingfleet, 1702, p. 54) is predicated on Platonic gloss and dissembling insinuation about the death of an actual Socrates

whose game, and suspected incomplete disavowal of Anaxogorean-Diogenean-

Around the Derveni Crater
Anticlockwise (Continued)



Diagorean thought was up—whether for disparate reasons and whether for better or worse, the beauty and importance of Plato’s Socrates construct notwithstanding.

Again, philosophy, on its very own terms must permit the asking of such perhaps iconoclastic questions but I do not pursue them further. Janko does not go unchallenged on issues of interpretation and papyrological technique (R. Janko, 2006a, 2006b; Kouremenos, Parássoglou, & Tsantsanoglou, 2006a, 2006b).

Bernabé (2007a, pp. 77 - 84; 2012, no pagination) also demonstrates the complex nature of new thought aroused by the Derveni Papyrus. He finds the author of the papyrus explaining that the *daimones* are souls and that the *magoi* and the *mystai* carry out their preliminary ritual sacrifices to appease dead souls in the same way (Bernabé, 2012, 9.7), and states that a *daimones qua* souls thread—countless souls which must be propitiated—can be traced back to Hesiod’s mention of a race of golden mortals (ibid., 9.5) who, after becoming *daimones*, watch over humans. Hesiod’s mention begins at 110 in *Works and Days* (Hesiod, 1914b, p. 11; 2004, p. 68). Bernabé also adduces attestations to Thales (DK 11A23) and Heraclitus (DK 22A1) to support his contention and claims that the author of the papyrus shares a moralising tendency with Plato but whereas the author of the papyrus holds that punishments in the afterlife might be atoned by ritual performance, Plato holds that wrongdoing, rather than lack of ritual performance, attracts the punishments of Hades, and replaces such ritual performance with philosophy (Bernabé, 2012, 10.2). As an idea, *τελετή*, ritual atonement as ceremony or rite, is an offence against justice.

Yet the author of the Derveni Papyrus, while not disassociating himself from rituals performed by the *magoi* nevertheless distances himself from them and projects his

Around the Derveni Crater
Anticlockwise (Continued)



Notes: *The Derveni Krater* (circa BC 330 – 370) cropped by Ian Eddington from photographs taken by M. Greenhalgh. The relief is a hymn to Dionysus (Orpheus) celebrating his power over nature and features, *inter alia*, his marriage to Ariadne. The one-sandalled warrior is associated with Pentheus rendered in an act of frenzy following his banning of Dionysian rites, or the Argonaut Jason.

Source (Greenhalgh, 2006). (photographer). *Photographie du Cratère de Derveni, Utilisé comme Urne Funéraire dans le Tombeau de Derveni, et Ayant Auparavant Servi pour Mélanger du Vin et de l'Eau*; Barr-Sharrar, B. (2012). *The Eschatological Iconography of the Derveni Krater*. In *Bronzes Grecs et Romains Recherches Récentes, Hommage à Claude Rolley*: INHA (Actes de colloques). (Madge, 2014) (photographer). *The Derveni Krater, Late 4th Century B.C., Maenads with a Silenus, Derveni Krater, Side B*. Thessaloniki: Archaeological Museum, digital images being available at Flickr.com.

authority and praxis superior to theirs. He is no magician claims Edmonds (2008, p. 35), this author of the *Derveni Papyrus* (Tsantsanoglou, 1997), and disqualifies himself from membership and heritage of that ongoing class of *magoi* negatively alluded to over time as charlatan magicians by Sophocles in *Oedipus Tyrannus* at 380 – 405 (Sophocles, 1887a, 1900), or spoken about in the *Sacred Disease* (Hippocratic Writings, 1952a, p. 154; 1983b, p. 237), or depicted as barbarian and incestuous philosophers of the *Magikos* (Rives, 2004, p. 36), or like Zoroaster and his early followers (ibid., p. 42), or a job lot of others put down by Aristotle at *Metaphysics* 14.4 1091a25 -1092a5 (Aristotle, 1952d, p. 624; 1989) who associates them with an earlier age of philosophical understanding, that of the old poets, or later called by Philo “charlatan mendicants and parasites” in the *Special Laws III* (Philo, pp. 100 - 101), and so on to Edmonds’ present mention of “itinerant charlatans” (R. E. Edmonds, 2012, p. 16). Heraclitus might well have the whole Orphic *thiasos* flogged along with Homer— “night-ramblers, magicians, Bacchants, Maenads, Mystics: the rites accepted by mankind in the Mysteries are an unholy performance” (DK 22B14). Each of the commentators named above in this paragraph wrote, in turn, in service to their own projects and there would be unending caveat upon caveat were a full account to be

given. Sophocles for instance had his audience to please, Aristotle his mother of all explanation to provide, Philo his harmonisation of Greek and Jewish philosophy to

defend and so on. More recently, since Cherniss' exegesis of Aristotle's criticism of the Presocratic philosophers (Cherniss, 1935) there has been renewed awareness that Aristotle and Theophrastus "turn out to be far from infallible guides to the interpretation of the Presocratics" (Kingsley, 1996, p. 3) and even of "shameless" introduction of his own ideas by Aristotle in his exegesis of Empedocles (Guthrie, 1965, p. 160). As this chapter reveals in its remaining pages, lively ongoing scholarship addresses an abundance of questions about Presocratic belief and practice whether near to the age of Presocratic magic or not.

Like Laks and Most (1997, p. 5), Janko (2001, p. 2) proposes that the author of the Derveni Papyrus is an Orphic cult initiate, naming him a Sophist like Critias (BC 460 – 403) or Prodicus (BC 465 – 395), and a likely contemporary of Socrates (ibid., p. 7), and that the Papyrus was written "to reconcile traditional religious belief and practice with the latest scientific progress" (ibid., p. 5), a view not necessarily incompatible with Most's claim about cult-religion that "the Derveni author does not explain Presocratic physics in terms of Orpheus, but Orpheus in terms of Presocratic physics" (1997, p. 122). The papyrus, says Janko, is the work of an Orphic, rather than a seer like Diogenes of Apollonia as Tsantsanogluo suggests (2001, p. 6) and one says Most "who cannot ignore Presocratic thought" (1997, p. 122)—one aware of a transition from *mythos* to *logos* (ibid., p. 123). Janko (2001, pp. 4 - 5), after Guthrie (1952, pp. 62, 161 - 163; 1962, p. 476), acknowledges both Plato's suggestion that the founders of the mysteries might be allegorists, that is, the religious teachers might speak in riddles or speak with hidden meaning, and Plato's hint of the existence of Orphic allegorical philology at *Gorgias* 493a-d, particularly 493d (Plato, 1952g, p. 276; 1967b). Janko further claims that the Derveni author offers, in Column IV, an opinion similar to that expressed in *Phaedo* 69c, (Plato, 1952n, p. 226; 1966c) that is, that the real meanings of the Orphic writings could not be found in literal interpretation.

Janko explains the nature of the Derveni Papyrus by recalling a hearsay that it is as if someone took the "Book of Mormon, quoted bits from it, and added that it's actually the theories of Albert Einstein encoded in the Book of Mormon" (R. Janko, 2013, p. 7).

Other scholars of the Derveni Papyrus also glean from it a possibility of an emerging single god and discern in such a possibility religious conflict *per se* between state calendar religion and mystery-cult religion. For example, beginning with Burkert's *Orpheus and the Presocratics* (1968), a number of scholars detect the idea of a single god creating the world out of chaos (Betegh, 2007, p. 222; Burkert, 2004, p. 63; G. W. Most, 1997, p. 118), which idea—air is mind and god according to the author of the Derveni Papyrus, and air, god, and Zeus are the same as *nous* according to Anaxagoras' disciple Diogenes—may help explain in part animosity and discordant opposition by priests whose living and status depended on an existing plurality of gods. But then again, do the four reside in the unity or does the unity divide into four allowing priests ownership whichever way it may be interpreted.

Whereas the intention of the author of the Derveni Papyrus may well have been to dampen the fear of atheism by reconciling religion and Science, and whereas the writing out of the intention may well, as Janko suggests, have resulted in unfortunate outcomes for the followers of an Anaxagorean line of Science, these occurrences may well have been coincident with a more basic and general discontent with the politics of Athens outlined earlier on page 31, which discontent may have found its outlet in a malaise between religion and politics.

Sarton states that the Greeks were disposed to poetic myth rather than to theology, that they had no sacred writings or dogmas, that they were intensely religious and given to superstitions of every kind, that yet having no theology of their own they nevertheless became the founders of theology, and that they provided “the logical instruments that were needed for the development of the three dogmatic religions of the West: Judaism, Christianity and Islam” (Sarton, 1993, p. 198).

In summary, notwithstanding both a possible hairline fracturing of P(p)olis religion and a possible emergence of a single god as discussed above, there were, during Plato's time, gods a plenty and important ones too: Zeus, the king of the gods, Poseidon his brother, and others who ruled their own domains, hell, the sun and so on and, although new

insights into the nature and socio-political contexts of P(p)olis religion and emerging personal eschatology enrich understanding, the generalisation on page 28 about a state-practice pantheon remains workable. In particular, no one god ruled the earth which was the domain of humans.

Positions taken by Guthrie and Sarton on *P(p)olis* religion as a viable description of religion in in the last half of fifth century BC Greece, cited earlier on page 28, remain viable touchstones for still further qualifications about both the nature of P(p)olis religion and the journey-from-religion-to-philosophy contention under general discussion in this chapter. I return to these themes again in discussion of so-called Orphic gold tablets beginning on page 75 after continuing, in the next paragraph, the discussion on speculative philosophy broken off on page 29.

Resumption of Discussion of Speculative or Scientific Philosophy

Three thinkers associated with the emergence of the scientific or speculative philosophy

<p>Speculative or Scientific Philosophy Mankind's attempt to explain the macrocosm, the universe in which they live: it is largely speculative because it is driven by curiosity.</p>
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of column 1, Table 2 on page 25 are highlighted in Table 3 on page 39 and they provide examples of the earliest known Western-tradition scientific answers to the question *what is the world made of*—a question that called

forth speculative or scientific philosophy. Because these three Ionians are traditionally associated with the then city of Miletus they are known as thinkers of the Milesian School. Thales appears to have left no writings (Graham, 2010, p. 17) but Freeman (1948, p. 18) provides evidence of two relevant fragments—Thales (DK 11B1-2). Informative doxographic information and commentary about Thales is available (Barnes, 2002, pp. 9 - 17; Fairbanks, 1898, pp. 1 - 7; Graham, 2009, pp. 17 - 44; Kirk & Raven, 1957, pp. 74 - 98; Kirk et al., 2002, pp. 76 - 99; Waterfield, 2009, pp. 3 - 21). Anaximander, following his master Thales, became in turn, master and associate of Anaximenes (Barnes, 2001, pp. 29, 33; Fairbanks, 1898, p. 17; Kirk et al., 2002, p. 95).

Anaximander's brief fragments, (DK 12B1-5) are available in Freeman (1948, pp. 19 - 20) where, for Anaximenes, fragments (DK 13B1-3) are also available (1948, p. 19).

Table 3: Ionian Science Answers to a Question—What is the World Made of?

Thales ^(a) (BC 624-547)	Anaximander ^(a) (BC 611 - 565)	Anaximenes ^(a) (Before BC 494)
Water or Moisture ⁽¹⁾⁽⁵⁾	An undifferentiated mass of enormous extent not bounded externally or internally, that is, in it, separate internal existences of hot, cold, wet or dry could not be detected and, after Xenophanes, called the apeiron ⁽²⁾⁽⁵⁾ ; from this apeiron there emerged a separation of internal substance into the cold and wet mass of earth, and the hot and dry moon, stars and sun. In time the hot and dry brought forward the earth from the wet and cold and life emerged from the slime and mud. Mankind in turn evolved from a scaly fish. The earth is at the middle of the cosmos and falls nowhere because it is so placed. Underlying Anaximander's explanation is the presence of the fossil record and his observation that mankind must have come from another animal because, due to its observed long period of dependence on others after birth, no first of the species could ever have arrived independently readymade. Anaximander's natural explanation of the existence of the world was one step removed from Hesiod's explanation of its creation through the split in a sexually unified heaven and earth by a third world spirit.	Air including mist and fog ⁽³⁾⁽⁵⁾ : the small part of air within the living animal is its soul or form which is part of the Universe which is alive and which is a god. Anaximenes' explanation of first cause of the universe is god but it must be remembered that it is a Greek god in the sense of a living Gaia. It is a pagan god subject to the fortunes of destiny, not a religious Christian God, and matter and spirit ⁽⁴⁾ are combined in the one. According to Guthrie Science and philosophy had not yet split, there being no metaphysic in the sense that it is now known in Aristotelian terms.
<p>Notes: (a) Generally received material monism summary views are presented accompanied with noted caveats sufficient to signal alterity and contestation of opinion. (1) Waterfield (2009, p. 3) claims that Thales may as well have been a mythographer as a scientist, making no more than a claim that the world emerged from a watery swamp. (2) The meaning of apeiron is not clear, Anaximander may have been claiming that the apeiron was boundless water or boundless air, that is, something spatially infinite but not qualitatively infinite whatever the distinction might mean at the end of the day (ibid., p. 5). Yet the same commentator allows Anaximander possibly establishing an idea of natural law (DKA129) on this indefinite construct (ibid., p. 6). (3) Anaximenes, on Waterfield's reading of DK13A5, may have limited the number of substances air turns into (2009, p. 9). (4) Guthrie, 1975a, p. 31. (5) Material Monism, which informs the content of this table, parts of Table 4, and their attendant texts, is a twenty three hundred year old consensus predicated on a tenet that identification of sources for a so-called monad is possible. Yet it is a consensus contested on many fronts (Graham, 2009, pp. 48 – 66, 85 - 112).</p> <p>Source: Constructed by Ian Eddington from Burnet, J. (1908). <i>Early Greek Philosophy</i>. pp. (1 - 84). London, Adam and Charles Black; Guthrie, W. K. C. (1975). <i>The Greek Philosophers from Thales to Aristotle</i>. (pp. 26 - 44). New York: Harper and Row; Fairbanks, A. (1898). <i>The First Philosophers of Greece</i>. (pp. 1 - 27). New York: Charles Scribner's Sons; Aristotle. (1952). <i>Metaphysics</i> (983b 20 – 30, pp. 501 – 02). Chicago: William Benton; Classen, C. (1977). <i>Anaximander and Anaximenes: The Earliest Greek Theories of Change</i>. (pp. 89 – 102). Phronesis, 22, 89 – 102; Sarton, G. (1993). <i>Ancient Science through the Golden Age of Greece</i>. (pp. 160 – 198). New York: Dover Publications. Waterfield, R. (2009). <i>First Philosophers: The Presocratics and Sophists</i>. (pp. 3 – 21). Oxford: Oxford University Press. Graham, D. W. (2006) <i>Explaining the Cosmos: The Ionian Tradition of Scientific Philosophy</i>. (pp. 1 – 82). Princeton: Princeton University Press. Relevant Diels/Kranz content cited by these authors includes DK11A12-15; DK12A1, 6, 9, 10, 11, 15-16, 21, 23, 26, 27, 30; DK13A5, 6, 7, 10, 14, 15, 17, 20, 21; DK13B1, 2.</p>		

Other works containing various selected fragments and doxographic evidence and commentary are available for Anaximander and Anaximenes (Barnes, 1982, pp. 18 - 23, 24 - 27; 2002; Fairbanks, 1898, pp. 8 16, 17 - 22; Graham, 2010, pp. 45 - 71, 72 - 94; Kirk & Raven, 1957, pp. 99 - 142, 143 - 162; Kirk et al., 2002, pp. 100 - 142, 143 - 162; Waterfield, 2009, pp. 3 - 21).

Anaximander's fragments reveal something of the logic which may have prompted that vital question. For example, Anaximander likely urges that the world was thought of as

being in constant change yet continuing to exist (DK 12B1), and this observation

Behind the Text: Ongoing Scholarship About Presocratic Philosophers and Presocratic Fragments

Taken together, some of the works on Presocratic philosophy cited in the accompanying text provide ongoing insights and updates since the time of the still valuable and respected scholarship of Burnett (1908) Freeman (1948) and Kirk and Raven (1957) even though the more recent authors take different approaches to doxography, typography and concordance management of fragments. For example, Barnes's *Early Greek Philosophy* (1987 revised 2001) contains translations of some Presocratics, but no Sophists. He connects translations by commentary and there are indices, and maps. His typology uses italics for fragments and Roman type for contextual comment and he mainly focuses on a selection of B fragments. His book contains a subject index, an index to quotations, an index to Diels-Kranz B fragments and an introduction. Barnes also comments on the Strasbourg Papyrus segment of Empedocles' *On Nature* and in his book *The Presocratic Philosophers* written in the manner of Anglo-American analytic philosophy, he focuses on the rational rather than the irrational dimension (Barnes, 1982, p. xii), and includes passages, persons, and topics indices, and a Barnes/Diels-Kranz concordance. In it, Barnes names the 10th Walter Kranz edition of Diels (1960) as the standard reference work and in the same paragraph accepts Freeman as an "Englished" version of the B fragments (Barnes, 1982, p. 525). An 11th Walter Kranz edition of Diels was published in German in 1964 and according to Knobloch (2010, p. 54) the 6th Walter Kranz edition of Diels published in 1966 reprints the fragments of a 12th edition of Diels. I could find little specific guidance on the nature of differences across the various DK editions there being expressed general agreement that changes since the 6th edition of Diels-Kranz are of minor significance. University course description increasingly accept the 6th or later editions of Diels-Kranz. The main difference between the 5th and 6th editions of Diels-Kranz concerns numbering rather than translation and in this light, and for ease of access, I use Freeman's English translations for B fragment citation purposes.

Waterfield's *The First Philosophers: The Presocratics and the Sophists* (2009) contains translations of B fragments and selected A texts, addresses the Strasbourg Papyrus on page 133 and, in keeping with its title, includes translations of some of the Sophists. The introductory content provides insights into the loss of *mythos* to *logos* in Presocratic times. Like Barnes (2001), Waterfield (2009) provides an extensive introduction, commentary and bibliography. There is also a concordance of his translated fragments with those of Diels-Kranz (1952).

McKirahan (1994 revised 2010) provides commentary linked to translations and includes some Sophists. Greek text is not provided and contentions about translation and interpretation are confined to footnotes. Typology and layout differ amongst chapters. The 2010 revision contains a new chapter on Philolaus, additional material throughout, and an appendix offering translations of the Derveni Papyrus and three Hippocratic writings. Curd (1996), with McKirahan as translator, includes parts of an earlier book (S. M. Cohen et al., 2005). Each philosopher is given a brief introduction, and some of the Sophists, namely, Protagoras, Gorgias, Antiphon, and Critias, are included. Schofield's 2002 reprint (2002) of his 1983 second edition of Kirk and Raven (1957), carries new sections on Alcman and the Derveni Papyrus, contains Greek text and translation, and is recognised for the quality of its philology and hermeneutics. The Sophists are not included.

(Continued on page 41)

occasioned opinion about the nature of that particular material which would accommodate such a conundrum—that permanent material, subsequently referred to as the monad, which could form the successive beings of the observed cycles of life (DK 12B2-3).

The first stuff of the world, what the world was made of, the nature of nature, the *physis* or *phusis*, appears in first scientific speculation, to have been for Thales, on Aristotle's say so, either water including moisture *Metaphysics* I, 983b 20 - 30 (Aristotle, 1952f, pp. 501 - 502; 1989)—a not necessarily reliable summary of Thales' cosmology according to Kirk and Raven (Kirk & Raven, 1957, p. 91)—or, for Anaximander, the everlasting, ageless, immortal and indestructible (DK 12B2-3) non-limited (DK 12B1); or, for

Anaximenes, air, including mist and fog, understood as the breath of the living universe (DK 13B1, DK 13B3). Aristotle attributes various first stuffs thus: air to Anaximenes (BC 585 – 528) and Diogenes (c. BC 460), fire to Hippasus of Metapontum (born BC

500), and Heraclitus of Ephesus (BC 535 – 475), the four elements to Empedocles (BC 495 – 430), and principles infinite in number to Anaxagoras of Clazomenae (BC 510 – 428) *Metaphysics* I, 984a 5 – 15 (Aristotle, 1952d, p. 502; 1989). Tables 3 and 4 of this thesis should be taken to support a received view that, in their speculations about the

Behind the Text: Ongoing Scholarship About Presocratic Philosophers and Presocratic Fragments (continued)

Graham (2010, pp. 191 - 192), following Janko (2002), cites the Derveni Papyrus to put forward that Heraclitus's fragments DK B3 (F56a of the Derveni Papyrus), and DK B94 (56b of the Derveni Papyrus) go together and tentatively agrees with Lebedev (1985) that these fragments and Derveni Fragment F58 constitute a single statement. Graham generally though focuses on philosophy above philology in his commentaries. He states that Kirk and Raven's book, *The Presocratic Philosophers* (1957), taken to include the 1983 revision of it by Schofield, has been the standard advanced textbook" (ibid., p. 12), acknowledges the relevance of past scholarship by Guthrie and Cornford in leading the Cambridge scholars who tended to "downplay the importance of philosophy in their research" (ibid.), and names Jonathan Barnes (1982) one who has presented a "challenging study of the Presocratic arguments examined in the light of contemporary philosophic methods" (Graham, 2010, p. 15). Barnes himself names his method as one which focuses on rationality content in Presocratic writings over the irrational, historical, and literary style and form dimensions (Barnes, 1982, pp. ix - xi) in which he employs formal and structured analysis in his commentaries.

Part 1 of Graham's work contains translations of the standard DK B fragments and some testimonies relating to fourteen "cosmologists and ontologists" (Graham, 2010, p. 15) from Thales to Democritus, (ibid., pp. 17 – 630). Part 2 contains fragments and some testimonies for the Sophists namely Protagoras, Gorgias, Antiphon and Porticos (ibid., pp. 687 – 841), translated text of, and commentary on, the Anonymous Iamblichii (ibid., 863 - 876) and the *Dossoi Logoi* (ibid., pp. 877 – 904), and an appendix addressing Pythagoras (ibid., pp. 905 – 933). Graham reasons the Anonymous Iamblichii to be a Sophist whose focus on skills virtues in education differs from the Platonic-Socratic ideal for the want of a substantial theoretical dimension (ibid., p. 863) and pronounces the *Dossoi Logoi* a sophistic treatise about teaching method and technique, but one not extending to philosophical and logical issues germane to the topics surveyed (ibid., p. 877). McKirahan (2011, pp. 405 - 426) discusses the Anonymous Iamblichii in the context of the *nomos-phusis* debate. Translations of the Anonymous *Iamblichii* and *Dossoi Logoi* respectively by Reesor (2001, pp. 271 - 278) and Sprague (2001, pp. 279 - 282) reveal rich text content which perhaps confirms a frugality in Graham's general description of those so-named works.

nature of nature, Presocratic philosophers, although not necessarily unified in thought about monism per se, or sufficient in fragmentary remnants, proposed a number of candidates for monad, and that a thread of monism links some of the substances they proposed. The Tables 3 and 4 concordances of Presocratic philosophers with their likely preferred monads is tentative and the presence of references and notes within the tables signals this dimension of their validity.

Unambiguous matching of monad by person remains troublesome. For example, in his part of the world, Plato, at *Sophist* 242d – 242e has the Stranger naming the Eleatics, not the

Ionians or Sicilians as a group, claiming that "all things are many in name, but in nature one" *Sophist* (Plato, 1921b, 242d-e; 1952s, p. 565) but then again Plato, more than Xenophanes before him, is under suspicion of less than open disclosure of motive for his put-downs of earlier beliefs supposedly held by others, and of replacing or modifying old myths for new—some of which so-called new myths might be his own (Detienne, 1986, p. 867; Doniger O'Flaherty, 1995, pp. 25 - 33; Eliade, 1964, pp. 1, 111 - 113, 147 -

157; R. Janko, 1997, p. 93). Barnes, in writing of Thales and Anaximander, states that “we may hazard it that nothing was clear either in the minds or the writings of those men” (Barnes, 1982, p. 33) and Graham (2009, pp. 48 - 66) argues that “the interpretation of Material Monism (MM) as applied to the early Ionians is historically inappropriate, philosophically incoherent, and dialectically irrelevant’ (ibid., pp. 52 – 53).

Of the ideas of these three thinkers from Miletus contained in Table 3, Anaximander’s likely concept of form is important for present enquiry purposes. Anaximander explained the changeability of the natural world through the concept of form, those various structures, things or beings themselves, into which the unchanging matter always successively arranged itself. That is, the unchanging non-limited or “original material of existing things” (DK 12B1), whatever it was, always took the various forms revealed in the physical objects of nature.

A scientific tradition in philosophy associated with Miletus continued, and Table 4 on page 46 depicts aspects of a rich flow of thought from Heraclitus (BC 535-475) to Democritus (BC 460). Xenophon’s description in *Memorabilia* 1. 1. 9 - 16 (Xenophon, 1845, pp. 520 - 521; 1923.1.9-16; 2009, no pagination) of a Socrates unable to understand Presocratic physics, or in corollary of Janko, perhaps unwilling to understand or be openly and fully associated with it, attests to the richness of Presocratic physics, and for that matter, to the precarious position of one dialogically depicted as one in disfavour with powerful and possibly vindictive establishments. Table 3 and Table 4, conjectured from quotations of, and commentaries on, Presocratic thinkers, insinuate, subject to the caveats earlier discussed, that a thread of monism may link attempts to explain the essential stuff, the *physis* of the world. As discussed, for Thales, the monad appears likely to have been water, for Anaximander likely the infinite, the boundless, the unlimited (DK 12B1-3) and for Anaximenes, likely air (DK 13B2-3). After Xenophanes, for whom the so-called monad is likely an interplay of earth and water (DK 21B27, B29, B33) it became known as *apeiron* (Popper, 1998, p. 39). For Heraclitus the monad is likely fire (DK 22B30), for Parmenides likely being a remote and unchanging something

attainable only by mind (DK 28B4-8), and for Leucippus (DK 68B7, B9) and Democritus, (DK 68B9) atoms, as Aristotle also explains *On Generation and Corruption* 325a–325b15 (Aristotle, 1952i, pp. 423 - 424; 2005). Again, such summaries seldom come without caveats. For example Graham suggests that a received view that the Ionians were monists upset by Parmenides, a view he says both Barnes and Schofield support, is under challenge (Graham, 2009, p. 22) and prefers in its place ongoing revision of Stokes's revival (Stokes, 1962, 1963, 1965, 1971, 1976) of Cherniss' exposition of Aristotle's historiography of the Presocratic personages (Cherniss, 1935, 1944, 1951). Cherniss offers a view that, rather than attempting to provide a historical rendering of earlier philosophy, Aristotle sets up artificial debates in which the theories he attributes to earlier writers are assuaged to inevitably lead to his own conclusions (Cherniss, 1935, pp. 349 – 350, 356 - 357) an inkling of which practice Burnet may also have had earlier (Burnet, 1920, p. 56). Both Strauss and Voegelin rule out Popper's competence in interpreting Plato in general (Emberley & Cooper, pp. 66 - 69) let alone for the case of the *apeiron*. Janko is comfortable with Ionian monads (R. Janko, 2013, p. 24) and a possible early flowering, circa BC 430, of a physical-spiritual-three-in-one-god pantheon—air and mind and Zeus are the same (ibid., p. 25).

No equally conjectural underlying uniformity of cosmogony appears to have informed the various monad types identified in the previous paragraph, cosmogony being understood as enquiry into how the cosmos came into existence. Neither, it appears, is the identified stream of monads necessarily encompassed by uniformity of cosmology, cosmology being understood as enquiry into how the cosmos is structured. Nevertheless the conjectural cosmology and cosmogony of Table 4 gives an indication of a rich flowering of thought during the period. Literary and scholarly reminders of the temporal nearness of the period to the age of magic, recalling as they do depictions of magicians and quacks, might helpfully complement interpretation of Table 4's content (Barnes, 1982, p. 2; E. Grant, 2007, p. 1; R. Janko, 2004, p. 2; Kingsley, 1996, pp. 217 - 371; G. E. R. Lloyd, 1966, pp. 178 - 181; Tambiah, 2002, pp. 8 - 11; Thorndike, 1923b, pp. 20 - 32). Nevertheless the Presocratic philosophers were dealing with big and serious

questions and it is not difficult on the basis of empathy and introspection to find their deliberations insightful, logical and intellectually pathbreaking.

In general, leading Presocratic scientific thinkers appear to have presented a view that



Source: (Raffaello, 1509). (Artist). (fresco). Vatican City, Stanza della Segnatura: Web Gallery of Art. Detail of Heraclitus cropped by Ian Eddington. Heraclitus, the obscure philosopher, who, like Diogenes the Cynic in the picture on page 25, is captured alone by Raffaello, who used Michelangelo as his model.

material reality—the *physis*, whatever it was, was something other than changing visible form, and it was somewhere else again. Yet the *physis* might sometimes reveal its presence through noetic touch. For example, mankind as part of the universe and in varying degrees of harmony with it, consists, according to Empedocles, of elements emanating from combinations of hot, cold, wet and dry so that *physis*, as “the (completed) realisation of a becoming ... that is to say, the nature [of a thing] as it is realised with all its properties” (Naddaf, 2005, p. 12, my square brackets) reveals itself, transmits its touch, or in the case of humans is sensed, through *dunameis* (ibid., p.28) its capacity to act upon and be acted upon. Paleologou (2003, pp.

118 - 120) concludes that Plato did not develop a full model of *dunameis* but rather allowed his Socrates an older usage of the word in which *dunameis* are immaterial entities that merely signify the capacity to change or cause change. Otherwise *physis* was indiscernible in the ever changing sensible existing natural beings with which humans worked on a daily basis. For Parmenides, the ‘true account’, the real nature of the world, the *physis*, was remote and could only be reached by mind (DK 28B3-4). Perhaps Parmenides unwittingly, whether he upset the Ionians or not, may have provided an earlier and different but-before-its-times-functionally-equivalent version of a kind of so-called carbon link pathway idea, one not simply confined to the mystery of difference between animate and inanimate, but also between physical appearance and spiritual mystery, ephemerality and permanence, and Science and religion—a speculation not pursued further in this enquiry.

In spite of an early enigma in atomism,—“It is a curious fact that the Atomists, who are commonly regarded as the great materialists of antiquity, were actually the first to say

distinctly that a thing might be real without being a body” (Burnet, 1908, p. 389)—the remote *physis* was also the substance of the soul and consisted of material atoms (Barnes, 1982, p. 362; F. M. Cornford, 1957, pp. 157 - 158, 129 - 130). A kind of scientific materialism had arrived with a hard punch.

The emergence of scientific philosophy, that is, the Presocratic scientific discovery of



Source: (Raffaello, 1509). (artist). Vatican City, Stanza della Segnatura: Web Gallery of Art. Detail of Boethius (or Anaximander or Empedocles), Averroes, and Pythagoras cropped by Ian Eddington from *The School of Athens*. (fresco). The women are unknown. Hypatia has not yet been found in the work. Could the women represent the Pythagorean sisterhoods?

nature as a material *physis*, is celebrated as a remarkable achievement (Farrington, 1953, pp. 32 - 39; E. Grant, 2004, p. 88; 2007, pp. 1 - 12; G. E. R. Lloyd, 1970, pp. 16 - 22) preceded as it was by eons of reliance on magic and superstition as the naive solipsistic rationalisation inherent in totem ritual and its sustaining totem area (F. M. Cornford, 1932, pp. 7 - 8). A common theme in this scholarship is that Ionian ideas of the nature of nature, and the idea that Science is a form of enquiry predicated on pursuit of knowledge for its own sake, emerged together, but that in Ionia in the sixth and fifth centuries BC these ideas of nature and Science expressed themselves in rational cosmogonies increasingly

detached from theogony *qua* enquiry into origins and descent of gods.

For example, the gods of Hesiod’s now incredible *Theogony* (Hesiod, 1914b, 1999), those gods present from the beginning of the world, are largely absent in the cosmogonies outlined earlier in the third column of Table 4 on page 46. These cosmogonies and cosmologies focus on how the world came to be, how life arose, and what the world was made of, but there is reduced reliance on the coupling of gods and the presence of Zeus to explain matters of nature. The content of Table 4 on page 46, especially the third and fourth columns, plausibly signifies a then de-deification of cosmogony and cosmology detected by prominent researchers. My study of the translated Presocratic fragments, from which fragments the Table 4 source authors obtained some of their information in the first place, has been informed by helpful insights these scholars have provided.

Table 4: Aspects of the Rich Thought Detectable in Presocratic Cosmology and Cosmogony

Name	Location and or Philosophy	Cosmology and or Cosmogony ^(a)	Materiality and or Ideality	Departure Point
Heraclitus (BC 535 - 475)	Ephesus on the west coast of present day Turkey; Ionic by geography but not by philosophy.	Everything is born of strife and everything is in flux. ^{(1)&(2)} His fragments reveal little if any cosmogony ⁽⁴⁾ and suggest that the world was, and will be, as it presently is. There is no harmony of opposites all things being the outcome of strife.	Fire is a kind of material substance most near the materiality of his thinking ⁽¹⁾ . 'Mankind breathes in the cosmic fire which becomes their intellect and the course of the world is predicated on the <i>logos</i> or account, given in the cosmic fire. The stuff of this account is in each of us and we are exhorted to look inwards to the <i>logos</i> , rather than trusting the senses, when attempting to discover the truth of the physical world's unfolding change.	The simple Ionian cosmogonies were, in themselves, seemingly not enough for Heraclitus. Distrust of the senses creeps in. ^{(3)&(4)}
Parmenides (BC 510 - 450)	Elea, Southern Italy; Pythagorean by geography but not by philosophy.	Parmenides might be interpreted as employing the existential meaning of the word to be - to be means simply to exist - rather than the form of what is now understood as the predicative. ⁽⁵⁾ For example sad is a qualifying predicate of being in the sentence I am sad and he would have none of the ancestral arguments that a thing could be and not be, or that the one could become many	His starting point was that things exist and that the observed continuous change was not existence: whatever existence was it was something in a world apart a something that could only be reached by mind: his reality was non-sensible and the plurality of the Ionian view was an impossibility. This world could not have come from the one existing reality as had been previously argued.	Rejection of Heraclitus' universal flux and identity of opposites, to be and not to be are the same and not the same, as contradictory ⁽⁶⁾ . Matter exists and is knowable through mind.
Empedocles (BC 490- 430)	Pythagorean by geography - Sicily: a mystic and magician who claimed to be able to raise the dead and arrest the winds. ⁽⁷⁾	For Empedocles the observed phenomena were combinations of root elements or substances: fire, water, air and earth were root substances which existed, and will exist for all time. Beings like trees, fish, and humans are simply chance combinations of these root elements, and the motion of the observed natural world was explained as a function of physical forces named love, which drew in and united the elements, and strife which caused elements to repel one another. No god of creation existed in Empedocles' world: those combinations best adapted to their purpose survived: others fell.	The strife-love tug of war helped account for the observed cycles of the natural world and its motion and although, in the manner of Greek thinking in general, and Pythagorean mysticism in particular, he attributed psychological and moral dimensions to strife and love, Guthrie ⁽⁸⁾ argues that even at this stage in the development of Greek thought, there was no separation of these 'non-material' or formal attributes from the 'material' or matter <i>per se</i> .	Perhaps the first of the so-called neo-Ionians or pluralists who identified sets of substances rather than a single substance to explain being. ^{(9)&(10)} A mixture of Pythagorism and materialism.
Anaxagoras (born BC 450)	Geographical Ionian from ancient Smyrna, a province of Izmir in modern Turkey, one who settled in Athens and in whom the speculative enquiry of the Ionians is paramount. ⁽¹¹⁾	Guthrie explains that although Anaxagoras drew a clear distinction between matter and mind, and boldly stated that mind is the mover which transforms the chaos into the cosmos, in no sense was Anaxagoras posing a creation story ⁽¹²⁾ .	There is a primeval chaos of things boundless in multitude and smallness (DK59B1). ⁽¹³⁾ Everything is in everything DKB1 B4a, B4b, B6, B11, B12 and the cosmos emerges as mind separates these multitudinous and small things into separate places and concentrations allowing such entities as bone, stone, and the like to form. Anaxagoras was persecuted by the state as an atheist and his fellow philosophers criticise him as a natural philosopher for dragging mind in at the last moment to explain the unexplainable. ⁽¹⁴⁾	Mind is the mover.
Democritus (born BC 460)	Abdera in Thrace: Atomist.	The sensible world began when existing atoms, moving at random, bumped into one another and joined up. The space left when atoms join up, or existing between a plurality of existing substances necessitates acceptance of the void as an existential entity. ⁽¹⁵⁾ Nor apparently did the atomists explain the cause of the motion of the atoms. ⁽¹⁶⁾	His answer to Parmenides was that the matter announced by Anaxagoras consists of tiny particles, "unsplittables" or <i>atomi</i> : indestructible, of various shapes and sizes, but identical in substance, and invisible, soundless, scentless, colourless whose shape, size, motion, relative distance were the dimensions occasioning sense perception of natural objects primarily through touch. Hard things were closely packed, soft things less so. Sweet things are made of smooth atoms and bitter things of rough or hooked atoms. Streams of such atoms left the surface of objects to impact on the eye so that always touch was the paramount sense. In particular, the most perfect of atoms were round and it is of such atoms that the soul consists.	Acceptance of the void, indivisibility of particles beyond the size of <i>atomi</i> and of eternal motion. Materialist explanation of even the soul.

Notes: (a) This table presents general information consistent with received material-monism type interpretations and classifications of Presocratic philosophy. Caveats and citations noted throughout the table intimate that considerable contestation clouds so-called received view summarisation of the kind presented. (1) Disputed by Kirk (1954, p. 366) who, according to Graham (2009, p. 115), and along with Reinhardt (1916, pp. 206 - 207), (Notes continue on the next page.)

argued against five tenets (i) fire as monad, (ii) cycles of conflagration and regeneration, (iii) everything is in flux, (iv) the opposites of (ii) and (iii) are identical and (v) Heraclitus violates the Law of Non-Contradiction, held to summarise Heraclitus. Burnet (1908, pp. 192 - 226) contests (ii), (iv) and (v). (2) Graham interprets Heraclitus as finding constancy amongst the observed ever changing flux (Graham, 2009, pp. 114 - 115) and reports Vlastos(1955, pp. 377 - 378), Guthrie (1962, pp. 403 - 487) and Barnes (1982, pp. 43 - 62) amongst others supporting Heraclitus *qua* flux theorist. (3) Barnes (1982, pp. 67, 78) urges Heraclitus a monist in the tradition of his predecessors, one applying substantial empirical observation in his analysis of flux. Graham (2009) urges him departing from material monism by conjecturing that Heraclitus does not have one substrate always present in change. Perhaps a train shunt energy metaphor is helpful here. Graham says Heraclitus progresses “beyond a theory of stuffs to a theory of process ... [and on to] a deeper unity, the law of transformation itself, which I take to be the essence of Heraclitus’s Logos” (ibid., p. 145). Graham arrives at his insightful conclusion over many pages (ibid., pp. 113 - 147) in which, in addition to refuting Barnes on material monism and interpreting Heraclitus from Transformational Equivalence, Lawlike Material Flux and other perspectives which he articulates through his surveys of scholars past and present, might reasonably allow one to speculate that articulation of Presocratic philosophy has become something of an apeiron in its own right. (4) Kirk (1954, pp. xii - xiii) names Heraclitus a cosmologist. (5) There is contestation and a number of readings of Parmenides’ meaning of being are possible, each having its own implications. For example, there is existential interpretation (Barnes, 1982, pp. 160 - 161; Taran, 1965, pp. 175 - 201; Wiesner, 1996, pp. 205 - 236), predicative being interpretation in various constructions (Curd, 1998, pp. 43 - 47, 242 - 243; Mourelatos, 1970, pp. 60 - 63, 74 - 80, 98 - 100), merged meanings interpretation (Kirk & Raven, 1957, p. 270; Kirk, Raven, & Schofield, 1983, p. 246), and other modes of interpretation as well (Meijer, 1997, pp. 159 - 162). (6) Graham (2009) reads Parmenides’ refutation of Heraclitus as a radical refutation of the whole Ionian project arguing that Parmenides would not banish primary substance from philosophy but would rather than allow change to dissolve substance, would banish change (ibid., pp.154 - 155, 170 - 171). In astronomy, apparently, Parmenides’ successors view him as a reformer rather than a radical iconoclast (ibid., p. 182). For Parmenides process is prior to substance (ibid., p. 161). (7) Nevertheless Empedocles is to be taken as a serious philosopher making an attempt to escape the logical net of Parmenides (8) (Guthrie, 1975a, p. 53). (9) (Barnes, 1982, pp. 239 - 248; Guthrie, 1975a, pp. 50 - 51). (10) Dissatisfaction with a received view that pluralism down to the atomists is a reaction to the logic of the Eleatics, and an attempt to construct a system that can account for coming to be and passing away (Kirk et al., 2002, p. 358), is discussed by Graham (2010, pp. 186 - 223). To wit, unlike Kirk (2002, p. 358) he views Empedocles and Anaxagoras endorsing Parmenides more than rejecting him (ibid., p. 190). It is no easy matter to arrive at unqualified conclusions even between Empedocles and Anaxagoras (ibid., p. 195). (11) Graham (2010, pp. 222 - 223) posits that perceived similarity between pre-Parmenidian might be superficial, that is while the superstructure of their theories are similar, their foundations are radically different, the former working from monad, the latter working with elements having fixed natures and an ability, through combination, to the many sensible substances *qua* physical phenomena of the cosmos. (12) Guthrie (1975a, pp. 55 - 56). (13) Graham (2010, p. 197) claims that the boundless in Anaxagoras’ apeiron of boundless things may be likely be translated as a limited boundless thus shortening the degree of separation between Anaxagoras and Empedocles. (14) Schofield (2007, pp. 4 - 7) allows that Anaxagoras’ Fragment 12 (DK59B12) on mind may be taken as “dogmatic high flautin poppycock” (ibid., p. 4) or a hymn, in “solemn predication”, to *nous* (ibid., p. 7), downplaying the former. (15) Aristotle *Metaphysics* 985b4 - 9 (1952d, p. 503; 1989). The hair is split as follows: “‘nothing’ does not mean ‘nonexistent’ or more generally ‘not-being, but ‘not-thing’. To be nothing is not necessarily to be non-existent”. (Graham, 2009, p. 263). This enigmatic question of physics, of being and non-being, is sometimes attenuated through logical, grammatical or semantic explanation (Barnes, 1982, p. 402; D. J. Furley, 1987, pp. 120 - 122; Schofield in Kirk et al., 1983, p. 415). Curd (1998, p. 204) posits the void as existentially knowable through human understanding *per se*. (16) One version of received theory reads the atomists as reacting to the latter Eleatics Zeno (BC 490 - 430) and Melissus (BC 5th century) and Graham (2010, p. 256) provides insights into the complexity of such a perceived relationship.

Source: Constructed by Ian Eddington through engagement with the following works: Burnet, J. (1908). *Early Greek Philosophy*. (passim). London, Adam and Charles Black; Fairbanks, A. (1898). *The First Philosophers of Greece*. (pp. 1-157). New York: Charles Scribner's Sons; Burnet, J. (1920). *Greek Philosophy Part I: Thales to Plato*. (passim). London: Macmillan; Kirk, G. S., Raven, J. E. and Schofield, M. (1995). *The Presocratic Philosophers: A Critical History with a Selection of Texts* (pp. 76-402). Cambridge: Cambridge University Press; Lloyd, G. E. R. (1970). *Early Greek Science: Thales to Aristotle* (pp. 16-23, 35-50). New York: W. W. Norton and Company; Guthrie, W. (1975a) *The Greek Philosophers from Thales to Aristotle* (p. 54). New York: Harper & Row; Sarton, G. (1993). *Ancient Science through the Golden Age of Greece*. (pp. 160-198). New York: Dover Publications; Waterfield, R. (2009). *The First Philosophers: The Presocratics and Philosophers*. (pp. 3-21, 32-68, 116-163) New York: Oxford University Press; Graham, D. W. (2010). *The Texts of Early Greek Philosophy: The Complete Fragments and Selected Testimonies of the Major Presocratics*. (pp. 17-203, 271-326, 516-630). Cambridge, UK: Cambridge University Press; Kirk, G. S., & Raven, J. E. (1957). *The Presocratic Philosophers: A Critical History with a Selection of Texts* (pp. 76-402). Cambridge: Cambridge University Press; McKirahan, R. (2011). *Philosophy before Socrates: An Introduction with Texts and Commentary*. (pp. 112-144; 145-173; 193-229; 230-292). Indianapolis: Hackett Publishing; McKirahan, R. (2005). (pp. pp. 165 - 188). *Assertion and Argument in Empedocles' Cosmology or What Did Empedocles Learn from Parmenides?* In the *Symposium Philisophiae Antiquae Tertium Myconese: The Empedoclean Kosmos: Structure, Process and the Question of Cyclicity*, Patra; Kirk, G. S., Raven, J. E., & Schofield, M. (2002). *The Presocratic Philosophers: A Critical History with a Selection of Texts*. (pp. 181-213, 239-262, 352-384, 280-321, 402-433). Cambridge: Cambridge University Press; Vlastos, G. (1955). On Heraclitus. *American Journal of Philology*. (pp. 337 - 338). 76; Guthrie, W. K. C. (1962). *History of Greek Philosophy* (Vol. 1). (pp 403 - 487). Cambridge: Cambridge University Press; Barnes, J. (1982). *The Presocratic Philosophers*. (pp. 43 - 62, 160 - 161, 239 - 248, 402). New York: Routledge; Taran, L. (1965). (pp. 175 - 201). *Parmenides*. Princeton, NJ: Princeton University Press; Mourelatos, A. (1970). (p. 88). *The Route of Parmenides*. New Haven, CT: Yale University Press; Meijer, P. A. (1997). *Parmenides Beyond the Gates: The Divine Revelation on Being, Thinking and the Doxa*. (p. 88). Amsterdam: J. C. Gieben; Curd, P. (1998). *The Legacy of Parmenides: Eleatic Monism and Later Presocratic Thought*. (pp. 43 - 47, 204, 242 - 243). Princeton: Princeton University Press; Schofield, M. (2007). *An Essay on Anaxagoras*. (p. 4 - 7). Cambridge: Cambridge University Press; Kirk, G. S., Raven, J. E., & Schofield, M. (1983). *The Presocratic Philosophers* (2 ed.). (pp. 246, 415). Cambridge: Cambridge University Press for the information these scholars bring to explanation of the table column headings chosen for enquiry purposes.(Barnes, 1982; Curd, 1998; Graham, 2010; Guthrie, 1962, 1975a; Kirk & Raven, 1957; Kirk et al., 1983, 2002; G. E. R. Lloyd, 1970; McKirahan, 2011; Meijer, 1997; Mourelatos, 1970; Reinhardt, 1916; Sarton, 1993; Schofield, 2007; Taran, 1965; Vlastos, 1955; Waterfield, 2009; Wiesner, 1996). Relevant Fragments are Heraclitus 22A1 22A6 22A10 22A16 22B1 22B2 22B3 22B5 22B6 22B7 22B9 22B11 22B12 22B13b 22B14 22B15 22B16 22B18 22B21 22B25 22B26 22B27 22B29 22B30 22B31 22B32 22B33 22B34 22B36 22B41 22B42 22B43 22B44 22B45 22B49 22B49a 22B50 22B51 22B53 22B54 22B55 22B60 22B61 22B64 22B66 22B67 22B72 22B78 22B79 22B80 22B85 22B88 22B89 22B90 22B91 22B92 22B93 22B94 22B96 22B101 22B104 22B107 22B108 22B110 22B114 22B116 22B117 22B118 22B119 22B121 22B123 22B125a 22B126 22B136; Parmenides 28A24 28A25 T3 28A28 T1 28A35 T7 28A37 T8 28A40a 28A46 28A52 28B1 28B2 28B3 28B4 28B5 28B6 28B7 28B8 28B9 28B10 28B11 28B12 28B13 28B14 28B15 28B17 28B19; Empedocles 31A1 31A22 31A25 31A28 31A33 31A42 31A49 31A49b 31A50 31A51 31A53 31A54 31A55 31A59 31A60 31A68 31A69 31A75 31A78 31A81 31A86 31A87 31A89 31B2 31B3b 31B6 31B8 31B9 31B12 31B13 31B16 31B17 31B20 31B21 31B22 31B23 31B26 31B27 31B29 31B31 31B35 31B36 31B38 31B45 31B48 31B53 31B57 31B61 31B62 31B69 31B73 31B84 31B90 31B96 31B98 31B100 31B105 31B109 31B110 31B111 31B112 31B114 31B115 31B117 31B124 31B128 31B130 31B132 31B134 31B136 31B137 31B141 31B146; Anaxagoras 59A1 59A41 59A42 59A43 59A45 59A46 59A52 59A63 59A80 59A81 59A89 59A92 59A110 59A117 59B1 59B2 59B3 59B4a 59B4b 59B5 59B6 59B7 59B8 59B9 59B10 59B11 59B12 59B13 59B14 59B15 59B16 59B17 59B18 59B19 59B21; Democritus 68A9 68A37 68A40 68A43 68A47 68A48b 68A60 68A69 68A71 68A77 68A108 68A112 68A135 68A139 68A143 68A151 68A162 68A169 68B3 68B6 68B7 68B8 68B9a 68B9b 68B10 68B11 68B31 68B117 68B155 68B156 68B159 68B164 68B166 68B170 68B171 68B174 68B187 68B188 68B191 68B211 68B214 68B219 68B234 68B235 68B251.

In summary, the presence of scientific philosophy in Ionia appears to constitute a

Practical or Ethical or Political Philosophy
 Mankind's attempt to explain the microcosm, mankind themselves and their nature and place in the macrocosm. It is largely practical because it is driven by a desire to find out how human life and conduct can be improved.

fledgling Western revelation of an interest in knowledge for its own sake and, although why it emerged continues to be an open question, that it did emerge is well documented and also evidenced

through existence of cosmogony and cosmology in which reasoning Science relies less and less on theogony in its attempts to understand the nature of nature. Scientific or speculative philosophy emerged at a time when P(p)olis religion as the practical day to day worship of gods was, except for a possible salvation-of-a-personal-soul-eschatology associated with cults, largely an affair of festivals, and votive activity, in which the people fervently participated. Yet, as discussed earlier, issues of religion and Science and politics were a cause of disquiet. Such a general characterisation of P(p)olis religion might be thought of as a still useful formwork and scaffold within which

Working Timeline for Approximation Purposes	
<u>Classification</u>	<u>Era</u>
Presocratic Philosophy	BC 6 th – 5 th centuries Milesian, Ionian, Eleatic, Pythagorean, Megarian
Classic Philosophy	BC 4 th century Socrates, Plato, Aristotle
Hellenistic Philosophy	BC late 4 th century – AD 1 st century Cynics, Epicureans, Stoics, Sceptics
Imperial	AD 1 st – 6 th centuries Neoplatonists

ongoing scholarship might continue to provide new insights into Greek religion and its changing relationship with Science and politics. In continuation of investigation of

relationships between Greek Science and religion I turn, in the first paragraph of the next section beginning after Table 4, to discussion of practical or ethical philosophy, the second kind of philosophy said to be extant in Plato's time and described earlier on page 26.

Return to Discussion of Practical Philosophy

The so-called practical philosophy of the centre column of Table 2 on page 25 was brought to enhanced prominence through the life of Socrates dialogised by Plato, and reached a pagan and enduring high point with Aristotle's *Nicomachean Ethics* (Gill, 1995, p. 86). At *Metaphysics* I, 987a30 – 988a18 (1952d, pp. 505 - 506; 1989) Aristotle implicates Socrates, Plato and Pythagoreans in an emergence of ethical enquiry and scholars find origins of practical philosophy in the Italiote line in Pythagorean cults in

Sicily and Greek colonies in southern Italy (Barnes, 2002, pp. 158 - 159), particularly Croton (F. M. Cornford, 1923, pp. xxv, 65; Guthrie, 1975a, p. 34; Huffman, 2006, pp. 3, 6); in the accumulated moral endowment of the classic Greek values fossilised in the content of Homer (Adkins, 1960, p. 238; Hobbs, 2006, p. 141); and in intellectual responses to social change.

Pythagoreanism as a precondition of practical philosophy is discussed first.

In an exchange concerning whether or not Platonic Ethics emerged from Aristoxenus' *Pythagorean Precepts*, Huffman (2008, pp. 104 - 119) refutes the standard scholarship (Burkert, 1972, p. 107 - 108; C. H. Kahn, 2001, p. 70; Rivaud, 1932, p. 784; Wehrli, 1945, p. 59) which holds that the surviving fragments of Aristoxenus' *Pythagorean Precepts* "are an invention of Aristoxenus ... [who drew heavily on] Platonic and Aristotelian Ethics to the detriment of Aristotelian and Platonic authority" (Huffman, 2008, p. 106, my square brackets). His argument is that the similarity of the *Pythagorean Precepts*:

"to material in Plato and Aristotle is the result not of borrowing by one party or the other, but rather of a shared interest in defending certain conservative strands in Greek traditional morality, a morality which is hardly limited to Plato and the *Pythagorean Precepts* and which can be found in Sophocles [BC c.497 – c.406], Thucydides [BC 460 – 400/395], and Xenophon [BC 430 – 354] as well". (Huffman 2008, p. 107, my square brackets)

Pythagoras was one of the Greeks who fled westward in fear of menace from Persia (Lomas, 2013, p. 95) and, if not in questionable fragment form, none of his writings are known to survive (Burnet, 1908, pp. 91 - 93; K. Ferguson, 2010, pp. 2 - 4; Riedweg, 2008, p. 42).

Tentative information about Pythagoras comes to us a little from Aristotle at *Metaphysics* I 5 986a15 - 25, 987a10 – 25 (1952d, pp. 504,505) and more via Diogenes Laertius's *Life of Pythagoras* (2010a, n.p.), Porphyry's *Life of Pythagoras* (2010, n.p.), Herodotus's *Histories* (1899, pp. 113, 289, 318, 341), Iamblichus's *Life of Pythagoras* (1707, n.p.; 2010, n.p.), Photius's preserved anonymous *Biography of Pythagoras* (2010,

n.p.) and Hierocles's *Golden Verses of Pythagoras* (2010a, n.p.; 2010b, n.p.). From them, and other doxographers (Fideler, 1988, 159 - 307), a facsimile (1970) of Stanley's 1687 publication of *Pythagoras his Life and Teachings*, Rothwell's 2008 translation of Schuré's 1923 publication of *Pythagoras and the Delphic Mysteries* (Schuré, 2010), and from more recent scholarship (K. Ferguson, 2010; C. H. Kahn, 2001; Martinez, 2012; Riedweg, 2008), we learn, *inter alia*, of Pythagoras' wide travels, of his brother and sisterhoods with their ascetic ways of life focussed on dogmatic taboos (Hierocles, 2010b), and of a mysticism and secrecy built around discovery of relationships in number and geometry: number then being demonstrated, *inter alia*, through arrangements of pebbles in the sand. The human soul, the Pythagoreans claimed, was a spark of the world soul, and through this kinship of souls, Pythagoreans brought themselves to beliefs in immortality of soul and reincarnation (Graham, 2009, p. 152).

Cornford (1932, p. 67), Guthrie (1975a, p. 37) and Joost-Gaugier (2006, p. 6), the latter arguing by apophasis, name Pythagoras as the first known person to employ the word *kosmos* but none of them give their source for this claim, Joost-Gaugier arguing further that anyway it is irrelevant who was first. Guthrie explains that in the Pythagorean usage *kosmos* is "an untranslatable word which combined the notions of order, fitness and beauty" (1975a, p. 37). Marconi (2004, p. 211) notes a similar usage although Graham (2009, p. 26) claims that *kosmos* became to mean 'world' in the sixth century BC. Kahn (1960, p. 188) allows *kosmos*-equals-world usage earlier in the time of Anaximander (BC 610 - 546) and Finkelberg (1998, pp. 122 - 124) claims that this usage occurred later in Plato's time (circa BC 428 - 347). Creating the world by making order out of chaos is certainly a so-called *Old Testament* theme and the same sense of cosmos as order might be found in Plato's *Timaeus* at 27a - 48d (Plato, 1925h; 1952w, pp. 446 - 456).

If *kosmos qua* strived-for order is not the seed of practical philosophy, then it is very likely part of its root structure. The Pythagoreans appear to have viewed each human as a miniature cosmos, an organism which reproduces the structures of the world organism, the living world god. The human calling and way to that world order was to be found in

a search for it through study of both the macrocosm and the microcosm. Such study was the life of philosophy and in their study the Pythagoreans focussed on form rather than on matter which had consumed the attention of the Ionians in their search for scientific understandings. It is important to note at the outset that the form spoken about by the Pythagoreans was distinct and different from that spoken about by the Ionians. For convenience of reading Table 5 on page 54 illustrates the changing usage of the terms form and matter employed in this enquiry.

In particular, according to Pythagoreans, so conjectures Aristotle, harmony or *kosmos* of the physical objects of the macrocosm and the microcosm was a question of balance achieved when number as form presided over modifications of, and permanent states in, nature. The following quotation from Aristotle's *Metaphysics* I 4 985b20 – 986a2, necessarily long to achieve its purpose, illustrates one explanation of the nature of Pythagorean form as soul or mind found in humans, and in nature, as number.

Contemporaneously with these philosophers and before them, the so-called Pythagoreans, who were the first to take up mathematics, not only advanced this study, but also having been brought up in it they thought its principles were the principles of all things. Since of these principles numbers are by nature the first, and in numbers they seemed to see many resemblances to the things that exist and come into being—more than in fire and earth and water (such and such a modification of numbers being justice, *another being soul* [italics added] and reason, another being opportunity—and similarly almost all other things being numerically expressible); since, again, they saw that the modifications and the ratios of the musical scales were expressible in numbers;—since, then, all other things seemed in their whole nature to be modelled on numbers, *and numbers seemed to be the first things in the whole of nature*, [italics added] *they supposed the elements of numbers to be the elements of all things, and the whole heaven to be a musical scale and a number*. And all the properties of numbers and scales which they could show to agree with the attributes and scheme; and if there was a gap anywhere, *they readily made additions so as to make their whole theory coherent* [italics added]. E.g. as the number 10 is thought to be perfect and to comprise the whole nature of numbers, they say that the bodies which move through the heavens are ten, but as the visible bodies are only nine, to meet this they invent a tenth—the 'counter-earth'. We have discussed these matters more exactly elsewhere.

But the object of our review is that we may learn from these philosophers also what they supposed to be the principles and how these fall under the causes we have named. *Evidently, then, these thinkers also consider that number is the principle both as matter for things and as forming both their modifications and their permanent states*, [italics added] and hold that the elements of number are the even and the odd, and that of these the latter is limited, and the former unlimited; and that the One proceeds from both of these (for it is both even and odd), and number from the One; *and that the whole heaven*,

as has been said, is numbers. Metaphysics I 4 985b20 - 986a2 (1952d, pp. 503 - 504, my square brackets and italics)

According to Aristotelian explanation, things were what they were not because of matter alone, which for the Pythagoreans was the recognisable physical objects themselves rather than the remote unchanging substance of the Ionians, but also because of the constitution of their form which consisted of number, the very same stuff and essence of the human soul. This soul substance, alive in both humans and nature, springs from their monad for the *physis* and consisted of numbers.

The principle of all things is the *monad or unit* [italics added]; arising from this monad the undefined dyad or two serves as material substratum to *the monad, which is cause; from the monad* [italics added] and the undefined dyad *spring numbers* [italics added]; from numbers, points; from points, lines; from lines, plane figures; from plane figures, solid figures; from solid figures, sensible bodies, the elements of which are four, fire, water, earth and air; these elements interchange and turn into one another completely, and *combine to produce a universe animate, intelligent, spherical, with the earth at its centre* [italics added], the earth itself too being spherical and inhabited round about. There are also antipodes, and our 'down' is their 'up'. (Diogenes Laertius, 1925a, pp. 341 - 343 reporting Alexander Polyhistor, first century BC, my square brackets)

Although Aristotle was late, at *Metaphysics XIII 6 1080b15 - 35* to point out that strictly speaking, numbers are not monadic because they extend into space and time and are therefore not incorporeal (Aristotle, 1952d, p. 612; 1989), the Pythagorean adoption of unity and its spored cascade of number as the monad of *physis* was to turn out to be a big factor in Plato's subsequent development of practical philosophy. Plato lived mostly in Athens but it is possible, on the basis of the contested *Seventh Letter 324a - 352a* (Plato or an imitator of Plato, 1952, pp. 800 - 814) and other commentary, (Diogenes Laertius, 1925b, Bk. III, 6; Lomas, 2013, p. 95; Yonge, 1915, Bk. 3, VIII), that he likely travelled to Italy where he may well have been exposed to, and influenced by, Pythagorean thought. The evidence from Diogenes Laertius is contained in one brief paragraph. The content of the *Seventh Letter* is more detailed and considered viable but the authorship of the letter itself is contested. Even were Plato not to have travelled to Italy he may yet have been influenced by Pythagorean thought and I subsequently discuss such a possibility beginning on page 102.

Although the Pythagorean usage of the term form Plato may have met in Italy, or otherwise appropriated, was the very antithesis of that adopted by the Ionians, it, the Pythagorean form *as unity* and then numbers, and the *physis*, on which the Ionians predicated their explanation of changing physical objects, do appear to have something

Authorship of the Seventh Letter

There are recognised scholars amongst those acknowledging Plato's authorship (Brisson, 1987, p. 20; Momigliano, 1993, p. 60; Morrow, 1962, pp. 3-16), those rejecting it (Cherniss, 1945, p. 31; Edelstein, 1966, p. 4; Shorey, 1933, pp. 40-41; Vlastos, 1981b, p. 202), (Boas, 1949, pp. 453 - 457) and those who are undecided (Annas, 1991, p. 285; 1999, p. 75; Brunt, 1993, pp. 319-325; Finley, 1977, p. 80; G. E. R. Lloyd, 1990, p. 159). Some of the authors rejecting authenticity nevertheless hold its content trustworthy (Brunt, 1993, p. 325; Finley, 1977, p. 80; Shorey, 1933, pp. 40-41; Westlake, 1994, p. 693). Schofield who pronounces himself hesitantly against authenticity, believes the letter "to be the work of an ingenious and powerful writer, steeped in Plato's writings and his habits of thinking and expression" (Schofield & Rowe, 2000, pp. 299 - 300), also pronounces that "the jury is still out" (Schofield, 2006, p. 15) on the question of authenticity. Annas, who find's "Tarrant's own thesis, that the philosophical digression in the 'letter' represents Middle Platonist ideas, and that it was inserted at a late date" tempting, subject to an *e silentio* caveat question of why an author like Plutarch who knew of "a seventh letter" (Annas, 1999, p. 75) fails to refer to crucial parts of it where it might be reasonably expected that he would.

in common: both were remote from the objects themselves and each was thought to be unextended and incorporeal.

Under Plato the impermanence of the observed world, the cycles of coming to be, being, and ceasing to be, was largely to be given a Pythagorean interpretation and explained in terms of matter *qua* material objects. The permanence of the observed world, the cycles of coming to be, being, and ceasing to be that themselves never ceased, was explained as necessary for the soul's journey to a world of ideal forms or templates available to it. Just as the earlier Greek gods of nature, after having

been anthropomorphised, had been removed to Mount Olympus, form, Pythagorean *physis*, was in effect removed from sensible objects and made remote. This remoteness of form from sensible objects was a possible precondition for Plato's real template forms which he made the key to human understanding explained as reminiscence because, in beholding of the forms, the soul glimpsed scientific truth. I discuss this condition in more detail below on pages 120 to 133.

Notable scholars (G. E. R. Lloyd, 1999; A. E. Taylor, 1960; Waterfield, 2009) reveal that the ascendancy of practical philosophy through the intellect of Socrates *qua* Plato, and Aristotle, was not a simple or spontaneous development but rather developed in part from cross pollination and ferment of Pythagorean and Ionian world views and a tension within these views resulting from different perspectives about monad. In working

through these conflicting ideas the dialogical Socrates and Plato were confronted by

Table 5: Changing Usage of the Terms Matter and Form

Users	Matter	Form
Presocratic Scientists	Initially a living god whose first appearances were manifested through beings such as mist, air, water and the apeiron, then as world soul, then as the dead atoms possessed of their own motion.	The shapes, the things or beings, into which matter successively arranges itself.
Pythagoreans	The beings, the things or objects of nature.	The soul or mind found in humans and in nature as number.
Plato	Poor resemblance of form brought to consciousness through reminiscence. Substance coming to be, being and ceasing to be.	The ideas or real objective existences accessible by the soul; patterns and templates through reminiscence of which the objects of the universe are able to be understood.
Aristotle	Substance, material that is capable of being essentially enformed ¹ . The potentiality of a thing, “the primary substratum of each thing, from which it comes to be without qualification” <i>Physics</i> I 9 192a30-35 (Aristotle, 1929; 1952n, p. 268).	For inanimate natural beings it is the entelechy of the body and that which defines what a thing is. For animate objects it is “the first grade of actuality of a natural organised body” <i>De anima</i> II 412a25–412b (Aristotle, 1952b, p. 642; 1957a, 1984b). That is, it is the soul. For manufactured bodies it is the ‘thisness’ or ‘thatness’ brought to the proximate matter, for example the bronze or wood of which the artefact is made.
Aquinas	Christ in God is all in all.	Christ as logos: all nature exists in God.
Francis Bacon	Substance is an aggregate of forms which is brought into existence through a chain of cause and effect beginning with the simple natures or essences.	The simple natures or forms are few in number and are letters in the alphabet of nature. From them are made the essences of all substances. Bacon’s usage is as follows. The forms are either (a) essence or definition or differentia, as grasped by the sum of the underived attributes which cause other attributes, that is the sum of the essential accidents of the phenomena <i>Novum Organum</i> (F. Bacon, 1900c, II 25, p. 398), or (b) the law or cause of a nature or quality of a body (ibid., I 51, p. 322), or (c) both (a) and (b) collapsed together: “The forms are “the true differences of things (which are in fact the simple Laws of Nature)” (ibid., I.75, p. 335). For Bacon the forms are not abstractions but actual working laws knowledge about which brings mankind power over nature.
Thomas Hobbes	There are accidents intrinsic to all material substance, these being extension, figure, magnitude and shape and these perish with the body. Other accidents not universally present, for example colour, hardness, odour may perish without the body perishing (Hobbes, 1889b, I. 2. 10; 1913, pp. 52 - 69).	There are no Platonic universal forms. Only singulars exist in reality and universals as names are only words or signs and exist nowhere <i>Leviathan</i> (Hobbes, 1904, p. 15). Universals are not essences. Form or essence is the dominant accident which identifies the matter of the singular being of body <i>Elements of Philosophy Concerning Body</i> (Hobbes, 1913, p. 67). There is no independent formal or final cause, each of these collapses into efficient cause (ibid., p. 801). Effects are caused by material and efficient causes acting together (Hobbes, 1913, pp. 69 - 76, 77).

Notes: (1) To enform is to bring form to matter. The term enform is not, in this enquiry, an alternative usage of inform.

Source: Constructed by Ian Eddington from Burnett, J. (1920). *Greek Philosophy Part I Thales to Plato*. (passim). London: Macmillan; Copleston, F. (1966). *A History of Philosophy Volume I Greece and Rome*. (pp. 127 - 378). London: Burns and Oats Limited; Plato. (1952). *Timaeus*. (p. 457). In R. M. Hutchins (Ed.), *Plato*. Chicago: William Benton; Aristotle (1952). *Physics*. (p. 268). In R. M. Hutchins (Ed.), *Aristotle I*. (pp. 259 - 359). Chicago: William Benton; Aristotle. (1952). *De anima*. (p. 642). In R. M. Hutchins (Ed.), *Aristotle I*. (Vol. 8, pp. 629 - 668). Chicago: William Benton; Aristotle *On the Soul*. (1957). (W. S. Hett, Trans. Loeb Classical Library ed.). Cambridge, Mass: Harvard University Press; Bacon, F. (1900). *The Advancement of Learning and the Novum Organum*. (pp. 322, 335, 398). London: The Colonial Press; Hobbes, T. (1913). *Elements of Philosophy Concerning Body*. (pp. 67, 77 and 80 in the context of 52 – 69 and 69-76). In M. Calkins (Ed.). *The Metaphysical Systems of Hobbes*. Chicago: The Open Court Publishing Company; Hobbes, T. (1889). *The Elements of Law Natural and Politic*. (I, 2, 10). London: Simpkin, Marshall and Co.; Hobbes, T. (1904). *Leviathan*. (p. 15). Cambridge: The University Press.

differing understandings of matter and form as unity each in its own right, a living unity

and a god, and as discussed, they contributed to a new understanding of matter and form predicated on their dual presences in the various existing beings. I return to Aristotle's further development of this duality in Chapter 3.

I now turn, as the next heading signifies, to the second and third preconditions for practical philosophy's emergence mentioned earlier on page 49, respectively intellectual response to social change, and intellectual access to the accumulated moral endowment of the classic Greek values fossilised in the content of Homer.

Intellectual Response to Social Change and Intellectual Access to an Accumulated Moral Endowment of Classic Greek Values Fossilised in the Content of Homer

Plato's reaction to social change led him to resurrect classic Greek virtues fossilised in Homer and employ them in his own system of Ethics. For example, the work of the fifth-century Sophists during the leadership of Pericles (BC 495 – 429), gives an indication of the presence of social change which was to drive Plato.

Pericles, builder of the Parthenon and leader of democratic Athens "is said not to have



Source:(Lawrence Alma-Tadema, 1836). (artist). *Phidias Showing His Friends the Frieze of the Parthenon*. (oil on canvas). Birmingham: Birmingham Museum and Art Gallery. The friends of the sculptor Phidias are often attributed to be such notables as Pericles, Aspasia, and Alcibiades.

got his wisdom by the light of nature [or independently after Lamb's translation], but to have associated with several of the philosophers" *Alcibiades* I 118c (Plato or an imitator of Plato, 1892, p. 484, my square brackets; 1955, p. 155). Pericles worked with the Sophists, these so-called practitioners of wisdom, whose expressed role was to provide

guidance in the practical affairs of business and government (Gagarin & Woodruff, 1995, p. xxii).

Among their number are Protagoras (c. BC 490-420), Gorgias (c. BC 487-376), Prodicus



Source: (Gerome, 1861). (artist). *Socrates Seeking Alcibiades in the House of Aspasia*. (1861). (Oil on canvas). Private Collection: Philosophy and Philosophers in Art. Socrates urges Alcibiades to leave Aspasia's house. Aspasia, educated and politically wise consort of Pericles, builder of the Parthenon, was reputed to have kept a brothel. Alcibiades, beautiful youth, then warrior and wit, is reputed to be a companion of Socrates although in the *Symposium* (Plato, 1952u, pp. 168 - 171) Socrates is presented as rejecting Alcibiades' advances which, in itself, does not resolve the question.

(c. BC 465-415), Hippias (c. BC 460-399), Thrasymachus (c. BC 459-400), Callicles (dates are unknown—perhaps Callicles is Plato's invention for the progress of the *Republic*), Antiphon (last two decades of the 5th century BC), and Cratylus (late 5th century BC) and, as Table 6 beginning on page 115 reveals, some of these Sophists speak to us through

the dialogues of Plato, most of which dialogues are set in or around Athens. The Sophists claimed to be able to teach the professional and technical know-how or *arete* of government and they carried with them a mistrust of, and scepticism about, the ability of humans to gain absolute knowledge of the observed world via the senses.

In particular, some of the Sophists suggested that the law was not divine and Zeus-given, as it was understood to be in the times of a more isolated and self-contained Greece, but rather a man-made convenience. Realisation of this opinion became acute through a need to draft legislation compatible with a differing human values extant in the newly conquered colonies and Sauppe (1889, p. 1) and Gagarin and Woodruff (1995, p. xii) give a good example of its possible impact on the Sophists. They reveal that the dialogical Sophist, Protagoras, whom Socrates takes to task in the man-is-the-measure-of-all-things discussion beginning at *Theaetetus* 152a (Plato, 1921c; 1952v, 152, p. 157), was a commissioner sent by Pericles to the new Athenian colony of Thurii in Southern Italy to draft its constitution, where he professionally confronted the relative and social nature of law.

Cornford (1932, p. 39) likens the period of the fifth century Sophists to an adolescence of practical philosophy. Mulgan (1979, pp. 121 - 122) finds Sophists predicating law on social contract and explains the emergence of social contract as a movement in lawmaking away from the unalterable laws of nature as *physis*, towards culture as *nomos*, that is towards culture as man-made and alterable situations. The movement is away from the intractable laws of the gods, and he finds companionship with Popper's expressed view that this movement was indicative of an awareness that the role of government was to protect its citizens (Popper, 1962, 14 - 15). Diogenes Laertius in *Lives of the Eminent Philosophers* at II, 16 (2010b, no pagination) also speaks of this movement from natural laws to social laws about goodness and justice, and links Archelaus (BC 5th century), likely Socrates' teacher, with its early beginnings.

Guthrie (1975a, p. 68) and Kochin (2009, p. 134) name a work by Gorgias called *On Nature or the Non-existent* and claim, Kochin adding a qualifying *probably*, that its title is a parody on the often used natural philosophy title *On Nature (Physis) or the Existent*. Their point is that Gorgias' title is an example of the heights to which Sophistic scepticism rose and I take this scepticism to epitomise social change. Guthrie notes without citation that Gorgias argued "(a) that nothing exists, (b) that if anything did exist we could not know it, and (c) that if we could know anything, we could not communicate it to our neighbour" (Guthrie, 1975b, p. 68) and these words are close to fragments of Gorgias that can be found in Sextus Empiricus' work *Against the Schoolmasters* at vii, 65 – 68 (Sextus Empiricus, 1949, 2010). The full context of articles (a), (b) and (c) in Guthrie's uncited explanation can also be found in Gorgias' fragments themselves (DK 82B1-3). Kochin cites Pseudo Aristotle's *On Melissus, Xenophanes and Gorgias* at 974a12 (Aristotle or another, 1936/2015, 1984a) for the fragments he uses in his discussion of Gorgias on existence.

The extent to which Protagoras may have been undermining belief in the gods and their divine law is also evident in other fragments: Protagoras is attributed to have written "About the gods, I am not able to know whether they exist or not exist, nor what they are like in form; for the factors preventing knowledge are many: the obscurity of the subject,

and the shortness of human life” (DK 80B4). Lucas (1994, p. 9) also addresses this undermining of the Greek gods. Again social change is in the air. In addition, after Pericles (BC 495- 429), Athens fell into decline and managing the nation and its dominions meant that humans had likely to pay relatively more specific and acute attention to working and living together and solving practical problems, than to participation in the curiosity driven enquiry of speculative Science. Such appears to be the accumulated change and scepticism confronting the dialogical Socrates (died BC 399) and Plato (BC c. 428 – c. 348) in the Athens ascendant and the Athens-in-decline of their times.

Oliver (1940, p. 317) argues that the subsequent development in moral and practical philosophy apparently nurtured by Socrates, and continued by Plato and Aristotle, was in no small way a stand against that change and scepticism. Plato depicts Socrates as one rejecting this scepticism, and carrying his disgust in the moral decline of Athens, following Pericles, with him on his so-called second sailing—his revealed turning away from Science expressed at *Phaedo* 96a – 101a (Plato, 1952n, pp. 240 - 243; 1966c). Socrates, as a younger man, is depicted as having “had a prodigious desire to know that department of philosophy which is called the investigation of nature: to know the causes of things, and why a thing is and is created or destroyed” *Phaedo* 96a (Plato, 1952n, p. 240; 1966c). The dialogical Socrates’s announcement of his turning away from those sixth and fifth century Ionian cosmological explanations of the how and why of events is quoted at length below because it clearly raises the question of what-is-best, which question is to practical or ethical philosophy what the question of what-is-the-world-made-of is to scientific or speculative philosophy.

Then I heard some one reading, as he said, from a book of Anaxagoras, that mind was the disposer and cause of all, and I was delighted at this notion, which appeared quite admirable, And I rejoiced to think that I had found in Anaxagoras a teacher of the causes of existence such as I desired, and I imagined that he would tell me first whether the earth is flat or round; and whichever was true, he would proceed to explain the cause and the necessity of this being so, and then he would teach me the *nature of the best* [italics added] and show that this was best; and if he said that the earth was in the centre, he would further explain that this position *was the best*, [italics added] and I should be satisfied with the explanation given, and not want any other sort of cause. And I thought that I would then go on and ask him about the sun and moon and stars, and that he would explain to me their comparative swiftness, and their returnings and various states, active

and passive, and how all of them were for the best.... These hopes I would not have sold for a large sum of money, and I seized the books and read them as fast as I could in my eagerness to know the *better and the worse* [italics added].

What expectations I had formed, and how grievously was I disappointed! As I proceeded, I found my philosopher altogether forsaking mind *or any other principle of order*, [italics added] but having recourse to air, and ether, and water, and other eccentricities. There is surely a strange confusion of causes and conditions in all this. It may be said, indeed, that without bones and muscles and the other parts of the body I cannot execute my purposes. But to say that I do as I do because of them, and that this is the way in which mind acts, *and not from the choice of the best*, [italics added] is a very careless and idle mode of speaking. I wonder that they cannot distinguish the cause from the condition, which the many, feeling about in the dark, are always mistaking and misnaming. ... But as I have failed either to discover myself, or to learn of any one else, the nature of the best, *I will exhibit to you, if you like, what I have found to be the second best mode of enquiring into the cause* [italics added]. *Phaedo* 97 – 100 (Plato, 1952t, pp. 241 – 242, my italics, my square brackets).

In the quote above, the dialogical Socrates links the principle of order, that is *kosmos*, with the principle of best choice, and as I demonstrate below in the Step 3 discussion on how Science and Ethics inform the Platonic *Polis*, these principles lie at the heart of Plato's practical Ethics in its fully developed form. They inform the ideas found there of mankind's choice of the good or best in a technical sense, and Plato's urging that virtue

is some kind of knowledge, which is of key importance for later demonstration of Proposition 1. I also demonstrate below in the discussion of Step 3 of this chapter specific details about how Plato turned to the classical Greek values fossilised in Homer to complete his system of Ethics. I deliberately postpone discussion of Plato's adoption of Homeric values until Step 3 because it depends on specific usage of terms, which usage I discuss in Step 2. For present purpose I simply state that Plato finds that wisdom, justice, courage, and temperance, those virtues of the *Iliad* (Homer, 1806, 1884) and *Odyssey* (Homer, 1802, 1813), exist within the human soul, and he enshrines them in his ideal republic. These values are likely to have pervaded other extant literature available to Plato (Gagarin & Woodruff, 1995, pp. xv - xvi). Adkins' comment is also apposite:

Thesis Proposition Statement (1)
(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of Polis situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of Polis is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

“Scratch [Plato’s] Thrasymachus and you will find [Homer’s] Agamemnon” (Adkins, 1960, p. 238, my square brackets).

Having adjourned discussion of an emergence of practical philosophy until the completion of Step 2 on page 96 I now re-continue discussion of the emergence of a critical or psychological philosophy, the third kind of philosophy, outlined in Table 2 on page 25 and described on page 26.

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Return to Discussion of Critical or Psychological Philosophy

The emergence of this kind of philosophy is also foreshadowed by Socrates’ second

<p>Critical or Psychological Philosophy Mankind’s attempt to understand the nature of their own minds and the implications of such understanding as it impacts on speculative and practical philosophy.</p>
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sailing and was further coaxed into consciousness by Socrates’ attributed exhortation to know thyself, a precondition for a making of better society. Xenophon (BC 430 –

354), admirer and student of Socrates (BC 469 – 399), captures this early emergence of critical philosophy well in his *Socratic Writings*.

[Socrates] And this too is plain, is it not: that through *self-knowledge* [italics added] men meet with countless blessings, and through ignorance of themselves with many evils? Because, the man who *knows himself* [italics added] knows what is advantageous to himself; he discerns the limits of his powers, and by doing what he knows, he provides himself with what he needs and so does well; or, conversely, by holding aloof from what he knows not, he avoids mistakes and thereby mishaps. And having now a test to gauge other human beings he uses their need as a stepping-stone to provide himself with good and to avoid evil. Whereas he who does not know himself, but is mistaken as to his own capacity, is in like predicament to the rest of mankind and all human matters else; he neither knows what he wants, nor what he is doing, nor the people whom he deals with; and being all abroad in these respects, he misses what is good and becomes involved in what is ill. *Socratic Writings*(Xenophon, 2009, p. 106 my square brackets)

The quotation above notwithstanding, Socrates’ ownership of the know-thyself exhortation is disputed. For example Pausanias, in his *Descriptions of Greece* at 10. 24. 1 (Pausanias, 1886, p. 264; 2000, p. 507), associates the know-thyself wisdom with a number of names and announces its inscribed presence in the fore-temple at Delphi. For

that matter another inscription, “not too much of anything” (Pausanias, 1898, p. 264) is not necessarily far removed from the moderation-in-all-things idea frequently associated with Aristotle. Xenophon too has Socrates asking Euthydemus whether or not he has seen a know-thyself inscription at the temple (Xenophon, 2009, p. 105) and found it a useful aid for humans, enmeshed as such beings are in matters of value, introspection



Xenophon Alcibiades Plato, obscured, and Socrates Aspasia Apelles Alexander the Great Aristotle

Source: Delacroix, F. *The Limbo*. (cupola painting, the Senate Chamber of the Palais du Luxembourg, Paris). (1841 – 1846). Famous Greeks cropped by Ian Eddington from *The Limbo: Philosophy and Philosophers in Art*.

and pursuit of knowledge.

In summary, I have to this point completed only part of the work of Step 1 of this chapter, that part concerned with an emergence of three kinds of philosophy extant in Plato’s time. I have (a) articulated a view that speculative philosophy flowered in Ionia when Science, in quest of knowledge for its own sake, attempted to discover what the world was made of, (b) begun explanation of how, in raising the question of what-is-best, and in seeking an answer to it, Plato, by virtue of his exposure to Pythagorean *kosmos* and mysticism, and his return to the classic Greek values preserved in some of

the earliest works of the Western cannon—Homer’s *Iliad* and *Odyssey*—fostered a growth of practical philosophy, (c) posited that by announcing his second sailing, Plato’s Socrates ended practical philosophy’s adolescence, an adolescence characterised by ridicule of both the scientific and mystical explanations of nature, and by condescension towards the pantheon of Homer’s gods and the Zeus-given nature of law, (d) explained how critical philosophy was called forth by a dialogical Socrates’ second sailing and his championing of a know-thyself inscription, and (e) identified, within a developing religion-to-philosophy theme, possible social discord and personal eschatology dimensions coeval with state or P(p)olis religion. I continue articulation of Step 1 to address its claim that the emergence of three kinds of philosophy is coeval with a transition from religion to philosophy.

Discussion of Step 1 Continues

Emergence of Three Divisions of Philosophy Coeval with a Transition from Religion to Philosophy

I take a lead from Cornford’s general explanation, and Burnet’s passing acknowledgement, that philosophy emerged

Step 1
 Step 1 examines a proposition that three divisions of philosophy were extant at the time of Plato’s life and that the emergence of the three divisions is coeval with a general transition from religion to philosophy.

because, as human settlements developed, religion alone, understood simplistically as habitual ritual behaviour, and/or everyday votive

habit, was found insufficient as human society became more complex (Burnet, 1908, pp. 2 - 17; F. M. Cornford, 1957, pp. 1 - 123).

The work of F. M. Cornford (1957; 1991), J. E Harrison (1908), Gilbert Murray (2004) and A. B. Cook (1925) is germane to a from-religion-to-philosophy claim of this chapter as also too is ongoing reference to scholarly exegesis of Derveni Papyrus research now becoming available, which research is used to build upon and further elucidate the contributions of those earlier mentioned opening paragraph scholars. This earlier group of researchers made connections between the voluminous work of J. G. Fraser (1925) and the sociological theories of Emile Durkheim (1915). Cornford linked Durkheim’s explanation of so-called collective representations (Durkheim, 1898, p. 17 ff.; 1915, pp. 15 - 17, 435) with Fraser’s explanation that magic, religion, and Science are inextricably interwoven (Fraser, 1925, pp. 56, 711, 713) thus allowing interpretation of some

Presocratic fragments in a new light. Fraser generally argued that society had progressed from magic through religion to Science and he explored an emergence of soul from nature (Fraser, 1925, pp. 178 - 189, 667 - 691). Durkheim had put a view that society's collective representations, its shared social constructs, exist apart from individual representations. These collective representations, as opposed to and distinct from individual representations, are shared mental constructs taken up from such various entities as religion, morphology, morality, and economics common to a group. They are said to depend, *inter alia*, on how the sharing group was founded and organised, the time and space of the sharing group, and intergenerational transfer of ideas and praxis. They "are not abstractions which have a reality only in particular consciousnesses, but they are as concrete representations as an individual could form of his own personal environment: they correspond to the way in which this very special being, society, considers the things of its own proper experience" (Durkheim, 1915, p. 435).

By virtue of these collective and individual representations mankind becomes a double.

There are two beings in him: an individual being, which has its foundation in the organism and the circle of whose activities is therefore strictly limited, and a social being which represents the highest reality in the intellectual and moral order that we can know by observation - I mean society. This duality of our nature has as its consequence in the practical order, the irreducibility of a moral ideal to a utilitarian motive, and in the order of thought, the irreducibility of reason to individual experience. (Durkheim, 1915, p. 16).

Cornford's suggestion that the Greek flowering had its origins in a more primitive and savage Greece might be considered a little iconoclastic. Nonetheless, I propose that a general notion consistent with the Cornford-Hamilton-Murray-Fraser-Durkheim amalgam of ideas is sound, namely, that before an emergence of human consciousness of tribal collective representation as something different from individual self, it makes little sense to distinguish custom, that is, *nomos*, from nature, that is *physis*, but that first consciousness of collective representation begot first consciousness of mankind's so-called separation from nature. Cornford's claim is that the early forms of speculative and practical philosophy are particular identifiable states of human consciousness that originated in, and emerged from, humankind's necessary attachment to habitat, community and tribal place.

In the Fraser *et al* context outlined in the preceding paragraph, mankind's awareness of their so-called separation from nature emerged when, with the development of human

Ongoing Application of Cambridge Ritualist Ideas

Brutus (2012) draws on Fraser (1925), Cornford (1912/2009), and Harrison (1908) in his discussion of the emergence of religion from magic and ritual, animal sacrifice, totem dance, initiation procedures and belief in the supernatural and surmises an escape of philosophy from religion (Brutus, 2012, p. 184).

Brutus grounds his work in the methodological tradition of Max Müller (1882, 2010), James (1902, 2009) and Brown (1991) and the revival of their methodology by Rifkin (2009). Rifkin analyses empathy and takes a psychological, biological and philosophical approach to questions of faith versus religion, truth versus reality, and empathy and altruism to derive a "distributed capitalism" (Rifkin, 2009, pp. 512 - 553) in which global empathy may help to solve social problems like climate change (sic.). Part of his analysis is based on a study of communication and energy development from hunter gatherer times to the beginning of the twenty first century. Max Müller, James and Brown respectively, whether, in discussion of natural, physical, anthropological and/or psychological religion, or biological and psychological causes of religious experience, or biological, psychological and anthropological causes of universals unique to humans, all take an analytical and empirical approach to their subjects.

settlements, *nomos* and *physis* became distinguishable. I subsequently employ the idea of a *nomos-physis* divide originating in nature to partly explain traces of an Ethics and Science of place theme in both Plato and Aristotle. I employ it in full recognition that when examined more widely, and from within philosophy and literary criticism (Ackerman, 1987, pp. 231 - 235; 2002, pp. 159 - 189; Bloom, 1968a, pp. xiv - xx; A.

Robinson, 2002, pp. 1 - 11), and other discipline perspectives like anthropology (Kuper, 1988, pp. 105 - 151), Cornford and Frazer's wider scholarship is contested. Taken only to make a point of a *physis-nomos* divide, the Cornford *et al* amalgam, I think, stands to reason, and is not a troublesome referent. Scholars continue to find interest in questions of a *physis-nomos* divide in Presocratic times (Gagarin, 2002, pp. 63 - 78; Ostwald, 1990, pp. 293 - 306 #693; Waterfield, 2009, pp. 205 - 299) and others continue to adduce Cornford and Fraser to development of their projects as the accompanying box on page 64 reveals.

In bringing a sociological perspective to interpretation of Presocratic fragments Cornford posits that the period from the centuries of Anaximander (BC 610 - 546 and Pythagoras (born 571/570) down to the arrival of atomism (BC 460) was, in a more general sense, a time of transition from religion to philosophy. This period contains the rich cascade of cosmogonies and cosmologies from Thales to Democritus already discussed in Tables 3 and 4 respectively on pages 39 and 46 and their related texts. In the same period soul as a construct progressed from Orphic mystery to a clearly specified presence as Pythagorean number (F. M. Cornford, 1991, pp. 124 - 242). The

progress of a soul construct from Dionysius to an Orphic understanding, and on to the Pythagoreans, might be traced through some of the Presocratic fragments, and from references to it in Plato.

For example the old cycle of reincarnation associated with Dionysus, although on the



Note: Triptolemus standing between Demeter and Persephone receives grain seeds (receives the knowledge of agriculture) from Demeter. The so-called Great Eleusinian Relief sculptured in marble circa BC 450 - 425 was found at the sanctuary of Demeter at Eleusis, and this particular image, chosen for ease of viewing, catches a plaster Roman copy taken circa BC 27–AD 14 of the original now held in the Archaeological Museum of Athens. The picture provides clearer detail than available pictures of the original however its depictions of hair style and drapery, which differ from those of the original, reflect an influence of Augustan art. There is contestation about what is actually being handed over.

Source: Cropped by Ian Eddington from *Fragments of a Roman Copy set in a Plaster Cast of the Original Greek Marble Relief. Fragment from the Eleusinian Relief (14.130.9)*. In *Heilbrunn Timeline of Art History*. New York: The Metropolitan Museum of Art. (Metropolitan Museum of Modern Art, 2006).

verge of being a cycle of religious salvation, appears to have been an earthly affair associated with the cycle of the seasons. The Dionysian cycle belongs to the mysteries, prior to Olympian understandings, the mystery of Demeter and Persephone being an example of personification of nature's cycle of death and rebirth (Willoughby, 2003, p. 26).

Only after Homer did Dionysus obtain a seat on Olympus (J. E. Harrison, 1905, pp. 46 - 48) and according to Herrero de Jáuregui (2010, p. 14)

Orphism, classically reconstructed, emerges from a reform of Dionysian orgy and ecstasy redefined to include a personal eschatology predicated on the soul's imprisonment in body and its pilgrimage back from whence it came through cycles of reincarnation, in atonement for the Titan's outrage against Dionysus, son of Zeus and Persephone, the descendants of the Titans themselves being mortals formed from the dust of the Titans after Zeus destroyed them in anger at their murder of Dionysus.

Those following the reformed rituals and practising the taboos became known as Orphics. De Jáuregui, by

his claim of a presence of personal eschatology in reforming Dionysian cult behaviour, provides one possible explanation of reincarnation's morphing from earthly cycles to heavenly cycles.

The Dionysian soul however endlessly came and went from the underworld to daylight and back again without release. Under this Dionysian system the soul had not fallen, as Empedocles (DK 31B114-124) likely says it did, from the light of the starry heavens, whereupon it is subsequently breathed into animate body as reported and refuted in *De Anima* 410b30 (Aristotle, 1907, p. 42, here at 410b15-16; 1952b, p. 160; 1957a) and clothed in flesh as Empedocles (DK 31B100, 31B126) again likely says is the case. Its subsequent Orphic imprisonment in flesh is likely depicted as a result of something done in the place from whence it came *Cratylus* 400c (Plato, 1921a; 1952q, pp. 93-94). To escape its bodily prison, the soul, a fallen god, must endure ongoing cycles of reincarnation from man, to underworld, to plant, to beast, to man and on and on for 10,000 solar years and after three of such cycles it is set to enter once again its heavenly abode (J. E. Harrison, 1908, p. 515, Empedocles DK 31B515-517; Plato, 1925e; 1952o, p. 125). Thus is given a second explanation of morphing from earthly cycle to heavenly cycle. Janko (2004) in convincing detail explains how Strasbourg Papyrus lines and earlier known fragments of Empedocles fit together, line 233 of the Strasbourg Papyrus corresponding with Empedocles's line DK 31B17.1. Janko's reconstruction of lines 233-264 of the papyrus (R. Janko, 2004, pp. 14 - 22) reveals an Empedocles able to include reasoned physics of the four elements with poetic interpretations of reincarnation in one "body of writing, he being "a magician, a poet and a scientist too" (ibid., p. 11).

Cornford (1957, p. 178), following Schultz (1908, p. 68), writes that the Orphic cycle is

<p style="text-align: center;">Strasbourg Papyrus</p> <p>A papyrus dated to the first century AD containing lines identified by Alan Martin in 1992 as belonging to <i>On Nature</i>, a poem by Empedocles (born c. 490 BC), and now known as <i>P. Strasb. Gr. Inv. 1665-6</i>. A namesake Strasbourg Papyrus catalogued Gr. 254 and different in content, subject and era also exists but has no relevance in this enquiry.</p>
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a superimposition of a Babylonian astral cycle onto the existing earthly cycles under a great astrological year of 10,000 solar years which great year in Babylonian astronomy was the time taken for the heavenly bodies to complete their cycles and return to their same relative positions and ordered places.

He thus in part provides a third explanation of reincarnation's morphing from earthly to heavenly cycle.

Even so, although just how, under Orphism, soul became immortal, of heavenly descent and immutable remains uncertain, yet with Orphism came a preoccupation with

Sparagmos

Side A: Two Dancing Maenads



Note: “Red beard wagging briskly, both feet off the ground, the satyr on side A leaps upon the maenad ... She holds her thyrsos in one hand and extends the other toward Dionysos, begging for help, but the god merely stands and watches” (H. A. Shapiro, 2014, p. 48).

Side B: Dionysos with Satyr Attacking a Maenad



Note: “Two maenads are dancing in an ecstatic trance ... Here, one carries a deer on her shoulders and the other dangles a young lion by its tail. The moment is approaching the *sparagmos*, the climactic act of communion with the god, when they will tear the animals to pieces with their bare hands and eat the raw flesh” (H. A. Shapiro, 2014, p. 48).

Source: Photographs by Maria Daniels, of sides A and B of an Attic black-figure lekythos attributed to the Diosphos Painter in 1991 when the vase was then held by the University of Mississippi Museum. (Daniels, 1991).

human temperaments which spring from two permanent needs in human nature (F. M. Cornford, 1957, pp. v - vi). Such a leap does not take him too far from Fraser, nor Durkheim’s double man.

salvation of individual soul. Plato reports in *Phaedo* 108 and *The Republic* II, 365 – 367 that Orphics might labour long and hard for salvation through purifying ritual and abstinence (Plato, 1952r, pp. 314 – 315; 1952t, p. 247; 1969a, 1988) and could not so easily find god through Dionysian orgy and ecstasy, a shame some might think—except that rituals were originally quite terrible (H. A. Shapiro, 2014, p. 48). Apparently, genuine practise of practical philosophy is important for the effectiveness of telestic ritual. In turn, a spent Orphism was to be rekindled anew by Pythagoreans and their ways of life, in which purification of philosophy replaced washing away of sin via ritual.

In general support for his religion-to-philosophy argument Cornford finds that, not only do the theogony of Hesiod’s gods and the Olympian gods of Homer lurk behind Thales and the transition to atomism but also, the mysticism of Dionysus and Orpheus lurks behind Pythagoras and the transition to human soul as number in nature. Moreover his opinion is that these two separate trails of enquiry into the essential stuff of nature, the scientific and the mystical, are but different expressions of a one and same human consciousness, and that they reflect nothing more than a presence of two

In specific argument of his case Cornford (1957, pp. 1 - 123) makes a number of claims. First, the scientific transition to atomism is a development in which Olympian gods, governed as they were by a moral but uncaring fate, that is, *moira*, are replaced by an essential substance (*atomi*) governed by necessity and chance. Secondly, the mystical tradition of soul and mind can be understood as a transition from belief in a living reincarnated soul, to belief of its presence in nature in the form of numerical relationships existing there. Thirdly, that as a result of these developments, philosophy, encompassing Science and Ethics, when it broke from religion, carried with it preoccupations with three entities, namely *physis*, the nature of nature; god or spirit; and *psyche* or soul.

Cornford further argues that this transition of human consciousness from religion to philosophy is in turn but one link in a chain of development which stretches back to the very emergence of mankind's existence as a social animal. His explanation (1957, pp 1-127) of a long primitive history which carried humanity forward to a flowering of atomism, and a so-called escape of human soul from nature, provides a basis for his transition theory which in turn provides a backdrop for interpretation of Plato's subsequent return to the classical Ethics of Homer from which he extracted an Ethics to inform his *Republic*. Cornford's insights also illuminate a theme of place in Aristotle's Ethics, which I discuss in Chapter 3.

In essence Cornford's argument is that the *physis*, the nature of nature, that essential matter which constitutes all the beings of the world, and which the Ionians sought to understand and specify, is by other names the life substance, the soul, of mystic understanding, reborn as scientific understanding, the rebirth being occasioned by the arriving irrelevance of personified Greek gods, removed to Olympus, where even they were subject to the power of fate. The *physis*, that which in Ionic Science cascades through a number of states and names in its journey from the water or moisture named by Thales to the dead atoms of Democritus, and which in the Pythagorean system is known as soul and still later as idea, has its genesis in the first social consciousness and religious stirrings of primitive society. Its origin is the other-than-me feeling which is

coeval with the first stirrings of herd or tribe instinct engendered through totem ritual and frenzy. In particular, this other-than-me feeling is both empowering as a tribal spirit of kin, and moderating in that the group self emerges as something over and above the individual, who must now find her or his place within the rule of the group. This sense of self and group is the first stirring of soul. Again Harrison, Fraser and Durkheim are not far away. Although Cornford does not say it, it is as though, by virtue of ritual ecstasy and frenzy, soul may have made its way from nature through a realised colonisation of human body and from there to its own release into immortality.

In particular, the totem of animals and plants is a totem of kinship and place, a kinship which unites a tribe with an area from which it derives its sustenance, and in this relationship of self to place and area, and to group instinct, is found the very beginnings of morality, understood as an expression of sense of place and of social order required for efficient provisioning purposes. Interpreted thus, morality, operationalised through its attendant social mores, is an expression and extension of nature.

The totem area is also, in Cornford's view, the origin of the power of fate condition, *moira*, and later more or morality, which afflicts Homer's Olympian gods. To tempt fate was to go outside the established social mores which grew out of the sustaining totem area, or to invade another tribe's place. Fate originally announced itself all-powerful when the vicissitudes of environmental change in the sustaining totem area continually overwhelmed the increasingly formalised and ritualised group of totem gods themselves. They, the totem gods, before the Greek gods of Olympus, had no power over fate and they also, again like the Greek gods after them, became increasingly irrelevant. What remained were a morality of place and an out of body experience of soul, later *psyche*. Herein lies an early sense of an idea of place and order and intellect like that caught by received translations of Pythagorean *cosmos* or *kosmos* which partly informs both the Ethics and morality of classical Greece in Homer's time, and the first stirrings of political philosophy in Plato's dialogues—and of cosmos more later beginning on page 107. This original subjugation of individual body to place and soul, reborn in many

forms, led to both scientific and mystic explanations of *physis*, and as mentioned, is the manifestation of two essential streams of temperament in humankind.

In summary, so far I have articulated Step 1 of the three steps in this chapter except for closure on practical Ethics which is postponed until Step 3. That is, I have supported a

<p style="text-align: center;">Step 1</p> <p>Step 1 examines a proposition that three divisions of philosophy were extant at the time of Plato's life and that the emergence of the three divisions is coeval with a general transition from religion to philosophy.</p>

view that an emergence of three divisions of philosophy extant at the time of Plato's life is coeval with a general transition from religion to philosophy. I have also begun explanations by which it can be understood that virtue is some kind of knowledge, that reason is divine, that

Science is theoretical philosophy, and Ethics is practical philosophy. Taken together, these understandings are essential components of a knowledge base which informs ongoing articulation and final demonstration of the Thesis Proposition Statements. This articulation of Step 1 is predicated on elucidation of Cambridge Ritualist theory about origins of soul and morality, content of translated works of classical writers, engagement with works by noted Modern and Post-Modern eras scholars and interpretation of Presocratic fragments, and from it may be assembled a list of specific understandings which might serve as a tentative backdrop for continuing discussion about Science, Ethics and Polis in Presocratic times. First, both Pythagorean soul as number, or Ionian *physis*, whether it be after Thales moisture, or after Leucippus' atoms, are likely but differing explanations of the essential stuff of nature, which explanations themselves are but likely differing expressions of the one human consciousness. Secondly, both explanations might be respectively traced back to a common origin in totem ritual and place. Thirdly, the basis and essence of this origin in common is possibly composed of awareness of group soul, and restraint and obedience and cultural structure needed to win sustenance and survival from that totem area and place. Fourthly, as a consequence, at the time of their first appearances, soul and morality are, in part, extensions of laws of nature; that is, soul and morality are principles of natural law predicated on a necessity that living beings must be nourished beings.

Discussion of P(p)olis, Cult Religion and a Journey from Religion to Philosophy Continues

To continue, recent research into Strasbourg Papyrus and Orphic Gold Tablet content,

Behind the Text: Complementary Discussion of Methods by which Bernabé Claims Plato Amends Orphism to his Needs	
(1) omission <i>Timaeus</i> 40d	<p>Bernabé's exegesis is finely reasoned there being many ifs and buts about the simplicity of linkages constructed below for explanatory purposes. Lamb mentions the ironical nature of the statement "Concerning the other divinities, to discover and declare their origin is too great a task for us, and we must trust to those who have declared it aforesaid, they being, as they affirmed, descendants of gods and knowing well, no doubt, their own forefathers" <i>Timaeus</i> 40d, note 2, (Plato, 1903d)</p> <p>The 'Orphic' order is Time → Aether and Chaos in union → Cosmic Egg → Phanes the triple god, from the hermaphroditic Cosmic Egg and his noetic triple night associates Nights 1, 2 and 3 → Heaven → Earth → children of Heaven and Earth (Pantel & Zaidman, 2002, p. 158). Mead (2010, pp. 58 - 60) provides a more detailed outline.</p> <p>Plato's order is Coupling of Ge and Uranus → Oceanus and Tethys → the children of Oceanus and Tethys, Phorkys, Cronos, Rhea, and their progeny → Zeus and Hera from Cronos and Rhea → "all those who are, as we know, called their brethren; and of these again, other descendants" <i>Timaeus</i> 41e (Plato, 1903d; 1952w, p. 452)</p>
(2) addition <i>Laws</i> 715e	<p>Bury admits the 'probably' of the 'tradition' referred to by Plato as "probably Orphic, quoted thus by the scholiast: Ζεὺς ἀρχή, Ζεὺς μέσσα, Διὸς δ' ἐκ πάντα τέτυκται" <i>Timaeus</i> 715e, note 1 (Plato, 1967/68a, n. p.).</p>
(3) modification <i>Cratylus</i> 400c	<p>At <i>Cratylus</i> 400a Hermogenes agrees that the soul "holds and carries the whole nature of the body" <i>Cratylus</i> 400a (Plato, 1921a; 1952q, p. 93) and accepts the correctness of "Anaxagoras's doctrine that it is mind or soul which orders and holds the nature of all things" (ibid.)</p> <p>Then at <i>Cratylus</i> 400b comes the word letter-swap play between <i>σῶμα</i> (body) an <i>σῆμα</i> (tomb) which sets up the modification to come:</p> <p>Hermogenes Now what shall we say about the next word? Socrates You mean "body" (<i>σῶμα</i>)? Hermogenes Yes. Socrates I think this admits of many explanations, if a little, even very little, change is made; for some say it is the tomb (<i>σῆμα</i>) of the soul <i>Cratylus</i> 400b (Plato, 1921a; 1952q, p. 93)</p> <p>The modification from tomb to prison or safe occurs at <i>Cratylus</i> 400c:</p> <p>Socrates [continuing] [400c] their notion being that the soul is buried in the present life; and again, because by its means the soul gives any signs which it gives, it is for this reason also properly called "sign" (<i>σῆμα</i>). But I think it most likely that the Orphic poets gave this name, with the idea that the soul is undergoing punishment for something; they think it has the body as an enclosure to keep it safe, like a prison, and this is, as the name itself denotes, the safe (<i>σῶμα</i>) for the soul, until the penalty is paid, and not even a letter needs to be changed <i>Cratylus</i> 400c (Plato, 1921a; 1952q, p. 93).</p>

found for example in that Derveni Papyrus research discussed earlier on page 29, also provides opportunities for reassessment of tenets of received theory including those germane to P(p)olis religion and cults, and religion-to-philosophy transitions, and before beginning articulation of Step 2 of this chapter on page 84, I search amongst such recent contributions to P(P)olis and cult religion, and religion to philosophy research, *inter alia*, to reassess the validity and appropriateness of this enquiry's use of earlier findings in these fields. Consequently, but now in the light of some of these new contributions, both

P(p)olis religion construct and Cornford's idea of progress of soul from Dionysian understandings to Orphic and Pythagorean understandings are again articulated through

references to soul in Presocratic fragments, from references to reincarnation, whether allegorical or otherwise, in Plato’s now called eschatological myths (Annas, 1982; Ward, 2002)—*Phaedrus* 246 – 254, *Republic* 614 – 621, *Gorgias* 523e – 527, *Phaedo* 70c, 81c-e, 106e – 115a, (Plato, 1903, 1925, 1952a, 1952b, 1952c, 1952d, 1967, 1988), or in other works—*Meno* 81, *Cratylus* 400, *Timaeus*, 41d ff., 90 – 91, *Laws* 870d-e,

Behind the Text: Complementary Discussion of Methods by which Bernabé Claims Plato Amends Orphism to his Needs (Continued)	
(4) recontextualisation <i>Meno</i> 81a	Lamb comments that in the quotation πένθος (“affliction”) in mystic language means something like “fall” or “sin” and speculates that the lines of Plato’s quote are probably from one of Pindar’s Dirges (Bergk, fr. 133). Jowett makes no comment. Plato earlier, at <i>Meno</i> 81a, had Socrates link Pindar with certain “priests and priestesses” (Plato, 1952l, pp. 179 - 180; 1967c). Given Plato’s expressed concerns about tales and myth in sophistry and poetry, for example <i>Timaeus</i> 22d (Plato, 1925h; 1952w, p. 444), <i>The Republic</i> II 380c3 and III 394b-c (Plato, 1952r, pp. 322, 329; 1969a), <i>Philebus</i> 14a3-5 (Plato, 1873; 1952p, p. 610), <i>Laws</i> X 887 – 888 (Plato, 1952j, p. 759; 1967/68c), <i>Phaedrus</i> 244a (Plato, 1925e; 1952o, p. 123) and <i>Ion</i> 534 – 536 (Plato, 1925c; 1952s, pp. 144 - 145) especially their so-tabbed inspired madness and antithesis of reason dimensions, and examined in the light of Janko’s earlier cover-up argument discussed on page 33—meaning in a Janko context, Plato’s possible stealthy jettisoning of the earlier poets and their increasingly obsolescent theogonies—Plato’s naming of Pindar may be less enigmatic than it is shrewd and clever, even in the sense that Aristotle later categorises cleverness. For example, Pindar was well connected politically, (S. G. Miller, 2000, p. 281), the gods in his poetry are traditional, and revered (Swanson, 1974, pp. xiv - xlvi), he keeps shy of Science, the eclipse being explained as a potent rather than a physical phenomenon (Fotheringham, 1920, pp. 189 - 191; Pindar, 1915, pp. 547 - 549, Pindar’s Paean 9), his revisionism of myths is respectful of the gods, for example as in <i>Pythian Ode</i> 9, where he downplays Apollo’s rape of Cyrene (J. Sandys, 1915, pp. 273 - 285), and monotheism is difficult to discern in his works (M. L. West, 2002, p. 100). Such speculation notwithstanding, Plato’s on the face of it antipathy towards poetry is contested (Doniger O’Flaherty, 1998, pp. 25 - 44; Gonzalez, 2011, pp. 93 - 110; Green, 1918, p. 1; G. Most, 2011, pp. 1 - 20)
(5) interpretation <i>Phaedo</i> 62d	Earlier at <i>Phaedo</i> 62b (1952t, p. 222; 1966c) Plato had introduced the body-prison metaphor in association with ancient teachings which introduction might prompt the initiated to find hidden meanings in the words which, on the surface, are couched in terms of piety towards the gods of P(p)olis religion.

872e, 881a, 904 (Plato, 1903c, 1921a, 1925h, 1952c, 1952j, 1952l, 1952w, 1967c, 1967/68a, 1974), from exegeses of cult religion, Science-religion conflict and papyrological and archaeological information (Graf & Johnston, 2007/2013; R. Janko, 1997, 2001, 2002, 2004, 2005; Osek, 2013) and from other relevant works subsequently cited with these.

To wit: Ficino (AD 1433 – 1499), in his attempt to reconcile Plato with Christianity, holds that Plato

speaks allegorically of reincarnation, not literally (2006, 17.3-4) and Hobbler (1917) discusses a meeting attended by Ficino and such notables as Lorenzo and Giuliano de Medici, Leon Batista Alberti and others, called, *inter alia*, “to prove that in the Aeneid are to be found, concealed in allegory, all the Christian doctrine, as well as Platonic, which to them were one and the same” (ibid., p. 29). Elsewhere (ibid., p. 48) Hobbler reports Mirandola’s use of allegory to bring Plato’s philosophy into harmony with the

teaching of Moses and Bernabé's examination of Plato's engagement with Orphic and

Pythagorean myth suggests that, like Ficino, Plato himself was ideas-messaging from a particular perspective, in this case, his own project of reconstructing myths. Thus, authenticating the progress of the soul from Dionysus to Orphic and Pythagorean understandings through exegetic interpretation of Plato's eschatological myths is not without complications engendered of its own complexity. Bernabé (2011; 2013), in his analysis of Plato's engagement with Orphism, depicts Plato as neither greatly nor little indebted to Orpheus, but rather one who drew significantly from Orphism subject to a need sufficient for his own purpose of replacing Orphic initiation and ritual with the contemplative rigour

Behind the Text: Complementary Discussion of Methods by which Bernabé Claims Plato Amends Orphism to his Needs (Continued)	
<p>(6) etymology Republic 364e</p>	<p>Bushel ὄμαδον, literally. noise, hubbub, babel, [is] here contemptuous. Jowett translates ὄμαδον as “host” at 364 in <i>The Republic</i> (1952r, p. 313; 1969a).</p> <p><u>βίβλων</u> -- <u>ἐγγόνων</u>. The allusion is to Orphic liturgies. Musaeus was the son of Selene, according to Philochorus quoted by the Scholiast on <i>Ar. Frogs</i> 1033: cf. <u>φαισφόρου</u> <u>ἔκγονε</u> <u>Μήνηε</u> <u>Μουσαίῃ</u> in <i>Abel Orphic. Fr.</i> 4. Orpheus' mother was the Muse Calliope (Suidas s.v. <u>Ὀρφεύς</u>). There is no solid basis for the old view that <u>ἔκγονος</u> means ‘son,’ and <u>ἐγγονος</u> ‘grandson.’ The etymological form is <u>ἔκγονος</u>, but <u>ἐκ-</u> was often assimilated to <u>ἐγ-</u> before <u>γ</u> during the 4th century B.C., particularly in this word: cf. also <u>ἐγγειτόνων</u> etc. on Inscriptions. Elsewhere in the <i>Republic</i> <u>ἔκγονος</u> is the regular spelling.</p> <p><u>καθ' ἃς</u> <u>θηπολοῦσιν</u>: sacrificial liturgies. A <u>θηπολικόν</u> is mentioned by Suidas (s.v. <u>Ὀρφεύς</u>) as one of the ‘works’ of Orpheus: see also Lobeck <i>Aglaoph.</i> p. 371 and Rohde <i>Psyche</i> II pp. 112, 113 notes <u>πόλεις</u>; as for instance when Epimenides the Cretan purified Athens (see Grote III 85—89). Plato may be thinking of this event, which in defiance of chronology he placed ten years before the Persian wars (<i>Laws</i> 642 D, E). Cf. also infra 366 A and <i>Laws</i> 909 B.</p> <p><u>λύσεις</u> -- <u>καθαρμοί</u>: <u>λύσεις</u> means ‘modes of absolution’ (Lobeck <i>Aglaoph.</i> p. 810): cf. 366 A <u>οἱ λύσοι θεοί</u> and Arist. <i>Pol.</i> B 4 1262. The Scholium on <i>Ar. Frogs</i> 1033 contains the remark: <u>οὗτος</u> (i.e. Musaeus) <u>δὲ παραλύσεις καὶ τελετάς καὶ καθαρμοὺς συντέθεικεν</u>. For <u>παραλύσεις</u> Blaydes proposes <u>λύσεις</u>, while Rutherford reads <u>περὶ λύσεις</u> (apparently with the Ravenna Codex), inserting also on his own conjecture <u>ποιήματα</u> after <u>συντέθεικεν</u>. I have no doubt that the Scholiast wrote <u>παραλύσεις</u>: ‘besides Absolutions, he has composed also <u>τελεταί</u> and <u>καθαρμοί</u>.’ <u>καθαρμοί</u> formed a distinct class of religious literature, and were written by Epimenides, Empedocles, and others: see Grote I p. 27 note 3.</p> <p><u>παιδιάς ἡδονῶν</u>: ‘pleasures of play.’ <u>παιδιάς</u> depends on <u>ἡδονῶν</u>, and is here used abstractly: cf. <i>Thuc.</i> III 38. 7 <u>ἀκοῆς ἡδονῆ</u> and (with Schneider) <i>Paus.</i> I 21. 7 <u>θέας ἡδονῆν</u>. Madvig would eject <u>ἡδονῶν</u>, but without <u>ἡδονῶν</u> Plato would probably have written <u>παιδιῶν</u> (cf. <i>Laws</i> 829 B): other suggestions, such as <u>καὶ παιδιάς καὶ ἡδονῶν</u>, or <u>καὶ παιδιάς διὰ ἡδονῶν</u>, or <u>καὶ παιδιῶν καὶ ἡδονῶν</u> are open to graver objection. For <u>παίξεν</u> and the like in connexion with religious celebrations. Stallbaum cites <i>Hdt.</i> IX 11 <u>Ἰακίνθιά τε ἄγετε καὶ παίζετε</u> and VIII 99 <u>ἐν θυσίῃσι τε καὶ εὐπαθείῃσι</u>: add <i>Phaedr.</i> 276 B, <i>Laws</i> 666 B. Plato's point is that atonement if it is made a pleasure and not a penance sets a premium on sin.</p>
<p>(7) mythology Phaedrus 246a</p>	<p>Having introduced the charioteer metaphor Plato proceeds to exegete the older questions of mortality and immortality through it.</p>

and moral behaviour of the philosophic life as the key to an eternal happiness, and even audience with, and life amongst, the gods Baracat (2013, p. 1).

On such a reading, ideas found in the content of some Orphic gold tablets, early tablets being in use during Plato's lifetime and so helpful in present scholarship, appear compatible with Plato's dialoguing, a good example being Plato's replacement of a dead-in-body soul with an alive-in-body soul, and a complementary swap of the charioteer myth of the *Phaedrus* for the original guilt of the soul generated by the outrage of the Titans on Dionysus (ibid., p. 3). Baracat acknowledges Bernabé's revelation that Plato's methods of amending Orphism to his needs involve (1) omission, for example in *Timaeus* 40d where, for dialogue purposes, Plato downgrades Night relative to its position in Orpheus' theogony, (2) addition, for example where Plato, at *Laws* 715, describes Zeus as the "beginning, middle, and end of all things", (Plato, 1967/68a) or "the beginning, the end, and the center of all things" (Plato, 1967/68a) the words "the end" are additions, (3) modification, for example in *Cratylus* 400c (Plato, 1921a, 1952q) where Plato modifies the body/grave construct of 400b to a body/prison construct, (4) recontextualisation, for example in *Meno* 81a (Plato, 1952l, 1967c) where Plato begins an implication that Orphic transmigration augments his knowledge as *anamnesis*, (5) interpretation of enigmas, for example in *Phaedo* 62d (Plato, 1952t, 1966c), where Plato employs *aínigma*, (6) etymology, for example his choice of appropriate word meanings in *Republic* 364e (Plato, 1952r, 1969a), and (7) mythology, for example in *Phaedrus* 246a (Plato, 1925e; 1952o, p. 124) where Plato manipulates Orphic knowledge to the needs of the philosophical and moral system he is developing by introducing his charioteer metaphor.

Some of these methods share a common technique, namely, Plato's denotation of Orphic material as a sacred tale without directly naming Orpheus. Bernabé's exegesis of Plato's technique is finely drawn and the box running through pages 71 to 73 provides illustrative material germane to, and explorative of, Bernabé's work. Box content, except where otherwise cited, was assembled from comments and explanations about Platonic word usage found in translations by Lamb and Bury housed in both the Perseus and Loeb Classical Libraries. Again tracing progress of the soul from Dionysus to Orphic and Pythagorean understandings through exegesis of Plato's dialogical references to reincarnation itself remains a complex matter.

Orphic gold tablet research provides further information about a plethora of wonderings including the manner in which earthly reincarnation cycles might have become heavenly cycles, about frictional coexistence of P(p)olis and cult religion and about transition from religion to philosophy. These so-called Orphic gold tablets, hereafter also called gold tablets, plates, sheets, leaves, foil or lamellae consist mostly of small beatings of inscribed gold foil varying in size “between 8 and 4 cm. wide and 3 to 1 cm. long” (Bernabé & Jiménez San Cristóbal, 2008, p. 2) found, since 1879, in burial sites mainly at Thurii and Hipponium in Southern Italy but extending northwards to Rome, at Thessaly and Crete in Greece but extending northwards to Macedonia (Graf & Johnston, 2007/2013, p. 1). Wendy Watkins (ibid., p. 2) provides a location map of so-called Orphic tablet discoveries, no tablets having been found in Attica which was once a region of the Eleusinian mysteries (Bernabé & Jiménez San Cristóbal, 2008, p. 4). In some cases inscriptions are on beaten silver. “Almost six hundred years ... [separate] the oldest, ... [datable to] c. 400 B.C., [from] the most recent, ... datable to 260 A.D ... [with] the majority ... [dating] from between the 4th and 3rd centuries B.C.” (ibid., p. 2, my square brackets).

According to Bernabé & Jiménez San Cristóbal, the tablets provide direct insights into early Orphic religious belief, ritual, and literature and the influence of these on “some Presocratic philosophers, lyric poets like Pindar, Plato and then the Neoplatonists” (ibid., p. 1), a view partly differing, in respect of Pindar at least, from that held by Herrero de Jáuregui who pronounces Orphic salvation religion “completely inconsistent with the image of Olympian religion transmitted in the *Iliad*, in Pindar’s odes and in Aeschylus’ tragedies” (Herrero de Jáuregui, 2010, p. 1) where death is an inseparable boundary that distinguishes mortals from gods. According to Herrero de Jáuregui “there is no proof of any Orphic *thiasos* which would have blurred the boundaries of the family, and even less the *polis*, in sharp contrast with the Pythagoreans” (ibid., p. 29). He adduces Burkett to his urging that there was certainly no *collegium* of itinerant Orphic priests—there being guild-like organisations at best, he says—nor cities of initiates as he claims Plato suggests (ibid., p. 29), the *bacchoi* themselves constituting but an imaginary spiritual community (ibid., p. 29). Herrero de Jáuregui’s use of the Latin *collegium* is

troublesome as in time guilds too became joined-by-law groups, that is, groups qualifying as *collegia*.

Such gold tablets, called Pythagorean by Zuntz, Orphic by Bernabé, Ghidini and Jiménez San Cristóbal, so-called Orphic by Carratelli and Edmonds, Bacchic by Graf and Johnston, and probably Bacchic-Orphic by Tzifopoulos (Osek, 2013, p. p. 73), have been found in:

a limited number of graves ...[amongst] the thousands that have been excavated, [indicating] that the users of the tablets were a minority group, with a certain unity of beliefs, probably initiates, or followers of a religious movement which...we must now, without hesitation, call “Orphic”, and convinced that a special destiny was reserved for them in the beyond. (Bernabé & Jiménez San Cristóbal, 2008, p. 2)

Edmonds makes a different claim:

Recently, Burkett and others have shown that Orphism was not a single unified Church, but is best understood as a collection of diverse counter-cultural religious movements whose major proponents were itinerant “craftsmen” of purification who provided services for a wide variety of customers. (R. G. Edmonds, 1999, p. 37)

There is also contested discussion of a possible Egyptian connection with the content of a so-called Orphic *hieros-logos* or secret account of instructions and answers postulated to help ensure passage to an afterlife, and a possible Egyptian origin of the idea of reincarnation which forms part of the Eleusinian Mysteries. Dousa (2010a, p. 125) discerns two approaches to explaining a possible Egyptian origin and emergence of so-called Orphic praxis, one based on a possibility of independent parallel happenings converging as a result of cultural exchange and intermingling, and another based on continuity and lineage finding an Egyptian connection possible but improbable (2010, pp. 120 - 164). Other origins are proposed. Tzifopoulos (2010, pp. 93 - 235) puts a case for a Cretan religious tradition of gold tablet funerary praxis. Griffith (2008, pp. xxix - xxxvi) allows a possibility that the Greeks acquired the immortality dimension of the doctrine of Elysium from Egypt via Homer who, in the *Odyssey* 4: 561 – 569 (Kline, 2014; A. T. Murray, 1927), allows that Menelaus will enjoy immortality in Elysium, and that subsequently an idea of immortality became enshrined in the mysteries of Demeter at Eleusis. In a separate contribution (2009, p. 134) Griffith says that the Greeks

acquired the reincarnation dimension of Pythagorean cult praxis from southern Italy. De Jáuregui (2010, pp. 271 - 290) explains his discerned consistency of gold tablet content by reasoning that it bespeaks the epic hero's glory (*kleos*) soteriologised, made immortal and immune from change in the cycles of reincarnation, thus finding the origins of Orphism largely a Greek affair. Obbink (2010, pp. 291 - 309) links gold text recitation and Greek epic poetry and deems Orphism a likely continuation of Greek tradition rather than a totally new and separate religion.

Prior to a renewal of interest in Orphism sparked by scholarship surrounding the Derveni Papyrus so-called Panorphic writers (Eisler, 1925; Gruppe, 1906; J. E. Harrison, 1908; Maass, 1895; Macchiore, 1930, 2003; McGahey, 1994; Nietzsche, 1909, 1999; Reinach, 1909, 1912) that is, those urging preconditions of Christianity existing in Orphic mysteries, were confronted with views expressed by Orpheosceptics (Brisson, 1985,

A Six Category Grouping of the So-Called Orphic Gold Tablets ⁽¹⁾	
Class	Class Description
A	Five rectangular tablets inscribed with the deification formulas ('pure from the pure', 'become a god', 'fallen in milk') in hexameter.
B	Twelve rectangular tablets inscribed with the 'child of Earth and starry Heaven' formula in hexameter.
C	One amulet, the so called 'great tablet' from Thurii, with a magical 'abracadabra': in it was wrapped the folded tablet A4.
D	Four leaf-shaped plates inscribed with the mystic names of Dionysus, Persephone, and Demeter; two of them contain 'fallen in milk' formula.
E	Five epistomia ⁽¹⁾ with the χαῖρε, 'hail', address to Persephone and Pluton: among them are leaf-shaped pieces.
F	Countless epistomia, including leaf-shaped pieces, with only the deceased's name or the word μύστης, 'initiate': only thirteen of them are edited.

Notes: (1) This classification is one "originated by Günther Zuntz (1971), improved by Yannis Z. Tzifopoulos (2010) and accepted by Radcliffe G. Edmonds III (2011)" (Osek, 2013, p. 74). (2) Epistomia = "The word *epistomion*/-a, not in LSJ, does not appear to have been an ancient one; usually the words "tablet," "lamella," or "leaf" are employed to describe the gold incised objects discovered in graves. The word *epistomion*, however, has become a technical term among Greek archaeologists, who have no problem identifying an object by this term, when during the excavation of a grave they come upon a very small, paper-thin gold band on the mouth or near the cranium of the deceased, likely employed for covering the mouth. Not all *epistomia* are incised, and the text of those incised may be just one word, or a text of sixteen lines. Shapes of these vary, although they tend to approximate the shape and the size of the mouth." (Y. Tzifopoulos, 2014, n. p., Footnote 1 of his Chapter)

Source: Adapted by Ian Eddington from page 74 of Osek, E. (2013). *Hermes Tablet (Nonnus D. 41. 343-44): An Allusion to the 'Orphic' Gold Leaves?* *Littera Antiqua*, 6, 73 - 104.

1995a; Dodds, 1951; Festugière, 1932; Festugière & Fabre, 1935; Linforth, 1941; Renan, 1866; Wilamowitz-Moellendorff, 1931)—those averse to attempts to detect Christian elements in their restorations of Orphism. Boulanger (1925) appears to mark a turning point between the two and Guthrie, who remains highly regarded and regularly cited, is cautious on the question but allows similarities (Guthrie, 1993, pp. 261 - 270). Herrero de Jáuregui (2010, p. 8) states that the question of the origins of Christianity

continues to be of interest to scholars, there being a drifting in focus away from precedence or lineage towards identification of commonalities and differences. Yet the precedence question remains of interest as a religious studies topic (Gordon, 1996/2012, pp. 1017 - 1018).

The Panorpic-Orpheosceptic divide itself, as a topic of interest, competes for scholarly attention with Orphism as an anomaly of ancient Greek religion which, as the earlier highlighted difference of opinion between Edmonds, and Bernabé and Jiménez San Cristóbal suggests, is in renewed polemical and reasoned contestation. Both of these topics of interest, the Orphic origins of Christianity, and Orphism as an offshoot of classical Greek religion, are sometimes interwoven in scholarship. For example Edmonds (1999) argues that the cardinal myth of Orpheus, the Zagreus Myth, is a flawed construct by virtue of its being:

a modern fabrication dependent upon Christian models that reconstruct the fragmentary evidence in terms of a unified “Orphic” church, an almost Christian religion with dogma based on a central myth—specifically, salvation from original sin through the death and resurrection of the suffering god. (R. G. Edmonds, 1999, p. 36)

The Zagreus myth—Edmonds follows (Lobeck, 1829/61) who follows the late 4th century AD poet Nonnus or Nonnos (Nonnos, 1940a, p. 225) in calling the first-born Dionysus Zagreus —expresses the story of Dionysus whom the so-called Orphics worshipped. Morford and Lenardon (2003, p. 274) provide a different version of the myth.

Opening Lines Caecilia Secundina's Tablet
She comes from the Pure, Pure Queen of those below
And Eukles and Eubouleus. Child of Zeus, receive here the armour
Of Memory, ('tis a gift songful among men)
Thou Caecilia Secundina, (armour) in due rite to avert evil for ever.

Source: Harrison, J. E. (1908). *Prolegomena to the Study of Greek Religion*. (p. 586). Cambridge/London: Cambridge University Press/C, J. Clay and Sons. Harrison clearly demonstrates Secundina's inscription to be of now-called Orphic genre (J. E. Harrison, 1908, pp. 586 - 587).

According to one version, here in *précis*, step-mother Hera, jealously enraged at the birth of Dionysus from a union of Zeus with his daughter Persephone, incited the Titans into killing and eating Dionysus, except that Dionysus's heart, swallowed by Zeus after having been saved by Athena and given to him, was born again through Zeus's thigh or through association with Semele. In anger, Zeus subsequently destroyed the Titans with

lightning and from their ashes mankind emerged. Nonnus’s version is much more colourful (ibid., 6:165 – 315, pp. 225 – 235).

Rouse(1940), in translating Nonnus’ *Dionysiaca*, is at a loss to know the route by which Zagreus as Orpheus became so prominent in Nonnus (AD late 4th – early 5th centuries).

Orphic Gold Tablets: Typology Key by Authors	
G-J	Graf F. & Johnston S.I. (eds.) 2007. <i>Ritual Texts for the Afterlife: Orpheus and the Bacchic Golden Tablets</i> . London: Routledge
GMA	Kotansky R.D. (ed., tr.) 1994. <i>Greek Magical Amulets: The Inscribed Gold, Silver, Copper, and Bronze Lamellae</i> . Vol. 1: <i>Published Texts of Known Provenance</i> . Opladen: Westdeutscher.
L	Bernabé A. & Jiménez, A. I. (eds.) 2008. <i>Instructions for the Netherworld: The Orphic Gold Tablets</i> . Tr. M. Chase. Leiden: Brill.
OF	Bernabé A. (ed.) 2004–07. <i>Poetae epici Graeci: testimonia et fragmenta</i> . Vol. 2.1–2: <i>Orphic rum et Orphic is similium testimonia et fragmenta</i> . München: Saur; Vol. 2.3: <i>Musaeus; Linus; Epimenides; Papyrus Derveni; Indices</i> . Berlin: Gruyter.
OGT	Edmonds R.G. (ed.) 2011. <i>The ‘Orphic’ Gold Tablets: and Greek Religion: Further Along the Path</i> . Cambridge: Cambridge University Press.

He notes that Nonnus’ Zagreus is but a shadow of Pindar’s Zagreus (H. J. Rose, 1936, pp. 79 - 96), which early Zagreus is powerful in agriculture and hunting, that is, in providing sustenance, a dimension also allowed by Rouse (1940, p. xi) and in recent times by Newbold (2014, pp. 2, 21)—a dimension not

incompatible with both a morality of place mentioned earlier on page 63 of this enquiry and on pages 229 and 265 in respect of Aristotelian Ethics. Osek (2013, pp. 73 - 104) inadvertently provides an answer for Rouse in a paper in which she addresses claims by Edmonds (2004, p. 31) and Burkert (Burkert, 2004, pp. 79 - 80) that “the ancient gold leaves ... had never been mentioned in Hellenistic and Graeco-Roman literature” (Osek, 2013, p. 73). Osek names Tablet A5 to be the last gold tablet associated with the Orphic-frescoed Roman hypogeum of the Aurelii circa AD 250—(OF 491 = L 11 = G-J 9 = OGT A5 = GMA 27)—and explains that although it was an amulet for Roman noblewoman Caecilia Secundina, it carries reproduced hexameter in the style of the remaining A fragments, outlined in the box on page 77 of this enquiry, all of which are dated to late classical and Hellenistic times, thereby establishing its so-called Orphic credentials. She then explains that one of the B fragments, Orphic Fragment 476 (OF 476 = L 3 = G-J 2 = OGT B1) was reused in the times of Caecilia Secundina, half a millennium after its first use in classical Greek times and applies this information to once again date so-called Orphic praxis in 3rd century Rome circa AD 250. Her task is to establish why, with no findings of so-called Orphic gold leaves dating after AD 260, that is, in the interim between Caecilia Secundina and Nonnus (AD late 4th – early 5th



Sources: (Artist and Author Unknown, 2014). Photos of Petelia Tablet OF 461—necklace, amulet and amulet case—cropped by Ian Eddington from the British Museum electronic catalogue; Graf, F., & Johnston, S. (Eds.). (2007). *Ritual Texts and the Afterlife: Orpheus and the Bacchic Gold Tablets*, p. 2. London: Routledge; Janko, R. (1984). *Forgetfulness in the Golden Tablets of Memory*. pp 89-100. *Classical Quarterly*, 34. Petelia OF 461 is included amongst Zuntz's B fragments. The leaf, left, reused after half a millennium, was damaged at the bottom through being cut to fit the amulet, right.

centuries), Nonnus was able to make references to ancient Orphic gods in his *Dionysiaca*.

Osek provides an answer to Nonnus' usage by arguing away other suggested candidate nominations of references to Orphic gold tablets, including Bernabé's proposal of Euripides' *Alcestis* 667 – 669, his OF 812 and OF 819, and then urges a possibility that Nonnus' mention, circa AD 450, of the golden tablet of Hermes at *Dionysiaca* 41: 343 – 44 (Nonnos, 1942, p. 221) “on which are wrought all the secrets of law” (ibid., p. 221) might be a literary reference to so-called Orphic gold leaves. Osek suggests that Nonnus learned about Zagreus and the host of equally ancient Orphic gods mentioned in his poem from his readings of the “*Orphic Rhapsodies* in 24 books (OF 90

– 359)” (Osek, 2013, p. 79) which were in discussion during his lifetime at the Neoplatonic school at Athens. Osek is perhaps severe in mentioning only Orphic

iconography in respect of the hypogeum of the Aurelii as frescoes there support a megalography of deities in which may be discerned syncretisation of cult of Mithra, Jewish and Neoplatonic Philosophy, Orphism, Christianity and Gnosticism in antecedence of a codifying Christianity

consistent with multiple-faith 2nd and 3rd centuries Rome (Caru, 2011, no pagination; Petsalis-Diomidis, 2007, pp. 277 - 283). Nevertheless, the frescoed presence of various

Johnson's Hieros-Logos

YOU WILL FIND TO THE LEFT OF THE HOUSE OF HADES A SPRING AND STANDING BY IT A WHITE CYPRESS. DO NOT EVEN APPROACH THIS SPRING! YOU WILL FIND ANOTHER, FROM THE LAKE OF MEMORY, 5 COLD WATER POURING FORTH; THERE ARE GUARDS BEFORE IT. SAY, "I AM A CHILD OF EARTH AND STARRY SKY, BUT MY RACE IS HEAVENLY. YOU YOURSELVES KNOW THIS. I AM PARCHED WITH THIRST AND AM DYING; BUT QUICKLY GRANT ME COLD WATER FLOWING FROM THE LAKE OF MEMORY." 10 AND THEY THEMSELVES WILL GRANT YOU TO DRINK FROM THE SACRED SPRING AND THEREAFTER YOU WILL RULE AMONG THE OTHER HEROES. THIS IS THE WORK OF MEMORY. WHEN YOU ARE ABOUT TO DIE, [LET THE REMEMBERING HERO WRITE IT DOWN ON THIS TABLET OF GOLD. — TR. E.O.] ENWRAPPED . . . DARKNESS.

faith gods does not rule out Orphic praxis. Cavero allows a possible put down and Christian bias in Nonnus's humorous approach to the gods of his *Dionysiaca* (Cavero, 2009, pp. 557 -583).

In addition to claiming that the Zagreus myth is a myth Edmonds writes:

that the gold tablets and their religious contexts have been misunderstood because these texts have been interpreted in terms of a modern fabrication dependent on Christian models, the Zagreus myth. The 'Orphic' gold tablets themselves have nothing to do with the stories of *sparagmos* and anthropogony, but instead supply important evidence for the study of Greek eschatological beliefs. (R. G. Edmonds, 1999, p. 38)

Edmonds (2004) develops his argument more fully in his *Redefining Ancient Orphism: A Study in Greek Religion* in which finds dissatisfaction with scholarly construction of Orphism as a "category for all the religious phenomena associated with the name of

Orpheus"(ibid., p. 4). He suggests, *inter*

alia, that gold tablet verses might better be understood as an outcome of priests providing service to their clients (ibid., p.

108), there being no common textual basis,

whether Orphic or Chaldean, and no standard *hieros-logos* as, for example,

Riedweg (2002) urges there is. Edmonds

states that the association with Orpheus in the gold tablet texts signifies "a way for the ancient Greeks to label the extraordinary in the religious tradition, from the prestigious Eleusinian mysteries to innovative cosmologies [of] ... the itinerant charlatans who took advantage of the superstitious myths of the underworld journey" (R. G. Edmonds, 2009, p. 82, my square brackets).

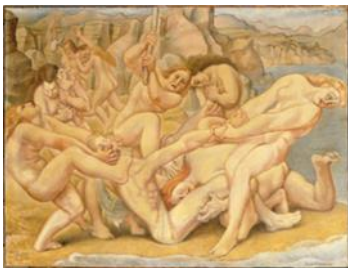
Edmonds' Orpheosceptic exegesis (R. G. Edmonds, 2010a, pp. 3 - 15, 220 - 257) places him at odds with other received Pan-Orphists like Graf (2010, pp. 53 - 67), who names Edmonds and Zuntz as more prominent scholars amongst "voices [that] have always been dissenters from a large *communis opinio* shaped by Comparetti" (Graf & Johnston, 2007/2013, p. 55, my square brackets), and from other scholars accepting the

Janko's Constructed Archetype Hieros-Logos

YOU WILL FIND ON THE RIGHT IN HADES' HALLS A SPRING, AND BY IT STANDS A GHOSTLY CYPRESS TREE, WHERE THE DEAD SOULS DESCENDING WASH AWAY THEIR LIVES. DO NOT EVEN DRAW NIGH THIS SPRING. FURTHER ON YOU WILL FIND CHILL WATER FLOWING FROM THE POOL OF MEMORY OVER THIS STAND GUARDIANS. THEY WILL ASK YOU WITH KEEN MIND WHAT IS YOUR QUEST IN THE GLOOM OF DEADLY HADES. THEY WILL ASK YOU FOR WHAT REASON YOU HAVE COME. TELL THEM THE WHOLE TRUTH STRAIGHT OUT. SAY: I AM THE CHILD OF EARTH AND STARRY HEAVEN, BUT OF HEAVEN IS MY BIRTH: THIS YOU KNOW YOURSELVES. I AM PARCHED WITH THIRST AND PERISHING: GIVE ME QUICKLY CHILL WATER FLOWING FROM THE POOL OF MEMORY.' ASSUREDLY THE KINGS OF THE UNDERWORLD TAKE PITY ON YOU, AND WILL THEMSELVES GIVE YOU WATER FROM THE SPRING DIVINE; THEN YOU, WHEN YOU HAVE DRUNK, TRAVERSE THE HOLY PATH WHICH OTHER INITIATES AND BACCHANTS IN GLORY. AFTER THAT YOU WILL RULE AMONGST THE OTHER HEROES

idea of an Orphic *hieros-logos* (Riedweg, 2002), or the possibility of common Orphic

Orpheus Through the Ages



Source: Cropped by Ian Eddington with various sharpening and contrast adjustments from: (Top) Levy, E. (1886). (artist). *Mort d'Orphe* (oil on canvas) Musée d'Orsay: Art Renewal Centre. (Middle) Swan, J. M. (1896). (artist). *Orpheus*. (oil on canvas). Lady Lever Art Gallery, Port Sunlight, United Kingdom: Art Renewal Centre. (Bottom) Unknown artist.

stem origins (Dieterich, 1893; West, 1983 #917; Merkelbach, 1999). Janko (1984, p. 99) has constructed a “hypothetical archetype” (Osek, 2013, p. 75) hieros-logos poem of 22 lines to capture the content of Zuntz’s B fragments. It is given in prose in the box on page 81 along with an alternative version by Johnson located on page 80.

Thus while some scholars may accept, in whole or in part, the sentiment of an anonymous Times newspaper reviewer—“Orphism is an insubstantial religion constructed by scholars out of myths, cults, verses, and ritual connected with his [Orpheus’] name ... Orphism is now Obsolete” (Graf & Johnston, 2007/2013, p. 194, my square brackets)—others, judging from the resurgence of new scholarship and revised editions sparked in part by Derveni and Orphic gold tablet conundrums, are ensuring that Orphism, more widely defined, is far from obsolete.

For example, in attempting to find out who the so-called Orphics of the gold *lamellae* were, and from whence they came, or whether the gold, and now some silver tablets (R. G. Edmonds, 2009, p. 85), were of funerary rather than ritual significance, and if primarily of ritual function, then in what ritual setting, or whether the texts of the *lamellae* are in the spirit of so-called Orphic *katabasis* or Egyptian

Book of the Dead (Anonymous, 2008) magic, or whether the eschatology is Bacchic, Egyptian, Pythagorean or Eleusinian, or whether the author of the Derveni Papyrus was, by his/their writing, practicing his/their own equivalent of what has been recently called a technique of “secondary counter discourse” (Eddington, 1999), or for that matter, answers to a growing number of additional conundrums as well, prominent Orphic

scholars have used, among other channels, geography, papyrology, archeology, mythical

**Orpheus Through the Ages
(Continued)**



Sources (Top) De Chirico, G. (1979). Artist. *Orpheus the Tired Troubadour*. Cropped by Ian Eddington from page 34 of Nachtegaele, E. (2013). *Coming Home to Modern Japan: An Orphic Dialogue between Japan and the West* in Murakami Haruki's *Norwegian Wood*. *The IAFOR Journal of Literature and Librarianship*, 2(2), 33 – 52 (Bottom) Zydower, A. (1984). (sculptor). *Orpheus*. (bronze sculpture). The Terrace at Harvard House: Cropped by Ian Eddington from a photo by J. Freckles available on her Salt and Light web page.

cosmogony, linguistics, art, analysis of narrative, analysis of imagery, variants of van Gennep's rites of passage methodology (van Gennep, 2004) and variants of Propp's (1928, 2009) morphological structuralist method of fairytale analysis in ongoing elucidation of Orphism (Bernabé, 2011; Bernabé 2013; Bernabé & Jiménez San Cristóbal, 2008, 2010; Calame, 1995, 1999, 2002; Dieterich, 1893; R. G. Edmonds, 1999, 2004, 2009, 2010a, 2010b, 2013; R. Janko, 1984; R. Janko, 1997, 2001, 2002, 2004, 2005; Merkelbach, 1999; Riedweg, 1998; Scalera McClintock, 1991; Zuntz, 1971), to cite but a few. It appears as though each attempt at clarification and codification of Orpheus and Orphism raises new questions and it is not improbable that another discovery such as the Derveni Papyrus may complicate matters further or for that matter bring clarification.

In summary, beginning on page 72 and ending on this page I have, *inter alia*, through discussion of references to the journey of the soul and reincarnation in Presocratic fragments, through discussion of references to reincarnation in Platonic dialogues, and through discussion of Derveni Papyrus, Strasbourg Papyrus and Orphic gold tablet research, been assessing the robustness and validity of earlier established P(p)olis religion and religion-to-philosophy constructs as viable touchstones for ongoing exegesis. These three domains of research have permitted valuable insights into matters of P(p)olis and cult religion, Orphism, possible germination of personal God monotheism, old questions about authorship of contested books, early secondary counter discourse attempts to resolve the Science-religion divide and tensions within that divide, hermeneutical analysis of classical Greek drama and poetry, polemical dimensions of a

transition from religion to philosophy, and perhaps into the possible beginnings of a so-called digimodern iconoclasm of even Plato and Aristotle themselves.

In all their richness and enigma Derveni Papyrus, Strasburg Papyrus, and Orphic gold tablet research findings are not fatal to employment of from-religion-to-philosophy and state calendar religion constructs as valid frameworks for ongoing exegesis of relationships amongst Science, religion and society in Hellenistic and classical Greece.

In light of this reassessment, I begin, in the next paragraph, discussion of Step 2 of this

Steps 2 and 3
Step 2: description of the Platonic usage of the terms justice, virtue, god, and happiness in preparation for their use in Step 3.
Step 3: application of the Step 2 terms to explain how Science, as scientific philosophy, and Ethics as practical philosophy, inform the political philosophy of the Platonic Polis.

chapter, in which Step I describe Platonic usage of the terms justice, virtue, god, and happiness in preparation for their subsequent use in Step 3 in which I conjecture that natural law origins of

Ethics and Science, and their attendant order, *kosmos*, can be detected in classical Greek values which inform the political philosophy of Plato.

STEP 2: DESCRIPTION OF THE PLATONIC USAGE OF THE TERMS JUSTICE, VIRTUE, GOD AND HAPPINESS
Justice is discussed first. In its derivation the Greek *dike* denotes the way or path in the sense of the usual manner in which a particular class of people behaves (Guthrie, 1975a, p. 7). This original usage carries no connotations of moral obligation or of moral correctness. It might as easily serve to describe the *habit* or *way* of a tribe that slaughters its grandfathers as to describe the habit or way of a tribe that cherishes them. The killing and the cherishing are, in the sense of the original usage, both right, that is, habitual ways of behaviour.

This habitual usage can be found in Homer's *Odyssey* Books IV and XIV (Homer, 1919, 2008), and in Hesiod's *Theogony* 899 - 925, either before, coeval with, or after Homer's announcement that Dike is a daughter of Zeus and Themis the Titan (Hesiod, 1908/2010, p. 64; 1914a, 901 - 905), temporal priority between Hesiod and Homer being contested as the accompanying box on page 85 reveals. Nevertheless, irrespective of that contested priority and identity of authorship, ideas contained in works attributed to these writers

remain informative. For example, at *Theogony* 120 - 135 (Hesiod, 1856, 1914a) Dike's

**Behind the Text: On Temporal Priority of Hesiod and Homer
Also Homer's Existence as a Poet**

Temporal priority between Hesiod and Homer is contested. Amongst some of those urging Hesiod before Homer are Lucius Accius, (BC 170 – 86), Ephorus (BC 400 – 330), the Parian Marble Inscription (BC c. 264 – 263), Erich Bethe, 1922, Friedrich Schwenn, 1934; amongst those advocating overlapping lives are Varro (BC 116 – 27), Herodotus (BC c. 484 – 425), Aulus Gellius, (AD c. 125 – unknown), Clement of Alexandria (AD c. 150 – c. 215), Philostratus (AD c.171 – c.250) George the Syncellus, (died AD c.810), West 1966, Bethe, 1929, Sellschopp, 1929 and amongst those placing Homer before Hesiod may be found Xenophanes (BC c.570 – c. 475), Philochronus (BC c.340 – c.261), Plutarch (AD 45 – 120), Gaius Julius Solinus, (AD mid-3rd century), Plato (BC 427 – 347), Eratosthenes (BC 267 – 194), Aristarchus (BC 310 – 230) Apollodorus (born BC c.180), Felix Jacoby, 1933, R. Janko, 1982, and J. Butterworth, 1986 (Butterworth, 1986, pp. 33 - 45; Graziosi, 2002, pp. 90 - 124; M. Heath, 2009, p. 265; R. Janko, 1982, pp. 29 - 30; 1982/2007, pp. 152 - 158; Lefkowitz, 2012, pp. 1 - 29; G. W. Most, 2006, pp. 154 - 282; R. M. Rosen, 1997, pp. 463 - 488; M. L. West, 1966, pp. 40 - 48). The whole argument on priority is complex and sophisticated, involving linguistic analysis, archeology, history, poetic style, content analysis, and statistics and is sometimes disadvantaged by unavailability of sufficient information, much epic poetry having been lost (R. Janko, 1982/2007, p. 9). On page 571 of the *Certamen* (1914)—which work itself may be based on work of Alcidas of Elaea, alive in the 4th century BC (Kirk, 1950, pp. 149 - 167; Koniaris, 1971, pp. 107 - 129; Nietzsche, 1870; O'Sullivan, 1992, pp. 63 -66; J. Porter, 2000, pp. 239 – 241, 318; N. J. Richardson, 1981, pp. 1 - 10)—the author countenances Homer and Hesiod each being prior to the other (sic) and also their possible coequality. Graziosi (2002, p. 104) and Rosen (1997, p. 464) opine that recent scholarship attributes priority to Homer. West adds that there are good arguments for temporal priority of each of Hesiod and Homer over the other and Rosen (ibid.) states that the question of priority is not settled. Rosen also suggests that the similarity of content in the *Theogony* and the *Odyssey* (Butterworth, 1986; Neitzel, 1977) might just as well be caused by both authors using traditional material as by the second in priority attempting to emulate the first (R. M. Rosen, 1997, p. 469). That is, similarity of content might not be a reliable criterion on which to predicate priority of the poets.

In another contribution West argues:

“that 'Homer' was not the name of a historical poet, but a fictitious or constructed name, and secondly that for a century or more after the composition of the *Iliad* and *Odyssey* there was little interest in the identity or the person of their author or authors. This interest only arose in the last decades of the sixth century; but once it did, 'Homer' very quickly became an object of admiration, criticism, and biographical construction. Some scholars nowadays consider that the *Iliad* and the *Odyssey* are the work of different authors. Yet people continue to use the name 'Homer' (preferably for the poet of the *Iliad*, the greater of the two epics) and to assume that there was a real person of that name who very likely had something to do with the creation of the poem” (M. L. West, 1999, p. 364).

Rosen also acknowledges that a diverse poetic tradition “lies behind the figure we refer to as Homer” (R. M. Rosen, 1997, p. 463).

mother Themis, herself conceived of two primordial gods, Earth and Sky, Gaia and Uranus, is a goddess of law and nature, a goddess of divine law, of what is ordained, of what may or may not be done. In a fragment attributed to Pindar *For the Thebans Fragment 180 (172)* (Pindar, 1915, p. 515) the author writes that the Moirai or Fates, which were themselves primordial gods, carried Themis to Zeus but Sandys, his translator, provides a caveat:

The above passage [Fragment 180 (172)] was one of the poet's earliest compositions. It was so full of mythological allusions that the poetess Corinna, who had suggested his turning his attention to mythology, told him "to sow with the hand, not with the whole sack (Plutarch, de glor. Athen. c. 4.). (J. Sandys, 1915, note on p. 515, my square brackets)

Themis counsels Zeus on matters of apportionment and ordination, a fortunate thing for him, given

that the Olympian gods themselves were not entirely free from the rule of the Fates. Dike, a child of heaven, is a human face of justice. Dike announced divine judgements

and with her mother carried them out. From this beginning *themis* is associated with social order.

Behind the Text: Virtue is Some Kind of Knowledge

Notwithstanding problems associated with chronologisation of Plato's works, as discussed on pages 10 to 11 and 142 of this enquiry, Plato, through dialogical conjecture and refutation about the nature of virtue as craft knowledge in some of the so-called early dialogues, may be read as providing a basic working profile of one kind of virtue to serve as a basis for extended articulation of virtue *per se* in so-called middle and later dialogues. For example—and accepting throughout this discussion box that such a reading of the dialogues is valid—in some early dialogues a craftsman, by virtue of their knowledge, might produce beneficial outcomes *Euthydemus* 279e – 281e (Plato, 1952e, pp. 69 -70; 1967a), a conjecture checked and balanced in *The Republic* I 333e – 334c (Plato, 1952r, pp. 298 - 299; 1969a) where craft virtue can, as also in the sections immediately before cited, lead to both good and bad outcomes. Craft knowledge is specific to a particular trade or specialisation *Ion* 537d – 539 (Plato, 1925c; 1952s, p. 146) and craftsmen in possession of knowledge of materials and methods, are likely to be able to teach the knowledge of their craft *Protagoras* 311b, (Plato, 1952q, p. 312; 1974), *Laches* 201a (Plato, 1952i, p. 37; 1955b), and to account for their knowledge where others cannot *Laches* 190a-c, (Plato, 1952i, p. 30; 1955b), *Apology* 22d – 24 (Plato, 1952a, pp. 202 - 203; 1966a), although being able to account for craft knowledge is not equivalent to wisdom *Apology* 23a (Plato, 1952a, p. 203; 1966a). Craftsmen apply their knowledge and work their materials with a particular aim in mind, for example, architecture for houses, medicine health *Charmides* 165d-e (Plato, 1952b, p. 7; 1955a). From such an assembly of features—the purpose of this dialogue box is not to distil and/or differentiate an essential Plato from an essential Socrates—Plato might be interpreted as moving to discussion of what kinds of knowledge might constitute moral virtues, and in some so-called early dialogues, *Euthyphro* (Plato, 1952f, 1966b), *Laches* (Plato, 1952i, 1955b) and *Charmides* (Plato, 1952b, 1955a), as employing a craft virtue analogy in attempts to probe understanding of the kind of knowledge of which moral virtues such as piety, justice, courage and moderation might consist. For example, in *Euthyphro* 14d and 15b participants discuss whether piety as virtue might be understood as knowledge of how to give service to the gods in honour of them (Plato, 1952f, p. 198; 1966b). In *Laches* 194e - 195a, a possible craft-tending-to-moral virtue of courage is variously depicted as “knowledge which inspires fear or confidence in war, or in anything” (Plato, 1952i, p. 34; 1955b) or at *Laches* 193a-c as endurance informed by wisdom during war, (Plato, 1952i, p. 33; 1955b). Likewise in *Charmides* 164d, a virtue named moderation, and by association wisdom, is variously connected with knowledge of oneself in respect of a capacity for doing good *Charmides* 164d (Plato, 1952b, pp. 6 - 7; 1955a) or at 166c as “knowledge of other sciences, and of itself” *Charmides* 166c (Plato, 1952b, p. 8; 1955a), or at 174b as “knowledge with which ... [one] discerns good and evil” *Charmides* 174b (Plato, 1952b, p. 12; 1955a). Each of *Euthyphro*, *Laches* and *Charmides* ends in aporia.

(Continued on page 87.)

The morphing of the right habitual way into the right moral way may be found a century before Plato in the writings of Aeschylus (BC 525-456). For example, in *Prometheus Bound* 200 – 230 (Aeschylus, 1912, p. 13; 1926b), Themis is called to the aid of Zeus where she distinguishes between brute force and guile as methods of solving human problems, and in the Oresteia Trilogy (Aeschylus, 1893, 1926a), beginning in *The Agamemnon*, continuing in *The Libation Bearers* and emerging in *The Eumenides*, there is a discernible shift in the meaning of justice away from the absolute and ordained killing of Homeric pay-back and revenge of the Furies, towards justice as reasoned and civic persuasion.

Plato, in his attempt to design a correct *Polis*, and in his disillusionment with the decline of Athens, initially rejects morphed meaning of *dike*, using in its place a Homeric version based on clear-cut class distinctions. Guthrie argues that the final definition that Plato settles on in *The Republic* is explained as “justice, *dikaiosyne*, [which is] the state of the man who follows *dike*, [and it is] no more than minding your own business, doing the thing or following the way which is properly your own, and not mixing yourself up

with other people and attempting to do their jobs for them” (ibid., p. 7, my square

Behind the Text: Virtue is Some Kind of Knowledge (continued)

Virtue as some kind of knowledge—“all other things hang upon the soul, and the things of the soul herself hang upon wisdom, if they are to be good” *Meno* 88e – 89a (Plato, 1952l, p. 184; 1967c)—is further articulated at *Meno* 89a, (Plato, 1952l, p. 184; 1967c) and *The Republic* I 350c-d (Plato, 1952r, pp. 307 - 308; 1969a), and in the later dialogues *Euthydemus* 279a – 281e (Plato, 1952e, pp. 69 - 70; 1967a), and *Protagoras* 333b, 350c, 352b-c, 360d (Plato, 1952q, pp. 50, 58, 59, 63 - 64; 1974). However the highest truths are written in the soul and it is questionable whether the soul can have knowledge to wisdom while it is captured in body *Phaedo* 79a – 80 (Plato, 1952n, p. 231; 1966c).

Gorgias (Plato, 1952g, 1967b) and *The Republic* (Plato, 1952r, 1969a), *inter alia*, raise questions about the kind of knowledge that might constitute a possible craft-come-moral virtue called justice. For example, against a background of rhetoric as a craft *Gorgias* 452e, (Plato, 1952g, p. 225; 1967b), Gorgias is worded at 454b to own a suspect association between rhetoric and matters of justice and injustice *Gorgias* 454b (Plato, 1952g, p. 256; 1967b), a claim Plato’s Socrates debunks at *Gorgias* 459d, 463d, 465a, 464b – 466a (Plato, 1952g, pp. 258, 260, 261, 261 - 262; 1967b), but just what kind of knowledge may constitute the moral virtue of justice is not made explicit. Book I of *The Republic* at 338c has Thrasymachus proclaiming that the moral virtue justice “is nothing else but the interest of the stronger” (Plato, 1952r, p. 301; 1969a)

In *Euthydemus* 373d the brothers Dionysidorus and Euthydemus claim their craft is “the teaching of virtue ... [which they can] do better and quicker than any man” *Euthydemus* 373d (Plato, 1952e, p. 66; 1967a). Protagoras is also confident of his craft ability to teach virtue *Protagoras* 318e – 319a (Plato, 1952q, p. 43; 1974) in the interest of affairs of state, claiming at *Protagoras* 328b that he has knowledge “to make man noble and good” *Protagoras* 328b (Plato, 1952q, p. 47; 1974), Socrates however not being convinced that virtue can be taught *Protagoras* 319a-b (Plato, 1952q, p. 43; 1974), and narrating for conversation purposes, “that one part of virtue is unlike another” *Protagoras* 331b (Plato, 1952q, p. 48; 1974), raising a possibility of an existence of different kinds of virtue. At *Protagoras* 360d, while courage may well be knowledge of what is and is not to be feared *Protagoras* 306d (Plato, 1952q, p. 88; 1974), when courage is not guided by wisdom it is like the courage of a madman *Protagoras* 350 – 351 (Plato, 1952q, p. 58; 1974).

(Continued on page 88.)

brackets). Guthrie does not cite Plato in his explanation but the question of justice is discussed in detail in Books II through V of *The Republic* (Plato, 1952r, 1969a) and details similar to those Guthrie explains can be found in *The Republic* 433a – 433e (Plato, 1952r, pp. 349 - 350; 1969a). Plato’s starting definition, being *inter alia* based as it is on place and cultural divisions in society, is a fundamental and earthy definition and it is not difficult to imagine its origins in *moira* as natural imperative inherent in sustaining tribal place.

I now discuss virtue. Virtue, *arete*, the good, first carried a denotation of the practical or vocational good in the sense of somebody being good-

at-something, the Greek sense being good-at-what: shoemaking, soldiering, politics? This usage can be found in Homer. For example, Penelope was good at constancy, wisdom and discretion *Odyssey* Bk. 4, 1000 – 1010, Bk. 14, 450 - 460 (Homer, 1915, pp. 68, 213- 214); Achilles was intractable in battle *Iliad* I, 190, 280 (Homer, 1833, pp. 9, 12; 1924) and Hector was noted for being active and vigilant *Iliad* Bk. 2, 990, Bk. 4, 580 - 585, (Homer, 1833; 1928, pp. 191, 229 - 231). The good in this sense is akin to technical efficiency (Scharffenberger, 2004, pp. xlvi - xlvi, xxxvi, 354) and suggests that Plato’s reaction to, and extended application of, the term *arete* in *Republic* Bk. 1,

351a – 353e (Plato, 1952r, I 351 - 354, pp. 308 - 310; 1969a) ushered in its now moral connotation.

For example, at the time of the fifth century Sophists there appears to be little usage of

Behind the Text: Virtue is Some Kind of Knowledge (continued)

Things, in this case courage, are valueless in themselves and become bad or good depending on whether they exist in the presence of ignorance or are informed by knowledge *qua* wisdom *Euthydemus* 281d (Plato, 1952e, p. 70; 1967a). Furthermore at *Meno* 88c “all that the soul attempts and endures, when guided by wisdom, ends in happiness” (Plato, 1952l, p. 184; 1967c), unhappiness being an outcome of a soul guided by ignorance and folly. Consequently, virtue as a quality of soul which is always profitable, may be thought of as some kind of knowledge, “some kind of wisdom or prudence” *Meno* 88c (Plato, 1952l, p. 184; 1967c). Knowledge, begotten of recollection is higher than true opinion because it is fastened as if by a chain to the forms, and is thus able to tie down true opinion to cause *Meno* 98a (Plato, 1952l, pp. 188 - 189; 1967c). Consequently wisdom thus plays an important role establishing value in moral virtues like courage, temperance, piety and justice and is not far removed from temperance as knowing oneself. Again, unfortunately, wisdom appears out of reach to a soul entrapped in living body, and is thus unattainable to mankind *qua* living beings *Phaedo* 66 – 67 (Plato, 1952t, pp. 224 - 225; 1966c).

Further articulation about virtue as some kind of knowledge might be gleaned from sometimes-called middle dialogues *Phaedo* (Plato, 1952t, 1966c), *The Republic* (Plato, 1952r, 1969a) and *Symposium* (Plato, 1925g, 1952u). For example, there appears to be further development of the nature of forms and of the nature of recollection. The good and just are introduced at *Phaedo* 65d (Plato, 1952t, p. 224; 1966c) as forms which might only be attained through mind alone *Phaedo* 67, 79a (Plato, 1952t, pp. 225, 231; 1966c). True virtue, which depends upon knowledge, is better than a still-admirable popular virtue *Phaedo* 82a-b (Plato, 1952t, p. 233; 1966c) because true virtue, or education in search of it, might serve as a preparation for the soul’s flight to unity and full knowledge of the unchanging forms *Phaedo* 83e (Plato, 1952t, p. 234; 1966c), philosophy being that which strives for divine unity with the forms at the expense of focus on objects of opinion *Phaedo* 84a, (Plato, 1952t, p. 234). Lower moral virtue, for example that possibly learned by practice and habit say, through a kind of education which mitigates against such conditions as telling lies, especially bad representation of heroes and gods *The Republic* II 377 – 378e and VII 522c – 531c (Plato, 1952r, pp. 320 – 321, 391 - 396; 1969a) is also to be available, and when complemented by gymnastic, music, literature and mathematics *The Republic* II 376 – 377 (Plato, 1952r, pp. 320, 391 - 396; 1969a), is to form part of the education of a guardian class for good-of-state purposes *The Republic* III 412d-e (Plato, 1952r, p. 339; 1969a).

(Continued on page 89)

moral connotation in the sense of an abstract and universal good even though the more conservative amongst the Sophists included morality in their teachings. The moral dimension of the good began to emerge when the dialogical Socrates worded by Plato set out to find the *arete* for humans as a species. That is, they sought to understand the collective human *arete* rather than the *arete* for the particular shoemaker, or fisherman. Thus, with an efficiency denotation still in place, the

search for the human *arete* was to be predicated on the *ergon* (Santas, 2001, pp. 66 - 75).

To begin to search for the *arete* of mankind as a class, through first settling on a definition as to what constitutes the *ergon* of that class, was an innovation and the idea of the good, virtue or goodness as it is now understood as an abstract term, is a direct outcome of it. Irrespective of this connotation, the predicative, the good-at-what denotation, remains in everyday usage, and it continues to signify a technical goodness

in the sense of skill or efficiency at a particular job. Virtue, consisting of technical

Behind the Text: Virtue is Some Kind of Knowledge (continued)

However only some guardians might be suitable as rulers, those who meet a test of living a virtuous life *The Republic* III 412d-e – 413 (Plato, 1952r, p. 339; 1969a) a life guided by knowledge and wisdom, a life of a philosopher *The Republic* V 473c-e (Plato, 1952r, p. 369; 1969a) whose education consists of study of the form of the good and the beautiful, that is, study of that which causes science and truth *qua* knowledge, which wisdom may carry to virtue *The Republic* VI 508d-e – 509a (Plato, 1952r, p. 386; 1969a).

Again true virtue, if it is to be obtained, is obtained when the soul receives the knowledge of the forms through beholding the form of beauty through the eye of the mind *Symposium* 212a (Plato, 1925g; 1952u, p. 167), such beholding of form occurring only after death *Phaedo* 66d – 67a (Plato, 1952t, pp. 224 - 225; 1966c). In *The Republic* IV 433a-d (Plato, 1952r, p. 349; 1969a), after providing a working prioritisation of the moral virtues piety, courage, temperance and justice *The Republic* IV 431e – 432d (Plato, 1952r, pp. 348 - 349; 1969a), and on his way to defining justice as doing one's job, not being a busybody *The Republic* IV 433 – 434 (Plato, 1952r, p. 349; 1969a), as discussed on pages 84 to 87 of this enquiry, and thence on to ascertaining whether these four virtues in the soul are also found in the state *The Republic* IV 435a-d (Plato, 1952r, p. 350; 1969a), Plato treats justice in a manner sometimes not unlike his treatment of wisdom in *Euthydemus* 281d-e (Plato, 1952e, p. 70; 1967a). Justice, he has Socrates narrate, "is the ultimate cause and condition of the existence of all of them [courage, temperance, and wisdom] and when remaining in them is also their preservative: and we were saying that if the three were discovered by us, justice would be the fourth or remaining one" *The Republic* IV 433c (Plato, 1952r, p. 349, my square brackets; 1969a). Virtue, whatever its knowledge, brings happiness *Charmides* 171e - 172a (Plato, 1952b, p. 11; 1955a), and living according to justice and virtue, whatever knowledge each consists of, will allow us "to live dear to one another and to the gods ... and it shall be well with us both in this life and in the pilgrimage of a thousand years which we have been describing" *The Republic* X 621d (Plato, 1952r, p. 441; 1969a). The good and the beautiful, which are associated with happiness, are interchanged with one another at *Symposium* 204e (Plato, 1925g; 1952u, p. 164). At *Symposium* 205 – 207 (Plato, 1925g; 1952u, pp. 164 - 165) beauty, goodness and love are, *inter alia*, associated with one another and at *Symposium* 206 - 207 (Plato, 1925g; 1952u, p. 165) love *qua* its quest through body and soul of engendering and begetting an eternal possession of the good, gives rise, through procreation, to the soul's journey to the forms as discussed on pages 129 to 133 of this enquiry. Nevertheless, while the unexamined life is not worth living *Apology* 38a (Plato, 1952a, p. 210; 1966a), knowledge to examine it, and wisdom to guide a life examined, are difficult to own, and towards the end of the day Plato depicts Socrates as one having no adequate knowledge of the idea of the good *The Republic* VI 505a (Plato, 1952r, p. 384; 1969a).

Source: Plato. (1952). *Charmides, Laches, Protagoras, Euthydemus, Phaedrus, Ion, Symposium, Meno, Euthyphro, Apology, Phaedo, Gorgias, The Republic*. In *The Dialogues of Plato*. Chicago: William Benton; Plato. (1921 – 1969). *Charmides, Laches, Protagoras, Euthydemus, Phaedrus, Ion, Symposium, Meno, Euthyphro, Apology, Phaedo, Gorgias, The Republic*. In *Plato in Twelve Volumes*. Cambridge, MA: Harvard University Press; Guthrie, W. K. C. (1975). *The Greek Philosophers from Thales to Aristotle*. (pp. 81 – 121). New York: Harper and Row; Cormack, M. (2006). *Plato's Stepping Stones: Degrees of Moral Virtue*. (passim). London: Continuum; McCabe, M. M. (2015). *Platonic Conversations*. (173 – 282). Oxford: Oxford University Press. (Cormack, 2006; Guthrie, 1975a; McCabe, 2015; Plato, 1925c, 1925e, 1925g, 1952a, 1952b, 1952e, 1952f, 1952g, 1952h, 1952i, 1952l, 1952o, 1952q, 1952r, 1952u, 1955a, 1955b, 1966a, 1966b, 1967a, 1967b, 1967c, 1969a, 1974)

knowledge, could, with varying success, be taught through the trades, virtue being some kind of knowledge. Whether or not it might prove possible to teach mankind its, now their, virtue, whatever that virtue might be, was soon to become an exciting and teasing question.

Knowing that, in the Platonic dialogues, a technical denotation of the good or virtuous features in the search for the absolute virtue or good of mankind, simplifies reading of some of those dialogues. For example, knowing that skill or efficiency at a particular job, that is, goodness or virtue at that job, depends

on particular knowledge required for the job, which knowledge depends on the nature of the job, its purpose, its *ergon*, brings light to understanding the very departure point attributed to the dialogical Socrates—his reasoning that virtue is some kind of knowledge is reasoning to the effect that a virtuous craftsman has the skills

understood as knowledge to do the job efficiently. This skills construct is a possible beginning and anchor point of subsequent Western tradition arguments in search of the *arete* or virtue of humankind in general. However, both the kind of knowledge of which virtue might be constituted, and identification of those who might teach it, are difficult questions. For example, in *Meno* (Plato, 1952l, 1967c) *qua* Socratic dialogue just when the work on the nature of virtue might be expected to close in aporia, Plato, through introducing the now-called Meno's paradox *Meno* 80 (Plato, 1952l, p. 179; 1967c), switches general focus from morality to epistemology, to explore how to know what virtue is in the first place, and continues on to develop his doctrine of knowing as recollection of eternals already known by, and thus beholden in, soul *Meno* 86b (Plato, 1952l, p. 183; 1967c). If it is possible to know what virtue is, then, presumably it, virtue, may be taught for. But apparently knowing what virtue is, and who might teach it, are difficult questions, leading to a conclusion, in Plato's wording of Socrates, that virtue as some kind of wisdom or knowledge that cannot be taught *Meno* 96c (Plato, 1952l, p. 188; 1967c), it being neither natural or acquired, but rather a god-given instinct not likely accompanied by reason, and that the certain truth of the matter of how virtue is given depends upon wanting enquiry of the nature of virtue itself *Meno* 100 (Plato, 1952l, p. 190; 1967c)—and there we are left hanging out to dry in that tree Plato has had us climb, wondering if he is about to have Socrates chop it down. The problem of deciding the kind of knowledge of which virtue might be constituted is compounded by the question of what knowledge itself might be. It is neither perception *Theaetetus* 184b – 186e) (Plato, 1921c; 1952v, pp. 534 - 536), nor true belief *Theaetetus* 200d – 201c) (Plato, 1921c; 1952v, p. 544), nor true belief plus an account *Theaetetus* 206c – 210b (Plato, 1921c; 1952v, pp. 547 - 540).

Yet Plato has Socrates explore virtue as knowledge. For example in *Euthydemus* 281d-e (Plato, 1952e, p. 70; 1967a), while wisdom is found to be the one thing that is good in its own right by itself, nevertheless at *Phaedo* 78d (Plato, 1952n, p. 231; 1966c) Plato words Socrates to associate absolute equality and absolute beauty with unchanging of-itself-by-itself existential condition. McCabe (2015, pp. 244 - 257) in exegesis of *Euthydemus* 281b7-c3 (Plato, 1952e)@70(Plato, 1967a) argues that Plato establishes

wisdom as the only good existing itself-by-itself and consequently not a, but the, source of value (McCabe, 2015, p. 245), explaining away detected interpretation uncertainties as intentional on Plato's part (ibid., p. 243, footnote 74).

I now discuss the Greek idea of god. Henricks (2010, pp. 19 - 39) reasons that, from the time of Homer and Hesiod circa the eighth to seventh centuries BC and their identifications of the gods, until the last decades of the fifth century BC with its attendant possible emergence of monotheism and atheism, gods are characterised by immortality, anthropomorphism and power.

Cornford (1957, p. 249) argues that a Pythagorean notion of universal soul as a god, consisting of numbers existing in real beings throughout nature, unlocked the secret that allowed Plato to explain human understanding of matters natural, and matters ethical, as reminiscence of forms. Such reminiscence led human intellect to the final and ultimate Science and presence of the so-called one, henceforth one—of which more later. Aristotle in turn would have little of the Pythagorean mysticism that bodies were numbers *Metaphysics* 487a – 487b (Aristotle, 1952d, 1989). In particular the Greek word *theos*, god, was used to denote something more than human, something transcending death, a force continually at work in the world, not born with us, and continuing on after us, superhuman in immortality (Cioffi, 2014; Grube, 1935, p. 150; Trépanier, 2010, p. 276). Consequently the way or habit of the Greeks of the time was to declare something to be a god. Love is a god, envy is a god and Guthrie (1975a, p. 11) notes that the Greek practice is the very opposite of stating that God is love, or God is good, as Jews did, and as Christians and Moslems later came to do.

I now discuss happiness. What is pleasure and how is it different from happiness, and what constitutes happiness, and why does mankind's work lead to happiness: all of these questions beg answers.

Plato's word *eudaimonia* is sometimes translated as flourishing and is often alternatively translated as happiness (Cooper, 1998, p. 233) although there is disagreement about whether happiness and flourishing are synonymous (Ackrill, 1980, p. 23). Pleasure,

hedone, is implicated in happiness and Plato sometimes uses the words synonymously. His understanding of pleasure emerges, *inter alia*, from introspection about his own feelings and he finds the human capacity for pleasure seated at the very basis of the soul.

For example in *The Republic* IX 576c the dialogical Socrates advances an idea that “as State is to State in virtue and happiness, so is man in relation to man” (Plato, 1952r, IX, p. 418; 1969a). Then, after recapitulating at IX 577c, that, “bearing this [the parallel of the individual and the state] in mind and glancing in turn from one to the other of them” *The Republic* (Plato, 1952r, IX, p. 419, my square brackets; 1969a), he continues at IX 580b – 580c to posit that of five States under discussion “the best and justest is also the happiest” *The Republic* (Plato, 1952r, IX, p. 420; 1969a) and that this state is royalty. By analogy he continues in *The Republic* IX 580c that the best man is “king over himself” (Plato, 1952r, IX, p. 420; 1969a). That is, the just man is happy.

He proceeds with the analogy, and in *The Republic* IX 580d informs “that the individual soul, like the State, has been divided by us into three principles” (Plato, 1952r, IX, p. 421; 1969a). Plato’s Socrates then begins a second demonstration of his claim that the just man is a happy man and, although Plato treads a very fine line between pleasure and happiness, he does provide something of a differentiation between the two. He reveals, in *The Republic* IX 583e that while “both pleasure and pain are motions of the soul” (Plato, 1952r, IX, p. 422; 1969a), and yet while they contribute to happiness, they are not happiness *per se*.

For example, he claims in *The Republic* IX 580d that the “individual soul, like the State, ... [is] ... divided into three principles ... and to these three principles three pleasures correspond; also three desires and governing powers” (Plato, 1952r, pp. 421, my brackets; 1969a). The principles and governing powers are reason, spirit—whether noble or ignoble—and appetite or desire, and the pleasures coeval with them range from joys associated with bodily function and money making, through those which come from the recognition that honour brings, and on up to the divine-like state of the philosopher

contemplating the one. Plato's Socrates does not claim that three different kinds of happiness accompany the three kinds of pleasure.

Depending on what principle of soul and its attendant pleasure is dominant, a human will be a lover of wisdom, or a lover of honour, or a lover of gain, so that at the level of the state there will be three distinct classes: rulers, soldiers, and artisans working for profit. Socrates quickly moves to anoint supreme that pleasure which the lover of wisdom enjoys, the anointment being made on the basis that the lover of wisdom opted for a speculative life after having tasted all three kinds of pleasure—logical, but questionable nevertheless, and it is possible that when Plato so easily selects “experience and wisdom and reason” *The Republic* IX 582a (Plato, 1952r, p. 421; 1969a) as criteria he is aiding the success of his dialogical Socrates' argument.

Even so, some of these lower pleasures are valid, because they are necessary. For example, sex enjoyed for procreation, and drinking and eating enjoyed for quenching immediate thirst and hunger, do not necessarily produce harm or enslave the passions. He expresses a view that “although in general, those kinds of things which are in the service of the body have less of truth and essence than those which are in the service of the soul” *The Republic* IX 585c – 585e (Plato, 1952r, p. 423; 1969a), the pleasures they bring are closer to true pleasure the more they are filled with real existence and that which is according to nature *The Republic* IX 585d – 585e (Plato, 1952r, p. 424; 1969a). Thus:

... lovers of money and honour, when they seek their pleasures under the guidance and in the company of reason and knowledge, and pursue after and win the pleasures which wisdom shows them, will also have the truest pleasures in the highest degree which is attainable to them, inasmuch as they follow truth; and they will have the pleasures which are natural to them, if that which is best for each one is also most natural to him. *Republic* IX 586d – 586e (Plato, 1952r, p. 424; 1969a)

Some pleasures are certainly insubstantial if not disqualified, namely the pleasure of those “who know not wisdom and virtue, and are always busy with gluttony and sensuality” *The Republic* IX 586a – 586c (Plato, 1952r, p. 424; 1969a) who “like cattle ... fatten and feed and breed, [and who] ... kick and butt at one another with horns and

hoofs which are made of iron ... [and] fill themselves with that which is not substantial” (ibid, my square brackets). Such pleasures “implant in the minds of fools insane desires of themselves” (ibid., p. 424) such that those fools fight with shadows.

Thus pleasures compete with one another in the human soul and, in *The Republic* IX 586 - 587a, Plato’s Socrates differentiates happiness from pleasure by explaining that happiness ensues:

...when the whole soul follows the philosophical principle, and there is no division, the several parts are just, and do each of them their own business, and enjoy severally the best and truest pleasures of which they are capable. *The Republic* IX 586e - 487a (Plato, 1952r, p. 424; 1969a)

The individual is happy and just when the pleasures inherent in the three principle and governing parts of the soul are balanced, no one pleasure consciously conflicting with another. Justice and happiness are twins of the house of the soul, and to ask why one may cause the other leads me nowhere further. I am tempted to find the origins of Socrates’ happiness, understood as a balanced state of mind and body, rather than a motion of the soul, in the Ethics of obedience to *moira* and place, as also earlier suggested in the case of justice.

From this page onwards I refer to a number of the Platonic dialogues. I distinguish between the person and the dialogue named after him, by italicising the dialogue form. Thus, for example, *Timaeus* refers to the dialogue and Timaeus to the person.

In *The Republic* IX 592a – 592b (Plato, 1952r, p. 427; 1969a) Socrates concludes that although no just city exists on earth, a form of such a city exists in heaven. They who desire it, even though they may never be statesmen in their own country, may set their—in those days his—own houses in order and thereafter will have nothing to do with any other, the city of the forms, and the city of the soul, being one and the same, and the city of the forms being an objectively real city. There “is and ever will be one only-begotten and created heaven ... [and that] ... that which is created is of necessity corporeal, and is

also visible and tangible” *Timaeus* 31b (Plato, 1925h; 1952w, pp. 448, my square brackets).

Out of the same elements of earth, fire, water, and air the world was made, a world



Source: (Raffaello, 1509-11). (artist). *Philosophy*. (ceiling tondo). Vatican City, Stanza della Segnatura: Web Gallery of Art. The woman, ‘Philosophy’, holds two books respectively titled *Morals* and *Nature*. The colours of her dress represent the four elements, earth, water, fire and air. The books held by the genii share the words, *causarum cognitio* Cicero’s aphorism ‘know the causes’. This picture is situated above Raffaello’s fresco *The School of Athens*, Vatican City, Stanza della Segnatura, Rome

dissoluble only by the hand of the framer.

This world, modelled on the perfect heaven *Timaeus* 28a – 29a (Plato, 1925h; 1952w, p. 447) was, subject to slight blemishes,

somehow a perfect whole of perfect parts harmonised by the right proportions. Its

blemishes result first from evil aspects in the monads from which the four elements themselves were constructed *Timaeus* 53a – 53b, (Plato, 1925h; 1952w, p. 458), and

secondly from participation of lesser gods *Timaeus* 41a – 43e (Plato, 1925h; 1952w, pp. 452 - 453) in designing the mortal

aspects of soul, namely, sensation, emotion, and the animal and vegetative

requirements. The creator placed soul at the world’s centre from whence it diffused throughout, thereby “creat[ing] the world a blessed god” *Timaeus* 34a – 3b (Plato, 1925h, my square brackets; 1952w, p. 449).

The creation and modelling in *Timaeus* is by numbers, through a plethora of mathematical manipulations and proportioned mixing and *Timaeus* at *Timaeus* 35a (Plato, 1925h; 1952w, p. 449) explains that the creator of the earthly model of heaven finds monadic ingredients already in existence and from these ingredients, the indivisible and unchangeable, the divisible associated with material bodies, and a third intermediate essence compounded from the others, he created the soul first before the body and thus the four elements and all the rest of creation mentioned at *Timaeus* 32a-d (Plato, 1925h; 1952w, p. 448).

In further explanation Timaeus depicts a creator associating monad with numbers *Timaeus* 54a – 56e (Plato, 1925h; 1952w, pp. 458 - 459) and mentions an intractable existing substance and how he, the creator, together with the lesser planet gods, fashioned soul and all the rest of the four elements out of it. Besides providing enlightening insight into Plato’s knowledge of anatomy, physiology, and physics of light and reflection, *Timaeus* 29d – 30e, 41c (Plato, 1925h; 1952w, pp. 447 - 448, 452) the work also provides dialogical elucidations of an association of reason with the divine, and of the role of the immortal element of the soul in bringing understanding of the order and perfect design of heaven to the imperfect earthly sensual copy of it. Order and perfect design are close associates of Greek *taxis* and *kosmos* discussed on pages 107, and 112. There also appears to be an overall design in *Timaeus*. Divine reason, as the immortal part of the soul, is intellect, and intellect rules. Intellect is in the soul, the soul is in the body, in which its mortal components of sensation and desire inhere. The intelligent sensual body is real amongst real existing things.

I have now completed Step 2, that is, discussion of meanings of the terms justice, virtue,

Steps 2 and 3

Step 2: description of the Platonic usage of the terms justice, virtue, god, and happiness in preparation for their use in Step 3.

Step 3: application of the Step 2 terms to explain how Science, as scientific philosophy, and Ethics as practical philosophy, inform the political philosophy of the Platonic Polis.

god, and happiness as they are to be used in the work of Step 3’s discussion of Science and Ethics, and how these might inform the political philosophy of *Polis*. I begin the work of Step 3 in

the next section by discussing Ethics first, then Science, and then the relationship between them and the role they play in the Platonic *Polis*.

STEP 3: HOW SCIENCE AS SCIENTIFIC PHILOSOPHY AND ETHICS AS PRACTICAL PHILOSOPHY INFORM THE POLITICAL PHILOSOPHY OF *POLIS*

Ethics as Practical Philosophy of *Polis*

As earlier discussed on pages 87 to 90, just as each worker must practise their individual *arete*, in the Greek sense of efficient and good work, so too mankind as a whole might have and practise its work and attendant *arete*. To be an efficient worker a person must have knowledge of their trade and in particular this knowledge must serve the end in

view for the trade. For example the purpose of the shoe, that is, its function, determines



Source: (Gandolfi, 1782). (artist). *The Death of Socrates*. (oil painting). Bologna, Private Collection: Philosophy and Philosophers in Art. Socrates accepts the hemlock.

the kind of knowledge skills the shoemaker must acquire and efficiently practise. Working on these ideas, and as earlier discussed on pages 87 to 91, Plato tasks his Socrates to anvil out a notion of virtue as some kind of knowledge, virtue or *arete* for mankind in general being the quarry. To do this Plato must ask the question, what is mankind's essence? He employs Socrates and others in his dialogues in an attempt to answer it. Notwithstanding the question of the Socrates/Plato divide discussed on pages 10 to 11, I continue from the next paragraph onwards, without necessarily acknowledging a dialogical Socrates and refer mainly to Plato.

The early dialogues reveal a search for answers to the meanings of intellectual and ethical terms, for example piety or valour. They proceed by first assembling examples of actions held by different personages to typify a particular moral or ethical condition under discussion and then to search for and extract elements, or an element, common to each of the several examples, which element, if one be identified, becomes, in a more absolute sense, the essence of, and a standard for, that condition. For example, the *Euthyphro* (Plato, 1952f, 1966b) addresses piety, *Charmides* (Plato, 1903b, 1952b) temperance, *Laches* (Plato, 1903b, 1952i) courage, and the method is one of induction from the many particulars to the one general or absolute understanding. It is in part in this manner that a transition from technical-and-efficiency interpretations of goodness and virtue to moralistic interpretations of them progresses.

Plato's approach to finding mankind's *arete* is predicated on the soul or *psyche's* being the seat of the moral and intellectual faculties of practical philosophy and this big step is at the heart of a departure from a purely efficiency understanding of the good and

virtuous. Plato attempts to unite the moral and intellectual faculties of human soul, some

Behind the Text: Pythagorean Diatonic Scale and Other Speculations

“This is known as the Pythagorean diatonic scale. Examining the intervals between each step, we can see that the scale consists of the familiar major scale (where the whole step is $9/8$ and the $1/2$ step is $256/243$). Both the perfect 4th and 5th have exact ratios, $3/2$ and $4/3$ as expected (The scale was constructed using these intervals.) The Major 3rd however, is too wide, or sharp. The ratio should be $5/4 = 1.250$ but the Pythagorean scale has this interval as $81/64 = 1.265$. The minor 3rd between the 2nd and 4th degrees should be $6/5 = 1.20$ but in fact is $4/3$ divided by $9/8 = 32/37 = 1.185$, i.e. it is too narrow, or ‘flat’” (Worrall, 2014, n. p.)

A Pythagorean Tuning of the Diatonic Scale on C4 (Bain, 2014, n.p.).

The Diatonic Scale on C4 (Bain, 2014, n.p.)

And the Real Music of the Spheres?

From the Fourth Movement of Beethoven's 9th Symphony

Piano for Holst's Jupiter from *The Planets*

Source: Constructed by Ian Eddington from Bain, R. (2014). *A Web-based Multimedia Approach to Harmonic Scales*. (n. p.); Worrall, D. (2014). Course Notes for the Physics and Psychophysics of Sound and Music. (n. p.). Beethoven and Holst scores respectively cropped from *Ode to Joy* at Google Images and Red Balloon Technology Ltd (2009) at www.8notes.com/scores/10613.asp

idea of the high standard he sets being epitomised in his descriptions of a/the philosopher king in *Theaetetus* 173c – 176a (Plato, 1952v, pp. 529 - 530; 1986) and *Republic* 484e – 487b (Plato, 1952r, pp. 374 - 375; 1969a), and the particular kind and method of education required of philosopher-kingship, an education which might turn reason's focus from coming-to-be, towards being, and the highest part of being, namely the good *Republic* 518b-d (Plato, 1952r, pp. 389 - 390 - 375; 1969a), and certainly, although controlled, is something else again beyond a rote-learning kind of education. In preparation for this task he started to sort the real from the unreal against a backdrop of Heraclitus's view that knowledge of the world is difficult to obtain, Parmenides' likely urging that

the universal and immutable could be found by mind (respectively DK 22B1, 2, 72, 78

and DK 28B3, 4, 7-8) divorced from the senses, and his own interest in Pythagorean

Behind the Text: Music and Mathematics, Plato and Pythagoras

Diatonic Scale or Diatonic Pitch Set

“Thus there is no point in inquiring about the historical origins of the diatonic pitch set, our most fundamental musical possession. We will never know them. We can do no better than the legends by which the Greeks sought to explain the origins of their musical practice. In one of these, related by Nicomachus^[1] in the second century CE, Pythagoras, the reputed inventor of music, heard beautiful sounds coming unexpectedly out of a blacksmith’s shop. Weighing the anvils the smiths were striking, he discovered the harmonic ratios governing the perfect (“Pythagorean”) consonances, as well as the whole step. Laying these intervals out on a staff, and adding the two extra tones that are obtained when the Pythagorean complex is transposed to begin on each of its own constituent pitches, we may arrive at a primitive five-note (“pentatonic”) scale. Plugging the “gaps”, we find that we have “discovered” the half-step” (Taruskin, 2010, pp. 29-30, my square bracket superscript).

“The two most-studied late-classical texts on Musica were De musica (About Music) by St Augustine (Aurelius Augustinus, 354-430) the greatest of the Fathers of the Christian Church, and De institutione musica (On the organisation of Musica) by Ancius Manlius Severinus Boethius (ca. 480-ca. 524), the Roman statesman and educational reformer ...” (ibid., p 69)

“St Augustine’s treatise, completed in 391 ... covers nothing but rhythmic proportions (quantitative measures) and contains a famous definition of music—as bene modulandi scientia “the art of measuring well”—that was quoted as official doctrine by practically every later mediaeval writer. The treatise ends with a meditation, reminiscent of Plato’s dialogue Timaeus, on the theological significance of the harmonious proportions with which it deals, and the way in which they reflect the essential nature of the universe [2] ... Boethius’s treatise covers much more ground than Augustine’s. It consists largely of translations from the Hellenistic writers Nicomachus and Ptolemy. It thus became the sole source of mediaeval knowledge of Greek music theory, which included the Great Perfect System, a scale constructed out of four-note segments called tetrachords, and also the Pythagorean classification of consonances (simultaneous intervals). The treatise also contained directions for representing pitch intervals in terms of spatial ratios, which made possible the construction of “laboratory instruments” called monochords[3] ... for demonstrating number audibly, as sound” (ibid., pp.69-70, my square bracket superscripts).

“While Greek music still involved practical music for Nichomachus and Ptolemy (who lived in the second century CE in Arabia and Egypt, respectively), by the time of Boethius the actual music practiced by the ancient Greeks had fallen into oblivion, along with its notation. Accordingly, Boethius’s treatise concerns not practical music but abstract Musica, as the author declares quite explicitly” (ibid., pp. 70-71).

Notes: [1] Nicomachus of Gerasa (AD 60-120). [2] There appears to be no complete English translation of Nicomachus’ *De Musica*. Book VI is available in English (Jacobsson, 2002) and a complete translation is available in French (Augustine, 2006). An English translation of Boethius’ *De Institutione Musica* is available (Palisca, 1989) where on pages 17-19 Boethius translated tells the Pythagorean anvil story and subsequent monochord derivation of musical scale. Some 1050 years separate the birth of Pythagoras (BC 570-497 from that of Boethius AD (480-524) an observation germane to the opening sentence in this dialogue box. Boethius’ source may have been Nicomachus of Gerasa (AD 60-120) or Iamblichus’s *Life of Pythagoras* (1818, pp. 61 – 65, 229 - 234) or both. The science content inherent in Iamblichus’ and/or Boethius’ telling of the anvil story, whether inserted by themselves or possibly found somewhere in then-extant Pythagorean sources, is instructive.

(This Text Box Continues on page 100)

mathematics. (Copleston, 1966, pp. 143 - 144; Guthrie, 1975a, pp. 87 - 89). Beginning in the next paragraph I further discuss Heraclitus (BC 535 – 475), Parmenides (BC 515 – 460) and Pythagoras (born BC 570/571) as referent backdrops for Plato before, on page 106, refocussing on Ethics as practical philosophy of *Polis*.

For example, accepting that Heraclitus means by *logos* nature’s account, or the law of the universe—other meanings are possible—then in Heraclitus’ world of eternal change (DK 22B30, B49a, B91) and unified opposites Heraclitus (DK 22B60-63, B88, B103), mankind will always be “incapable of understanding” (DK 22B1-

2) that *logos*. The traditional interpretation of Heraclitus I have provided in this paragraph, far from being discarded, is nevertheless under ongoing exegesis and

challenge. For example, Kahn (1999), offering as a referent Heraclitus' discovery of the

Behind the Text: Music and Mathematics, Plato and Pythagoras (Continued)

Tuning

"The process of regulating the pitch of an instrument. On stringed instruments the tension of each string is adjusted by the turning of pegs or wrest pins until it is at its specified pitch. On keyboard instruments *c'* is tuned first, to a tuning-fork or other device, then *g* is tuned to *c'* with attention to the beats between the two notes; the slower their beat-rate the more nearly they are in tune. Next *d'*, *a*, and so on are tuned in an alternating sequence of perfect 4ths and perfect 5ths until the middle octave is complete (sometimes 3rds and major 6ths are used for particular reasons). Tuning is then extended to the rest of the octaves and finally to other ranks of strings or pipes. Because of the need for temperament, there are always some beats between notes" (Latham, 2002, p. 1301).

Monochord

"A string stretched between two fixed bridges or nuts over a calibrated rule on a long, narrow soundbox, used for measuring intervals and demonstrating their theory, for tuning other instruments, and as an instrument in its own right. It is said to have been the invention of Pythagoras (6th century BC); the Pythagorean theory of intonation is based on string-length ratios on the monochord" (Latham, 2002, pp. 792-793).

Temperament

"Temperament A method of tuning in which some concords are made slightly impure so that few or none will be unpleasantly out of tune. This became essential with the introduction of keyboard instruments. Voices and many other instruments can modify their notes according to context, varying the pitch slightly to keep in tune, but with keyboards all pitches are fixed. A major scale which is perfectly tuned starts with a major whole tone, followed by a minor whole tone, and then a semitone, measuring 204, 182 and 112 cents respectively, together making a perfect 4th of 498 cents (one cent is 1/100 of an equal-tempered semitone). Such a scale could be set on a keyboard instrument but it would be impossible to start a new scale on the second of those notes, because the next step would be a minor instead of a major tone.

The first mediaeval tempered scale was the Pythagorean, where every tone is a major tone and all 5ths except one are pure, exactly in tune. One 5th must be smaller than the others by 24 cents (an eighth of a tone, termed a Pythagorean comma), because the sum of 12 pure 5ths, each 702 cents, is 24 cents greater than that of seven 1200-cent octaves. A scale built in pure 5ths will never return to a pure octave without compromising one of the 5ths.

A further difficulty arises from the fact that the sum of three major 3rds, each 386 cents, is smaller than an octave by 41 cents, almost a quarter-tone. The result of compensating for this is that the better in tune one makes the 3rds, the worse the 5ths become, and vice versa. The Pythagorean temperament has perfect 5ths but some appalling 3rds, so sharp that the 3rd was regarded as a dissonance in the middle Ages simply because it was indeed dissonant. By the mid-15th century, and perhaps earlier, musicians including Arnaut de Zwolle were carefully planning their use of Pythagorean temperament – starting on B and tuning 5ths downwards from there, for instance, so that the bad 5th was the little used G#-B and there were four almost pure 3rds (D-F#, A-C#, E-G#, B-D#) in keys in which they wanted to write.

When harmony had evolved to the stage when almost any 3rd was required, a new temperament had to be devised, with all 3rds pure and 4ths and 5ths as nearly pure as possible. This was achieved by halving the 386-cent 3rd, taking the mean, or average, size of whole tone: 193 cents. The resulting temperament, called mean-tone, was constructed by tuning C-E pure and then tuning each 5th within that 3rd (C-G, G-D, D-A, A-E) a quarter of a comma flat. The only disaster that resulted was the size of the discrepancy between G# and Ab: the two notes which are the same pitch in equal temperament, are 41 cents apart in mean-tone, and using one instead of the other produces a chord so out of tune that it howls like a wolf – hence the expression "wolf 5th." There were also four wolf 3rds, wildly sharp, but these were kept in keys which composers took care to avoid (e.g. C#, F#, B and G# in a tuning cycle starting on C: it was always possible to move the wolves by starting the tuning on a different pitch).

(This Text Box continues on page 101.)

essential order of the cosmos inhering in *xynon qua* that-which-is-common-to-all, claims that the "only political attitude that we may safely extrapolate from the fragments is a lucid, almost Hobbesian appreciation of the fact that civilised life and communal survival depend upon loyalty to the *nomos*, which all citizens must share, ... but which may be realised under the leadership of one single man" (ibid., p. 3).

As for Parmenides (BC 515 – 460), Aristotle associates

him with Melissus and claims that Parmenides holds the first principle to be one and motionless *Physics* I 2 184b15–20 (Aristotle, 1929; 1952n, p. 259), an understanding

which he, Aristotle, debunks *Physics* I 3 185a10; I 3 186a5 – 35 (Aristotle, 1929; 1952n,

pp. 259, 260 - 261).

Plato too depicts “Parmenides, Melissus, and their followers”

Theaetetus 180 (Plato, 1921c; 1952v, p. 532) as

denying the universality of change and motion.

Reservations about Aristotle’s and Plato’s

motives for depicting others in various ways

are discussed on pages 43, and 73 - 74 in this

enquiry. Words

surviving in fragments attributed to Parmenides

(DK 28B1 to the ‘I cease’ statement in 7.8)

support a received traditional view of

Parmenides as advocate of a unified, motionless,

spatially limited, indivisible, and unified

being, that which “Never was or Will Be, because

Behind the Text: Music and Mathematics, Plato and Pythagoras (Continued)

Quarter-comma mean-tone was first discussed by Zarlino in 1571. Sixth-comma was an improvement as music became more chromatic in style, because though the 3rds were very slightly worse, the 5ths and 4ths were equally slightly better and the wolves were smaller and howled less. It is often used today for performances of early music. Wolves of some sort are inevitable in any temperament which uses the same correction all the way (a “regular temperament”) with a specific fraction of a comma. The only exception is equal temperament, which has the disadvantage that every interval is out of tune except the octave and that the 3rds (400 cents instead of the pure 386) are almost as bad as the Pythagorean. For that reason musicians try to avoid it except when playing with a piano. It is produced by tempering the 5ths, flattening each by 2 cents, to spread the 24 cent comma equally through the octave” (Latham, 2002, pp. 1262-1263)

Equal Temperament

“A system of tuning the scale whereby the octave is divided into 12 equal semitones. It is based on a cycle of 12 identical 5ths, each slightly smaller than “pure”, the reason being that a chain of 12 pure 5ths exceeds the equivalent of seven octaves by an interval known as the “Pythagorean comma”. To compensate for this, and in order for the circle of 5ths to arrive at a perfect unison, in equal temperament each 5th is smaller than pure by 1/12 of a Pythagorean comma. Another important aspect of equal temperament is the adjustment of the 3rds, so that three major 3rds, or four minor 3rds, are equal to an octave. To achieve this, major 3rds must be tuned slightly larger than pure, minor 3rds smaller” (Latham, 2002, p. 427).

Pythagorean Intonation

A system of tuning in which the 4ths and 5ths are untempered. It is named after the Ancient Greek philosopher Pythagoras, whose calculations of intervals in terms of string-length ratios (octave = 2:1, 5th = 3:2, ...) formed the basis of much mediaeval and Renaissance theory. A distinguishing feature of Pythagorean intonation is that the major 2nds and 3rds are larger, and the minor 2nds and 3rds smaller, than those of other tuning systems. The expressive quality of the 2nds in particular has led to the judgment that this system of tuning is especially well suited to late mediaeval polyphony” (Latham, 2002, p. 1016).

Quarter-comma mean-tone was first discussed by Zarlino in 1571. Sixth-comma was an improvement as music became more chromatic in style, because though the 3rds were very slightly worse, the 5ths and 4ths were equally slightly better and the wolves were smaller and howled less. It is often used today for performances of early music. Wolves of some sort are inevitable in any temperament which uses the same correction all the way (a “regular temperament”) with a specific fraction of a comma. The only exception is equal temperament, which has the disadvantage that every interval is out of tune except the octave and that the 3rds (400 cents instead of the pure 386) are almost as bad as the Pythagorean. For that reason musicians try to avoid it except when playing with a piano. It is produced by tempering the 5ths, flattening each by 2 cents, to spread the 24 cent comma equally through the octave” (Latham, 2002, pp. 1262-1263)

“Such sources as the Robertsbridge Codex (British Library Add 28550) show that fully chromatic keyboards were in use by the mid-14th century, and it seems likely that those instruments would have been tuned to a cycle of 11 pure 5ths and one “wolf” 5th, in accordance with the Pythagorean system ... The “wolf” 5th is necessary to compensate for the fact that a complete chain of 12 pure 5ths would exceed the equivalent of seven octaves by a small amount known as the “Pythagorean comma”. Hence the wolf 5th is smaller than pure by a Pythagorean comma to ensure that a complete cycle will produce a perfect unison. In earlier instruments the wolf 5th was usually situated between G# and Eb, but other locations could also be used; B-F# was common in the 15th century” (Latham, 2002, p. 1019).

Acknowledgement: I sincerely thank Michele Sheumack PhD, MSc, AMusA (Pianoforte), AMusA (Theory of Music) for her invaluable explanations of the physics and mathematics of sound that lie behind musical notation.

it Is now, a Whole all together, One, continuous” (DK 28B7, 8 translator’s capitalisation), that which is to be followed by reason (ibid.) in the service of the “IT IS”

(DK 28B2, translator's capitalisation) and the 'What Is' (ibid.), the way of truth, but not to the exclusion of "the opinions of mortals, in which there is no true reliability" (DK 28B1).

The traditional view of Parmenides is also under continuing exegesis and challenge. For example Kingsley, unlike Mitchell (2006, p. 15) who finds it difficult to accept Kingsley's view outright, places Parmenides in an ongoing diaspora of a Shaman class to whom the modern sense of witch-doctor or medicine man might apply (Kingsley, 1999, p. 25). Parmenides however appears decidedly clear in opinion about essential matters of mind—"For it is the same thing to think and to be" (DK 28B3) and to think rightly is to think the way of "Being and Reality" (DK 28B7-8).

Plato's interest in matters Pythagorean is well documented and discussed. Aristotle at *Metaphysics* 1 987a (Aristotle, 1952d, p. 505; 1989) states that Plato's system—scholars debate whether Plato has a system or not—most accorded with the Pythagoreans and that following Heraclitus and Cratylus Plato held, even in later years, the impossibility of knowing a world in a state of flux. As discussed earlier on pages 43 and 73 - 74 of this enquiry, possible gaming by Aristotle in his attributions to Plato and earlier writers, and by Plato too, in possible word massaging, may render both of them questionable referents and, depending on positions taken, may or may not require caveat grains of salt.

Riedweg claims that "had Pythagoras and his teachings not since the early Academy been overwritten with Plato" (Riedweg, 2008, pp. ix -x, 128) Pythagoras may have courted relatively little scholarly interest and that present understandings of Pythagoras and Pythagoreans are framed within a legacy of Neoplatonism and Neopythagorism (ibid., 48 - 59, 114 - 134). Tarrant (2000) focussing mainly, but not necessarily only, on Middle Platonism provides most detailed and instructive insights into the praxis of Plato's early interpreters. *Inter alia*, working within an overarching rubric of discernment of possible approaches to interpretation of Plato, and of possible criteria ancient interpreters may have used to group and/or separate dialogues for reading

purposes, for example communicative purpose, didactic content, commonality of doctrine or polemical content and the like, Tarrant indicates that from some perspectives the influence of Pythagoras might be seen in “*Parmenides, Sophist, Politicus, Timaeus* and *Philebus*” (ibid., p. 214).

Elsewhere (ibid., pp. 84 -86), in one section of his book, Tarrant finds Middle Platonists being rather a diverse group displaying varied views about interpretation, and that the Neopythagoreans did not consider themselves as constituting a Platonist movement (ibid., p. 84).

He names Moderatus (1st century AD) viewing Plato as one who, while trying to conceal the fact, nevertheless plundered Pythagoras. Tarrant also names Numenius (mid-2nd century) considering Plato to be reticent about Pythagoras, and ventures that opinions such as these advanced by Moderates and Numinous might contribute to a belief “that true Pythagoreanism can be teased out of Platonic texts by in-depth interpretation” (ibid., p. 84). It might be plausible he continues, to allow something esoteric being detected behind Plato’s text, something perhaps relevant to an “allegedly Pythagorean metaphysic that Pythagoreans, almost as a matter of faith, supposed to exist there” (ibid., p. 85).

Tarrant notes that even Proclus’ subsequent reference to Nicomachus of Gerasa’s tantalising possibility that of Zeno and Parmenides may have been members of a Pythagorean school might be sufficient excuse for a contemporary Pythagorean to examine the presence of the “One in the second part of *Parmenides*, for Pythagorean doctrine, making this, and the *Timaeus*, along with anything which looks promising in the Eleatic Stranger’s teaching in the *Sophist* and *Politicus*, the key sources of Pythagorean doctrine in Plato” (ibid., p. 86).

Nicomachus of Gerasa is accepted as flourishing circa 100 AD. Tarrant’s insights follow chapeau caveats he Tarrant, offers about obscurity and isolation of texts and uncertainty of meaning for some of the early commentators and interpreters he is discussing (ibid., p. 84). Hare (1999/2001, pp. 117 - 119) detects a broad influence of Pythagorism on

Plato, evidenced by the ideal republic of ideas being an esoteric version of Pythagoras' alleged Croton gathering, by Plato's use of mathematics in some of the dialogues, and by a commonality of approach Plato and the Pythagoreans apply to mysteries of soul.

Earlier research by Bremer (1984) and McClain (1976, 1984) touches on, among other things, Plato's adoption and use of Pythagorean mathematics. Bremer develops a case that, in recitation rather than in print, the so-called divided line *The Republic* VI 509d – 511e (Plato, 1952r, pp. 386 - 388; 1969a) divides the syllable count of the dialogue in a proportion close to that of the golden mean (Bremer, 1984, p. 85). He detects, in *The Republic*, a surrogate mathematical and musical framework based on Pythagorean octave and diatonic scale for which the interval is 2:1 and the generator is 3:2, perfect fifths. McClain (1984), working from multiple mathematical perspectives—in *The Republic* at 522c6 - 534d1 (Plato, 1952r, pp. 392 - 397; 1969a) music, astronomy, geometry and arithmetic are urged crucial and interdependent in education for the ruling class—claims that Plato's later dialogues abound with mathematical allegories (ibid., p. 1) which, building on foundational work by Brumbaugh (1954), he interprets as musical allegories (ibid., p. 1 – 16, then passim). Among other things, McClain employs

Tone Cycle Cities Constructed by McClain During his Musical Allegory Interpretation of <i>Republic</i> , <i>Timaeus</i> , <i>Critias</i> , <i>Statesman</i> and <i>Laws</i>				
City	Athens	Callipolis	Atlantis	Magnesia (Laws)
Character	moderate or best	celestial or ideal	luxurious or worst	practicable or second best
Tuning ⁽¹⁾	Pythagorean	tempered	just	Archytas
Generator ⁽¹⁾⁽²⁾	2 ^p 3 ^q	2 ^p 3 ^q	2 ^p 3 ^q 5 ^r	2 ^p 3 ^q 5 ^r 7 ^s
Limit of Population ⁽²⁾	≈ 20,000	<1000	12,960,000	5,040
Notes: (1) Extra source material to complement this table in particular and the enquiry's whole discussion of stichometric analysis of possible Pythagorean mathematical/musical framework in Plato's dialogues in general is provided in text boxes on pages 98, 99, 100, and 101 (2) Further explanation of nomenclature and meaning is available (McClain, 1984, pp. 17 - 32)				
Source: Constructed by Ian Eddington from McClain, (1984). <i>Pythagorean Plato: Prelude to the Song Itself</i> . (p.14). York Beach, Maine: Nicolas-Hays, Inc. (McClain, 1984).				

Brumbaugh's circular maps of Plato's cities, for example Atlantis, as tone cycles and makes a suggestion that the creator of *The Republic*, (Plato, 1952r, 1969a)

interpreted by some as a fascist, had not been interpreted as a musical humourist (ibid., p. 99).

Brumbaugh had, following ideas developed by Robin (1908b), analysed mathematical content in Platonic texts and constructed diagrams alluded to therein to conjecture a presence of a metaphor predicated on a 2:1 musical scale, a metaphor he detects employed in Plato's time in *Timaeus* 36c (Plato, 1925h, 1952w) in articulation of what he, Brumbaugh, calls the problematic dyad (1908b, p. 226). McClain, building on Brumbaugh's circular Platonic cities—Platonic cities are circular; their models are ‘tone-circles’” (McClain, 1984, p. 9)—is able to detect an underlying Pythagorean harmonic and tuning theory conducting dialectics in *The Republic*, *Timaeus*, *Critias*, *Statesman* and *Laws* (ibid., pp. 3 – 15, then throughout) and a shared spiritual tradition linking microcosm as soul and macrocosm as universe (ibid., p. 109) all be it subject to a “likely story” (ibid., p. 127) caveat he, McClain, inks into his conclusion.

Kennedy (2010), employing as did Bremer and McClain, stichometric analytical method, and in an effort to deepen understanding of the “connection between the mathematical structure of the dialogues and Plato's Pythagoreanism (ibid., p. 21), detects an underlying stichometric structure in some of the dialogues. He applies a computer algorithm—one which counts only Greek alphabet letter content—to so-called original texts, and marks intervals on those texts. He finds similar interval patterns in length and positioning of speeches contained in *Apology*, *Protagoras*, *Cratylus*, *Philebus*, *Symposium*, *Gorgias*, *Republic* and *Laws*; placement of positive and negative value concepts respectively between 8 and 9 twelfths marks, and 10 and 11 twelfths marks, within *Apology*, *Phaedo*, *Phaedrus*, *Republic*, *Symposium* and *Timaeus*; positioning of ideas of justice and ideal philosophers at or near the centres of *Apology*, *Euthydemus*, *Euthyphro*, and *Gorgias*; a twelve part musical scale structure in *Symposium* and *The Republic* wherein positive, so-called neutral and negative verbal themes in these dialogues are arranged in accordance with the so-called neutral, harmonious and disharmonious tuning architecture of the scale; location of the divided line explanation in *The Republic* very near to the alphabetic golden mean of the work; and a division of twelfths and its attendant twelve part musical structure not being found in dialogues “which are by general consent considered spurious” (ibid., p. 27) namely *On Justice*, *Minos*, *On Virtue*, and *Eryxias*—but present in the *First Alcibiades*,

Cleitophon, and the *Epinomis* “cautiously” (ibid., p. 19) regarded as genuine by some named scholars. Kennedy leverages from references to allegorisation in Derveni Papyrus studies to legitimise his stichometry; adduces established and respected scholars (Betegh, 2007; Brisson, 2004; Tarrant, 2000; M. L. West, 1992),—sometimes questionably—to urge, smooth, enhance through juxtaposition or assimilate positions he takes; names scholars (Annas, 1981; Burkert, 1972; J. M. Dillon, 1977; Thesleff, 1961, 1965) implicated in “an apparent resurgence of interest in Pythagoreanism” (J. B. Kennedy, 2011, p. 20), placing them next to a statement that “so-called “neo-Pythagoreans”, also from about the first century BCE, claimed that Pythagorean doctrines were symbolically embedded in Plato’s dialogues” (ibid., p. 20); and cites some scholars, including Burkert, less disposed to Pythagoreanism in Plato (Burkert, 1972; Huffman, 1993, 1999; W. Jaeger, 1967), concluding that his contribution “does clarify, in a surprising way, Aristotle’s once puzzling view that Plato was a Pythagorean” (J. B. Kennedy, 2010, p. 27). He cites neither McClain nor Bremer.

Horky (2013, pp. 201 - 260) argues that Plato was influenced by mathematical Pythagoreanism, a kind of mathematics philosophy emanating from musical harmony, and that he transformed it into a philosophy concerning being at the level of the cosmos and the level of the human. *The Republic* 522c – 531c (Plato, 1952r, pp. 292 - 297; 1969a) provides insights into Plato at work on the importance of mathematics for philosophy in general and education in particular.

Refocus on Ethics as Practical Philosophy of *Polis*

In returning to discussion of Ethics as practical philosophy of *Polis* it is acknowledged that, according to Demos (1927/2004, pp. i - ii), Guthrie (1975a, p. 88) and Copleston (1966, pp. 203, 163 - 207), Plato appears to have believed in a possibility of human access to absolute moral and scientific knowledge and that he expressed this belief in his doctrine of the forms. Real existence was to be found outside of space and time, in a parallel world, a condition slowly expounded in *Timaeus* (Plato, 1925h, 1952w).

What insights about such matters and about virtue or good or *arete* of mankind do the Platonic dialogues provide and by what manner of argument are these insights revealed?

Plato found the good or virtue of mankind to be wisdom thought of as knowledge-to-the-attainment-of-happiness *Meno* 88a-89a (Plato, 1952l, pp. 183 - 184; 1967c). He arrived at this conclusion by first demonstrating that the hedonism of the Sophists, that is, what brings pleasure is good, could not be the whole answer because some pleasurable actions lead to harm. Under this approach only those pleasures judged not to bring harm are good, that is, pleasure must be referred to a higher virtue or efficiency, before being judged good so that pleasure, in and of itself, cannot be the virtue of mankind. This higher virtue or efficiency which might allow mankind to differentiate between harmful and unharmed pleasure was knowledge understood as *nous* or discernment, which discernment at work in calculating between harmful and unharmed pleasure he names wisdom. In particular, wisdom so defined is the knowledge of what is good and beneficial rather than evil and harmful. For example, in *Meno* it is wisdom alone which calculates between good and bad courage, and good and bad justice, indeed in general, between the good and bad of “all that the soul attempts and endures” *Meno* 88c within 87b–89a (Plato, 1952l, pp. 183, 183 - 184; 1967c). In so doing wisdom leads mankind to the beneficial or useful, understood as something which never harms. Plato’s pursuit of wisdom does not end with his revelation of its discerning power.

As earlier discussed on pages 87 to 89, the Greek sense of the good or virtuous, *arete*, is predicative. It has the sense good–at-what and the question of the good of mankind is not answered until the at-what is specified.

A general picture of the at-what begins to develop in *Gorgias* 503c – 505c (Plato, 1952g, pp. 282 - 283; 1967b). Here Plato reveals that the virtue of the tradesman is found in the *taxis* and *kosmos* of their work under which *taxis* and *kosmos* everything is performing its right function in the system and ordered relationship to the whole. He links this argument to the classic Greek values inherent in the human soul. This position of virtue as *taxis* and *kosmos* is taken up again in the *Cratylus* 386e – 390e (Plato, 1921a; 1952q,

87 - 89). Through these discussions Plato proposes that the good-at-what of the soul, its *taxis* and *kosmos*, is shown to consist of obedience to the law, justice, and self-control. This condition is found again in *The Republic* I 351e – 354c (Plato, 1952r, pp. 308 - 310; 1969b) where *arete* as technical virtue is established through explanations referring to body organs, the eye and the ear, tools such as pruning hooks, and the skills of trades peoples. This idea of *arete* as good-at-what is then carried forward to a discussion about the emergence of the state, and specialisation within the state, and each person in their own specialisation and place, doing their own skilled jobs, which is nothing other than the *taxis* and *kosmos* of the State. He extends the argument to the presence of three general skills classes in the state, namely, artisans as a whole, guardians and philosopher kings *The Republic* II 368e – 376e (Plato, 1952r, pp. 316 - 320; 1969b).

While Plato proceeds by analogy to establish the at-what of humanity, his reasoning is predicated on introspection, observation, and his fundamental tenet that in humans two

The Charioteer Emerges as a Conductor?

The ultimate consciousness product occurs from those numerous brain sites at the same time and not in one site in particular, much as the performance of a symphonic piece does not come from the work of a single musician or even from a whole section of an orchestra. The oddest thing about the upper reaches of a consciousness performance is the conspicuous absence of a conductor before the performance begins, although, as the performance unfolds, a conductor comes into being. For all intents and purposes, a conductor is now leading the orchestra, although the performance has created the conductor—the self—not the other way around. The conductor is cobbled together by feelings and by a narrative brain device, although this fact does not make the conductor any less real. The conductor undeniably exists in our minds, and nothing is gained by dismissing it as an illusion.

Damasio, A. (2010). *Self Comes to Mind: Constructing the Conscious Brain*. (pp. 23 - 24). Random House. Kindle Edition. (Damasio, 2010, pp. pp. 23 -24)

coincident conflicting urgings within the mind cannot come from the same source at the same time *Timaeus* 52c – 52d (Plato, 1925h; 1952r, pp. 457 - 458). Hence in respect of his charioteer metaphor of the soul expounded at *Phaedrus* 246a – 254e (Plato, 1925e; 1952o, pp. 124 - 128), taking for example a case say of an indignantly courageous person who discerns on a particular occasion to retreat by tactically withdrawing rather than to give in to a desire to flee, *nous*, discernment, the power of

thought, might be the charioteer, the desire to flee might be the recalcitrant horse, and courage—it is engendered by *thymos* understood as spiritedness plus *nous* and is a kind of strength of will begotten of righteous indignation (Guthrie, 1975a, p. 114)—might be the white or noble horse, which favours the side of reason. Each of these states emerges from a different part of soul.

In *The Republic* IV 434e -435c (Plato, 1952r, p. 350; 1969a)—Books II – X tentatively accepted as being written about the same time as the *Phaedrus* (Plato, 1925e, 1952o), dating of the dialogues being problematic as discussed on pages 9, 10 and 11—Plato introduces a partitioned soul construct to elucidate a theory of the state. He reasons that if the idea of justice is common to the individual soul and to the state, and if a tripartite soul is common in mankind and an accurate capture of mankind’s psyche, then a three-tiered city of ideas predicated on it is, from a psychological perspective at least, plausibly vindicated. Establishing again in *The Republic* IV, 436b – 437a (Plato, 1952r, pp. 350 - 351; 1969a) the idea that conflicting or contradictory states of soul in respect of things apparently the same, when experienced at the same time, emerge from different parts of the soul, and employing it thereafter, Plato establishes a link between the just man and the just state *The Republic* IV 437a – 444a (Plato, 1952r, pp. 351 - 355; 1969a). In the partitioned soul construct of *The Republic* the conflict to be managed is between the passions, *thymos* or spiritedness, and the appetites, *epithumia* while at *Phaedrus* 253d – 254e (Plato, 1925e; 1952o, p. 128) the conflict requiring management is between *thymos*, noble spiritedness, and *eros*, erotic love, and a reasoning controlling charioteer has his work tested in the ensuing battle Plato describes—“love, love changes everything” (Webber, Black, & Hart, 1989) so goes a recently ever-popular wisdom.

Guthrie depicts *thymos* also spelled *thumos* as the executive arm of reason, and notes that without *thymos* reason cannot prevail over desire. He names *thymos* will-power and states, without explanation, that “it is possible (though that astonishing man Socrates does not know it)—[sic]—to say ‘Video meliora, proboque, deteriora sequor’” (Guthrie, 1975a, p. 115, my square brackets), Socrates, he says, (sic) left that “third agent, the *thymos*, that element of will-power ... strangely ... out of account (ibid., p. 115). Socrates spoke, Plato wrote, so that when such a scholar as Guthrie states what Socrates does or does not know, he is working within that convention, discussed on pages 9, 10 and 11 of this enquiry, in which information about that man Socrates is gathered, in so far as it can be gathered, through exegesis of so-called early and late dialogues separated by so-called middle and/or transition dialogues such as *Gorgias* (Plato, 1952g, 1967b), *Meno* (Plato, 1952l, 1967c), and *Phaedo* (Plato, 1952n, 1966c). For example Vlastos

(1991, pp. 47 - 49) outlines ten ways in which Socrates of the early dialogues differs from Socrates of the middle dialogues.

Without *thymos* mankind might well resolve issues of conflict by a ‘video ... sequor’—an ‘I-see-and-approve-of-the-better-but-follow-the-worse solution’, a values position acknowledged by Ovid (BC 43-AD 18) at *Metamorphoses* VII, 20 - 30 or VII 25 – 30 (Ovid, 1826, p. 159; 2008, p. 144). There is scholarly interest in parallels between Plato’s tripartite soul and Freud’s tripartite division of id, ego and superego Sagan (1977, pp. 82 – 84) and Ubersax (2012, n. p.) pronouncing Plato’s arrangement superior, there being a wider consensus that the two constructs do not support close comparison. Ubersax also attempts to link Jung’s animus possession to *thumos* possession as a taking over of one part of soul, now psyche, by *thumos* (ibid.). Lear (2001, p. 181) compares Plato and Freud. His reading is that in Plato the appetitive, being unable to harken but to the reasonable, is not unlike Freud’s id sometimes not being able to listen to reason, but he is unable to find consistency on this point in Freud (1992, pp. 156 - 181; 2001, p. 198). Lear also compares Plato and Freud in respect of relationships between a person’s inner life and their cultural environment, what he calls a relationship between the *intrapsychic* and the *interpsychic*, and which in Plato as *psyche-analysis* and *polis-analysis*, are two aspects of a single discipline, psychology, which holds people and Polis/P(P)olis together (Lear, 2001, pp. 169 - 170) . His link to Freud in this case is Freud’s relationship between ego and superego in a context of their being in part a product of internalisation of parental figures, that is, a product of *intrapsychic* and *interpsychic* transaction (ibid., p. 194). The relevant locations in Freud are (Freud, 1957-1981a, pp. 29 - 31; 1957-1981b, pp. 249 – 250). A compilation by Eversen (1991) assembles a number of contributions on psychology of soul.

Plato continues to be of interest to 21th century psychologists. On the matter of reason having to enlist cooperation from spirit in order to manage passion Oliver (2012) finds differences between Plato’s construction of soul *qua* reason, spirit and appetite—charioteer, white horse and black horse as he reads them—and their possible equivalents ego, and superego and id in Freud’s construction of psyche. Freud, he says, is more

circumspect than Plato about ego's ability to control passion, that is, reason's ability to control appetite. He claims that Nietzsche provides a way to resolve differences through insight he, Nietzsche, provides about "the triumph of 'Socratism' over Greek tragedy's elaboration on the tension between Apollonian cultural creativity through form, and Dionysian surrender to the obliteration of form and individuality in favour of ecstatic union with others" (ibid., p. 77).

More recently, Hobbs (2006, pp. 9 - 23) argues that *thymos* or *thumos*, henceforth used interchangeably, the spirited element of soul, first appeared in *The Republic* and is associated with a wide range of incoherent human attributes such as courage and aggression, self-disgust and shame, justice and anger, and obedience to the state above obedience to the father, and that it emerges in Plato as a "living repository of Homeric values" (Hobbs, 2006, p. 141). Hobbs argues that courage is impossible without *thumos* (ibid., p. 9), that *thumos* is derived in part from responses to education, poetry, music, society and culture (ibid., pp. 11 - 12), but that unlike reason which questions, *thumos* is concerned with moral issues of self-worth conditioned by an individual's own conception of what it means to be noble. Her general argument is that Plato, in *The Republic*, attempted to replace the ungoverned Homeric *thumos* and courage of Achilles, with the moderate *thumos* and courage of a reasoned Socrates, or a "suitably purified" (Hobbs, 2006, p. 239) Odysseus "recovered from his own ambition" (ibid., p. 29), but she is sanguine as to the likelihood of such a change occurring (Hobbs, 2006, pp. 262 - 267). The full picture found in the *Myth of Er* in *The Republic* X 614b - 621d (Plato, 1952r, pp. 437 - 441; 1988), from which myth Hobbs extracts the possibility of a purified Odyssean *thumos*, is more complicated. In that myth, Odysseus chose for his next life the soul of a private man without cares, in contrast to Orpheus who chose a swan out of enmity towards women, Ajax who chose the life of a lion because of mankind's former injustice to him, and Agamemnon who chose the life of an eagle because he hated human nature so much. Such choices invite a plethora of speculation.

Notwithstanding general contention and questioning of the role Ethics plays in the political philosophy of the *Polis*, Plato does urge in *The Republic* IV, 427e - 433 (Plato,

1952r, pp. 346 - 349; 1969a) that four classic Greek virtues are present in a three-tiered human soul. I briefly discussed this finding earlier on page 59. Wisdom resides in the discernment of *nous*, courage is present in the battle between reason and desire, temperance consists of self-control won through the combination of *nous* and courage, and justice is the soul's *arete*, its proper function, the just man being the happy man.

Plato constructs a three-tiered natural aristocracy, his *Republic*, predicated on his three-tiered partitioned soul. The three classes of his Republic are, as intimated above on page 109, rulers or philosopher kings, guardians or a kind of soldier class, and artisan citizens, and he builds the same four Greek virtues natural to the soul into his so-called natural aristocracy *The Republic* IV, 433 - 439 (Plato, 1952r, pp. 349 – 352; 1988). Reasoned wisdom resides in the ruling class. Courage resides in the soldier class, the guardians who defend the city. Temperance is found in agreement amongst the citizens about who is to rule. *Arete* or justice consists of *cosmos* and *taxis* begotten of each of the classes performing their proper functions free from interference with the legitimate functions of others. This structural consistency, the presence of the four virtues in the microcosm of humans and their *Polis*, and the origins of virtue in the macrocosm of nature where virtue is obedience to place under *moira* or fate, might very much reflect Plato's exposure to Pythagorean thought and to ancient values petrified in Homer. The three-tiered republic is able to emerge because not every human can be a ruler, that is, not every person is full-souled, some acquire all of the virtues while others acquire few.

Socrates' defeat of Thrasymachus and his allies in the might-is-right debate *The Republic* I 338a – 364 (Plato, 1952r, pp. 301 - 313; 1969a), and in his win in the honour-among-thieves-argument in *The Republic* I 351c within the context of 351a – 352a (Plato, 1952r, pp. 308 - 309; 1988), both reveal that the justice so derived for Plato's ideal republic leaves no room for a contention advanced by the Sophists that the best form of justice is the strong taking their so-called rights. Locke, all those years later, was to point out that honour among thieves does not prove justice innate (Locke, 1825, p. 22). There are, though, a number of views about the kind of thinking that Thrasymachus represents. Johnson (2005, pp. 129 - 162) holds that Thrasymachus' dialogical role is to

provide a disparaging commentary on followers of an out of date Hesiodic idea of justice. Nonetheless, Plato's finding that justice, waited on by obedience to the law, temperance and wisdom, as the work of the soul, is a big step towards justice as the domain of *nomos* as culture, or person-made law, as explained on pages 57 to 64, and a shift away from the absolute justice of the gods.

By way of this step, Pythagorean soul and Homeric virtues, even though they appear to share an ancient common origin in *moira* as totem space imperative and ritual, might, under reappraisal, be said together to have confronted those imperatives of fate and gods, and established an idea of justice as something superior to dominance through brute force. This long and far away development in the political philosophy of justice, complex now to present generations due to its entanglement in myth, ancient custom and heroic stories, records Plato's dialogical Socrates' innovative enquiry into the human condition and might be read, for whatever reasons, as a brave Socratic stand for *nomos* and *Polis*.

In summary, four classic Greek virtues are conjectured as inhabiting the human soul: justice, courage, temperance and wisdom. These virtues or technical efficiencies which Plato enshrines in his ideal republic at the design stage are read as having their origins in nature, social more and morality being, *inter alia*, extensions of nature. So constituted these virtues may be viewed as bringing a pinch of real world influence to the vexing question of how to circumscribe human values and behaviour. Plato found the universal virtue or good of humankind to be wisdom understood as an ability to discern between harmful and unarmful pleasures. This universal virtue, humankind's *arete*, discloses itself when *nous* discerns happiness. *Arete's* good-at-what consists of obedience to the law, justice and self-control. In its work of discernment *nous* must know and engage with knowledge of the good-at-what prescribed by the multitude of job tasks, and in such a manner of account virtue is some kind of knowledge as earlier discussed in the text on pages 87 to 91 and in text boxes on pages 86, 87, 88, and 89.

I continue with the purpose of arguing that in Plato, Ethics and Science are inextricably interwoven, and so too his ontology and epistemology. In the next paragraph I resume articulation of Plato's complex cosmogony by beginning a discussion on the status he bestows upon Science as knowledge, and on the role Science plays in human understanding and the political philosophy of *Polis*.

Step 3 Continues
Platonic Science and Political Philosophy of *Polis*

Plato's usage of the term Science can be ascertained from his epistemology and ontology. For example, as revealed earlier on pages 59 and 89, virtue in Plato's Ethics, is reasoned to be some kind of knowledge and as subsequently discussed in this enquiry Plato calls the highest form of knowing *Science*. According to Copleston Plato inherited Socrates' view that there can be knowledge "in the sense of objective and universally valid knowledge" (Copleston, 1966, p. 142) and that there can be "knowledge of eternal values which are not subject to the shifting and changing impressions of sense or of subjective opinion, but are the same for all men and for all peoples and all ages" (Copleston, 1966, p. 143). For Plato true knowledge must be infallible and must be about existence, about what is. Objects of sense can thus not be objects of true knowledge because sense perception reveals change, reveals a thing's coming to be, being, and ceasing to be, rather than the immutable or permanent what is. Change *per se* is permanent. Sense perception can also be misleading as in the seeing of a mirage and true knowledge must therefore involve some further process beyond reflection and judgement alone. True knowledge is not the same as sense perception of individual objects or true belief about individual objects.

Where then does this so-called true knowledge reside?

Note: Formatting imperatives specific to the software combination being used require that the text continues on page 120, that is, after Table 6.

Table 6: The Forms in Plato from the Human Condition to the Natural and Universal Condition

Stages of Intellectual Development	Dialogues by Stage of Intellectual Development	Definition of the Forms	Epistemology and/or Ontology	Overview
Socratic Dialogues	<p><i>Euthyphro</i> (piety) <i>Charmides</i> (temperance) <i>Laches</i> (courage) <i>Lysis</i> (friendship) <i>Hippias</i> <i>Majeur</i> (beauty)</p>	<p>Form or idea is the element common to a plurality of beings which are called by the same name. It is the one in the many and is the basis of Socratic definition. Given that the subjects of the dialogues (piety, temperance, courage, friendship and beauty) have no specific physical referents in natural being, the forms do not have a separate existence. Rather they are “moral and aesthetic concepts framed by the individual in order that he may be consistent in thought, word and deed, and that he and his interlocutor may not misunderstand one another” (H. Jackson, 1918, p. 56).</p>	<p>In these so-called early dialogues Plato employs Socrates in applying a method, that is, Socrates’s now-namesake method, in search of consistency of meanings of words, that is consistent knowledge, that might, inter alia, be used to describe moral dimensions of action. One received assessment of this method is that listeners participating in its cross examining dialectic are presumed brought to a state of lesser ignorance, a state which, after aporistic ejection from the dialogue, informs and sustains moral behaviour in the active world. Post dialogue participants, once having drawn their own opinions from the dialectic, hopefully behave less badly in the active world.</p>	<p>These dialogues reflect Plato’s exposure to Cratylus’ theory and to Socrates and they are his sequel to Democritus’ abandoned attempt to build a scientific cosmology and cosmogony and Cratylus’ limited attempt to find permanence under the observed flux and change of the natural world. The dialogues employ the destructive element of Socratic dialectic leaving the reader themselves to supply the constructive conclusions. The dialogues are a continuation of the Socratic search for consistency of thought about the moral issues of the dialogue: a search which stops short of dogmatic reconstruction of Socrates (sic.).</p>

Table 6: (continued)

Stages of Intellectual Development	Dialogues by Stage of Intellectual Development	Definition of the Forms	Epistemology and/or Ontology	Overview
<p>The Educational Dialogues which contain Plato's rudimentary Theory of Ideas</p>	<p><i>Protagoras</i> <i>Gorgias</i> <i>Phaedrus</i> <i>Meno</i> <i>Euthydemus</i> <i>Symposium</i></p>	<p>Plato postulates, through myth within the dialogues, really existent unities of such entities as self-justice, and self-temperance, which temporal phenomenal pluralities are but imitations brought to consciousness by a process of reminiscence.</p> <p>In this stage of development the forms as "ideas are moral and aesthetic unities, eternal, substantial, separately existent; but we are not told how the particulars participate in them, nor what the things are which have ideas corresponding to them (H. Jackson, 1918, p. 56).</p>	<p>Plato extends and develops and through speculative and poetic myth postulates a rudimentary theory of being—the reality of existing forms—which becomes the basis for a rudimentary theory of knowing.</p>	<p>The dialogues reveal a growing awareness of the limitation and insufficiency of the Socratic dialectic as a basis for education and a perceived need to replace the personal consistency sought through the dialectic with an objective truth.</p> <p>The education dialogues criticise early and contemporary theories of education. The <i>Protagoras</i> pits the educational method of Protagoras and the Sophists against that of Socrates. The <i>Gorgias</i> and the <i>Phaedrus</i> respectively address moral and intellectual aspects of the forensic argument and debate rhetoric of Gorgias and the political rhetoric of Isocrates. The <i>Euthydemus</i> makes fun of the existing eristic for argument and debate. The <i>Phaedrus</i> and the <i>Symposium</i> in particular reveal the speculative mythical demonstration of the existence of formal realities.</p> <p>The beginning of the development of the closeness of the one, the beautiful and the good, the importance of Science above opinion, and the ethical authority of reason above sense emerge in these dialogues.</p>

Table 6 (continued)

Stages of Intellectual Development	Dialogues by Stage of Intellectual Development	Definition of the Forms	Epistemology and/or Ontology	Overview
Earlier Theory of Ideas	<i>Republic</i> <i>Phaedo</i> <i>Cratylus</i>	Here the forms are as they are in the educational dialogues except that they now extend to the case of natural objects.	(1) Beside the earthly transient pluralities of known, that is, sensed phenomena, which become objects of opinion, there are corresponding intransient immutable forms which really exist and become objects of knowledge. (2) Wherever a plurality of particulars is called by the same name there is a corresponding form. Thus forms exist as much for chairs and tables as they do for good, bad or ugly. (3) It is the particular's participation in the idea that makes the particulars what they are— <i>Phaedo</i> 100d; <i>Republic</i> 476. (4) The idea, that is the form of the good, is foremost among the ideas. As a result theories of being, knowing and predication emerge. It is a theory of being because the ideas are eternal and immutable, a theory of knowing because Plato ascends “from the observational particulars through Socratic definitions to a definition of the self-good, and thus converts provisional definitions of things into certified representations of ideas” (H. Jackson, 1918, p. 57). It is a theory of predication “in as much as it affords or seems to afford an answer to certain logical paradoxes which had sorely perplexed Plato's contemporaries and for the moment himself” (ibid., p. 57). For example it was used to address the problem of the like and unlike appearing in the one particular representation.	There emerges the beginning of a systematic theory to address the three great questions: What is being? What is knowledge? What is predication? The forms in (1), in the cell immediately to the left, which have been carried forward from their stage of development in the educational dialogues are transformed (by (2), (3) and (4)—again in the cell immediately to the left—from the poetical and mythical expression into a theory of being, a theory of knowing and a theory of predication.

Table 6 (continued)

Stages of Intellectual Development	Dialogues by Stage of Intellectual Development	Definition of the Forms	Epistemology and/or Ontology	Overview
<p>Later Theory of Ideas</p>	<p><i>Parmenides</i> <i>Philebus</i> <i>Timaeus</i> <i>Theaetetus</i> <i>Sophist</i> <i>Statesman</i></p>	<p>Plato postulates that forms exist only where there are fixities in nature. Wherever natural particulars are called by a common name, there exists an objective, immutable form. Here the forms “are unities from which nature’s fixities—the universe, the four simple bodies, the stars, and the animal and vegetable kinds—are respectively derived; they are substantial and eternal, they are the thoughts of universal mind; they are not imminent in particulars, but are imitated or reflected as particulars in space” (H. Jackson, 1918, p. 60)</p>	<p>1 “Beside pluralities of phenomena, transient, mutable, imperfect, which come into being, and are objects of opinion, there are unities, eternal, immutable, perfect, which really exist, and are objects of knowledge” (ibid., p. 60). There are qualifications expressed below as supplementary articles. 2 “The supplementary articles are as follows: (a) there are substantive, self-existent ideas ... of the universe: of fire, air, water, earth; of the several stars; and of the several animal and vegetable species; but of nothing else, (b) it is not the idea’s immanence in particulars, but the imitation or reflection of the idea in matter in space that brings particulars into existence and makes them what they are, (c) unity = mind = good = god is the cause, the sole cause of all things: ... of the ideas, of particulars and even of its own correlative plurality which = space = evil = necessity, (d) the ideas are the thoughts of the sole cause, namely unity or mind, (e) infinite mind develops within itself a complete universe of thoughts, primary and secondary, and this universe of thoughts, as seen from within by a finite intelligence included in it, is our universe of things” (ibid., p. 60). Universal mind is the sole cause of the universe and everything that is in it.</p>	<p>The <i>Parmenides</i>, <i>Philebus</i> and <i>Timaeus</i> are chiefly ontological. The <i>Parmenides</i> refutes Zeno’s contention that likes cannot be unlikes by arguing that the like and unlike can be in the one particular object by that object’s participation in the ideas of like and unlike. The <i>Philebus</i> and <i>Timaeus</i>, <i>inter alia</i>, address the manner in which the one can be “known, opined, perceived” (ibid., p. 58), and in which “the infinite many can be conjoined in the one” (ibid.) and “diverse predicates can be affirmed” (ibid., p. 58). Questions raised in the <i>Parmenides</i> become the foundation for discussions in the remaining dialogues. In these discussions the earlier theory of the ideas is replaced by the later theory of ideas. In particular, as a group, the <i>Theaetetus</i>, <i>Sophist</i>, and <i>Statesman</i>, <i>inter alia</i>, address the questions of (a) how the one, if it is negatively determined, that is, if it is determined by knowing what it is not, can be known through predicates affirmed of it, and (b) the otherwise nonexistence of the one and its impossibility of being known.</p>

Table 6 (continued)

Stages of Intellectual Development	Dialogues by Stage of Intellectual Development	Definition of the Forms	Epistemology and/or Ontology	Overview
Professional Dialogue	<i>Laws</i>	The question is open. Two world souls are postulated one is beneficent, and god and another is malevolent, the devil. Jackson (1918, p. 60) postulates that god and the devil are respectively the providence and necessity of the <i>Timaeus</i> but that there is no reason to assume that Plato had abandoned his henism or one.		Having established, through the doctrine of the forms and natural kinds based upon them, that a foundation exists for the scientific study of plants and animals—minerals provided something of a problem for the doctrine—Plato entrusts the study of biological species to his nephew Speusippus and returns to review his earlier Ethics and sociology. According to Jackson (ibid., p. 60) Plato had, in his maturity, come to know that mankind, being human and flawed, cannot of themselves come, through knowledge of the self-good, to a knowledge of the ideas and a philosophical morality based upon it. Consequently, society is unable to dispense with “popular and civic morality” (ibid., p. 60) and for its maintenance “legislation is indispensable” (ibid. p. 60). Leaving Science and metaphysics behind Plato proceeds in the <i>Laws</i> to provide “for the guidance of his countrymen, a complete code of enactments” ibid., p. 60. In the earlier <i>Republic</i> , he left such enactments and “all [of] the responsibilities of administration” (ibid., p. 60 my brackets) to “his trained magistrates” (ibid. p. 60).

Source: Constructed by Ian Eddington from Copleston, F. (1966). *A History of Philosophy*. (pp. 142 - 265). London: Burns and Oates Limited; Jackson, H. (1918). *Plato and Platonism*. (pp. 54 - 61). In James Hastings (Ed.) *Encyclopaedia of Religion and Ethics* (Vol. 10). Edinburgh: T. & T. Clark; Plato. (1952). *Apology*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 200 - 212). Chicago: William Benton; Plato. (1952). *Charmides*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 2 - 13). Chicago: William Benton; Plato. (1952). *Cratylus*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 85 - 114). Chicago: William Benton; Plato. (1952). *Euthyphro*. In *Plato*. (Vol. 7, pp. 191 - 199). Chicago: William Benton; Plato. (1952). *Gorgias*. In *Plato*. (Vol. 7, pp. 252 - 294). Chicago: William Benton; Plato. (1952). *Laches*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 26 - 37). Chicago: William Benton; Plato. (1952). *Laws*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 640 - 799). Chicago: William Benton; Plato. (1952). *Lysis*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 15 - 25). Chicago: William Benton; Plato. (1952). *Meno*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 174 - 190). Chicago: William Benton; Plato. (1952). *Parmenides*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 486 - 513). Chicago: William Benton; Plato. (1952). *Phaedrus*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 115 - 141). Chicago: William Benton; Plato. (1952). *Philebus*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 609 - 639). Chicago: William Benton; Plato. (1952). *Protagoras*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 38 - 64). Chicago: William Benton; Plato. (1952). *Republic*. In R. M. Hutchins *Plato*. (Vol. 7, pp. 295 - 441). Chicago: William Benton; Plato. (1952). *Sophist*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 580 - 618); Plato. (1952). *Statesman*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 580 - 608). Chicago: William Benton; Plato. (1952). *Symposium*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 149 - 173). Chicago: William Benton; Plato. (1952). *Timaeus*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 442 - 447). Chicago: William Benton; Plato. (1974). *Theaetetus*. Chicago: University of Chicago Press; Plato. (1952). *Phaedo*. In R. M. Hutchins (Eds.), *Plato*. (Vol. 7, pp. 422 - 447). Chicago: William Benton; Plato. (1952). *Symposium*. In R. M. Hutchins (Ed.), *Plato*. (Vol. 7, pp. 149 - 173). Chicago: William Benton.

For Plato true knowledge was to be found in universals, forms accessible by processes beyond sense perception: and each such form carried with it an objective reality.

Particular sensual objects were imperfect glimpses of objectively real forms and the process of objectivity extended beyond the objects of natural Science to ethical concepts as well. It may appear strange to a Post-Modern mind, but Plato sought to explain the relationship between the objective world of forms and the so-called real or sensual world of the earthly particulars first, by engaging with elements of the human condition, courage, hate, and so on, and subsequently, by extending his argument to physical objects of sense perception. All of the hard work of tracing the progress of his theory of forms from the human condition to the natural condition is discussed in detail below in Table 6 beginning on page 115 outlines in detail Plato's intellectual journey to his final position on forms. Its purpose is to provide a basis upon which, by being pronounced objectively real existences, forms become of central importance in Plato's epistemology and ontology. Table 6 intentionally breaks the white space layout conventions generally employed throughout the enquiry both to accommodate software formatting imperatives and for ease of reading and information access.

What then is the role of the forms in Plato's epistemology and ontology?

Answering this question constitutes another step in this enquiry's extraction of Platonic usage of the term Science from Plato's epistemology and ontology.

In Plato's parable of the line in Table 7—the line is the heavy vertical line at the centre—mankind ascends from the lowest ignorance of opinion to the highest state of knowledge through a series of discreet conditions of mind. The horizontal double lines indicate these discreet steps but the table geometry does not incorporate possible golden mean proportions.

Opinion is not true knowledge and the basis on which it is separated from true



Source: (Giorgione, c. 1510, completed by Sebastiano del Piombo). (artists). *The Three Philosophers*. (oil on canvas). Kunsthistorisches Museum, Vienna: Philosophy and Philosophers in Art. Are the philosophers Marcus Aurelius, left, Averroes, centre, and Aristotle, Right, standing outside of Plato's cave in this allegorical painting? Conjecture abounds about the content and meaning of this painting.

knowledge is largely ontological: the objects of opinion are images, while those of knowledge are original universal forms, with the exception that mathematics, which although it is classed as knowledge, is not the highest form of knowledge. Mathematics proceeds by intelligible particulars rather than by sensible particulars. Progress up the line is not continuous but consists of conversions.

Plato's parable of the line is further articulated in *The Republic* VII 514a-517e (Plato, 1952r, VII, pp. 388 - 389;

1969a) in his parable of the den or cave. Humans in a cave chained with their backs to its entrance are unable to look at one another. Behind them is a wall and walkway so constructed that statues and figures of animals and other objects can be carried across the walkway so that they protrude above the wall. Between the wall and walkway structure, and the entrance to the cave, there is a fire so positioned that it projects shadows of those walkway statues and figures onto the back wall of the cave. The chained humans can only watch the shadows projected by the fire onto the back wall of the cave. They as a class are slaves to rhetoric, and they inhabit the first degree of opinion.

Were one of the chained persons to break away and after a time see the statues and figures themselves, he or she (in Plato he) would enter the second degree of opinion having been converted from shadow and sophistry to a more concrete and substantial world. If that individual perseveres and exits the cave they will see in nature, under the sun's illumination, the actual beings whose likeness they saw in the cave, first in silhouette form, and then in statue form. Were an escapee to be able to look at the sun—

“he who gives the season and the years, and is the guardian of all that is in the visible world, and in a certain way the cause of all things which he and his followers have been accustomed to behold” *The Republic* VII 516b – 516c (Plato, 1952r, VII, p. 388; 1969a)—the escapee’s final conversion to the highest state of true knowledge would be complete. The escapee sees the sun in its “own proper place” *Republic* VII 516b (Plato,

Table 7: Plato's System of Knowledge—His Parable of the Line

Epistemological Dimension	Conditions of Mind	Objects	Ontological Dimension
knowledge	Pure reason: the state of mind that uses the hypotheses of the previous stage as starting points but progresses beyond them to ascend to first principles. It is a state of abstract reasoning and dialectic which does not directly use the images of opinion.	Originals, archetypes, first principles or forms	the invisible world
	Hypotheses about the objects of opinion	Imitations of the objects of the lower stages taken as hypotheses and used to reach conclusions: for example the drawings of the geometer used in geometrical proofs in mathematics. The objects are “those which a person can only see with the eye of the mind”— <i>Republic</i> 510e – 511a (Plato, 1952r, p. 387; 1969a).	
opinion	Second degree of opinion	Images of real things about us “animals which we see, and everything which grows or is made”— <i>Republic</i> 510a (Plato, 1952r, p. 387; 1969a).	the sensible world
	First degree of opinion	Images, shadows, reflections in water, and bright things, false understandings occasioned by sophistry	
Notes: (1) Double horizontal lines separate discreet conditions of mind. (2) Vertical heavy central line separates epistemology from ontology. It is the line in the parable of the line			
Source: Constructed by Ian Eddington from the textual content of Copleston, F. (1966). <i>A History of Philosophy Volume I Greece and Rome</i> . (pp. 142 - 162). London: Burns and Oats Limited; Plato. (1952). <i>Republic</i> 514 – 518 (VII, pp. 388 - 389). In R. M. Hutchins (Ed.), <i>Plato</i> . (Vol. 7, pp. 295 - 441). Chicago: William Benton.			

1952r, p. 388; 1969a) and would “reason about him” (ibid., p. 389). Woe be to the so converted escapee who tries to return to enlighten their former cave mates for, should those still chained in the cave to be able to catch that individual, they would kill him or her because of the outrage that individual’s enlightenment would bring to their beliefs. Voegelin (2000, p. 39) assigns the enlightener-messenger task to philosophy. It seems, does it not, that some two and a half millennia later, education has not been able to render Plato’s enlightener-messenger assertion unreasonable?

Table 7 on page 122 reveals that the highest kind of human knowing is reached through the highest kind of being namely, the forms. Also as earlier revealed in Table 6 on pages 115 to 119, for Plato, whenever a number of objects are called by the same name, there is a form—an immutable ideal objective existence of which the ever changing sensed particulars such as horses, monkeys, trees, rocks and clouds, coming to be, being, and ceasing to be, are but shadows. Humans do not invent the forms, which, as also earlier discussed in Table 6 on pages 115 to 119, exist as much for the case of aesthetic and ethical-moral dimensions as they do for natural objects: they discover them through mind and intelligence *Phaedo* 65e – 67 (Plato, 1952n, pp. 224-225; 1966c). Plato also refers to these forms as ideas *Phaedo* 102a-b (Plato, 1952n, p. 243; 1966c)—those ideas used in patternmaking of the objects of the physical world. Idea in this sense is different from the modern meaning wherein ideas are the currency of concept and construct spent when thinking or reflecting occurs.

Where exactly are these forms to be found, who or what put them there, and by what route do humans access them?

The Demiurge
 The artisan being of *Timaeus* became the Demiurge following Cudworth's first usage in 1678 of "Demiurgus or Opificer of the world" (OED, 1970a, p. 182), by 1845 anglicised as "Demiurge or architectonic framer of the whole world" (Cudworth, 1845, p. 75).

Where exactly are the forms to be found? The forms are separate immutable essences which, being incorporeal, have no particular place but yet exist in a real heaven. Although they are incorporeal, as universals they still have objective existence—a difficult problem for Plato.

Who put the forms "there"? It is not clear. In *Timaeus* 29a – 47e (Plato, 1925h; 1952w, pp. 447 - 455) an artisan-being, a *δημιουργός* or skilled worker or craftsman (Liddle & Scott, 1940, n. p.) kind of god *Timaeus* 40c (Plato, 1925h; 1952w, p. 452) models the particular beings of the natural world on the existing eternal forms, which forms exist apart from the artisan-being. In its occasioning of the real sensible world from the forms of the eternal world, the artisan-being introduces time *Timaeus* 37d – 38c (Plato, 1925h; 1952w, pp. 450 - 451) which is subsequently taught to humans through the various motions of the various celestial objects. The artisan-being is also important

in Gnosticism, of which more later, and Plotinus (AD 204 – 270) claims that the Demiurge, which he calls the All-Soul, emanated from the one, stating in the *Enneads* (Plotinus, 1956), preserved for posterity by his student Porphyry (AD 234 – 305), that “to bring this *Cosmos* into being, the Soul first laid aside its eternity and clothed itself with Time; this world of its fashioning it then gave over to be a servant to Time” *The Six Enneads* (Plotinus, 2010, p. 234, translator's capitalisation). To have the eternal soul transcend into time and the sensible world in this manner is a teasing conundrum because, while creation of time and the pattern making of the sensible world occur together, we may, within our current conventional understandings of time, ask how human reason can speak of happenings before reason had itself learned about time, and especially about conditions that existed, and events that happened, before time existed.

How do humans access the forms?

Timaeus discloses that human intellect accesses the forms while animal and vegetable desires of the body, aided by sensation, access the physical earthly beings. Just how these separate parts of the soul exchange their information is not made clear. Some early anticipation that this mystery will be revealed is provoked at *Timaeus* 49a (Plato, 1925h; 1952w, p. 456), where, in connection with the “intelligible and unchanging” (ibid., p. 456) and the “generated and visible” (ibid., p. 456), Timaeus tells of a third being which he calls the “receptacle and ... nurse of all generation” (ibid., p. 456). Then, after a large digression about the nature of the four elements, he discloses that:

... the mother and receptacle of all created and visible and in any way sensible things, is not to be termed earth, or air, or fire, or water, or any of their compounds or any of the elements from which these are derived, but is an invisible and formless being which receives all things and in some mysterious way partakes of the intelligible, and is most incomprehensible. *Timaeus* 51a (Plato, 1925h; 1952w, p. 457).

Plato, through his dialogical Socrates who, as revealed earlier on page 58, he crafted to find Milesian school explanations of the *physis* unsatisfactory, may well have been himself satisfied with his again crafted disassociation by Timaeus of the four elements from the nurse of all generation. Such a sentence is by its nature highly speculative and

bespeaks a presence of an underlying wariness about the openness of motive outside of, but directing the method itself, of the Socratic dialogues. Yet in light of Bernabé's contribution discussed earlier beginning on page 74 the conjecture of this paragraph is not necessarily entirely implausible. In continuing his discussion, Timaeus associates this nurse and receptacle with space, in which, in a dreamlike state, noetic recognition occurs. His dialogical claim is that space, being, and generation existed before the heaven but as to the mechanism and process of noesis we are taken no further.



Source: (Feuerbach, 1869) *Plato's Symposium*. (1869). (oil on canvas). Karlsruhe, Staatliche Kunsthalle: Philosophy and Philosophers in Art. The drunken Alcibiades arrives at a symposium.

Mind is able to validate the imperfect understandings occasioned by sensation because, as immortal soul, it has prior scientific knowledge of the forms. For example, at *Symposium* 201d – 212c (Plato, 1925g; 1952u, pp. 162 - 168), in a so-called ἐγκώμιον or encomium of love speech, the dialogical Socrates tells his listeners that the prophetess Diotima, a stranger from Mantinea, disclosed to him that Love, the son of Plenty and Poverty, born on Aphrodite's birthday and thenceforth her attendant, is neither fair nor foul, nor good nor evil, nor wise nor foolish, but is a mean between these opposites. Love is a spirit hovering between the mortal and immortal, a spirit which interprets between the gods and men, a spirit which also seeks wisdom which by its very nature is of the beautiful and the good. In one of its many guises, Love is a philosopher, and in some forms Love is anything but tender and fair *Symposium* 203b – 203e (Plato, 1925g;

1952u, p. 164). As *Eros*, the philosopher, Love directs the human soul to pursuit of the unchanging and eternal, that which is good, which is initially found in procreation, “wherein conception and generation are an immortal principle of the mortal creature” (ibid., 206c or p. 165), and this pursuit of beauty is the beginning of the immortal soul’s journey.

In this journey the immortal part of the soul accesses first the beauty of the forms, then the beauty of the souls—which, in light of the earlier discussion of the inherence of the four Greek virtues in the soul and the *Polis*, of itself occasions an appreciation of the beauty of laws and constitutions—then the beauty of Science, and then the beauty of the final Science which beholds and partakes of the nature of wondrous beauty of the eternal, divine and everlasting which is the final cause of the toil of the soul’s journey. In such a state the soul as “eye of the mind” *Symposium*, 212a (Plato, 1925g; 1952u, p. 167) will “be enabled to bring forth, not images of beauty, but realities (for He has hold not of an image but of a reality), and [by] bringing forth and nourishing true virtue [is privileged] to become the friend of god and be immortal, if mortal man may” (ibid., my square brackets).

In the account just given Plato has not explained what it means to ‘behold’: he has not explained the particular mechanism by which the incorporeal soul intermingles with and knows the objective forms, or for that matter the one. Nonetheless, it appears from the soul’s journey that Science is the *lingua franca* in which the forms instruct *nous*, the immortal segment of the human soul.

Copleston (1966, p. 177 - 178), taking a lead from Aristotle, convincingly argues that Plato identifies the good, that is, the just and beautiful, with the one, so that for Plato “the Forms are the cause of the essence of all things, and the one is the cause of the essence of the Forms” *Metaphysics* I 988a10 (Aristotle, 1952d, p. 506; 1989). Copleston further states that in *The Republic* “Plato speaks of the mind’s approach and access to the first principle of the whole, and asserts that the idea of the good is inferred to be ‘the universal author of all things beautiful and right, parent of light and the lord of light in

this world, and *the source of truth and reason in the other*” (Copleston, 1966, p. 177). The quotation within the quotation comes from *The Republic* VII 517c (Plato, 1952r, p. 389; 1969a) and Copleston concludes that for Plato the one, the good and the beautiful are the same, a finding not unlike that of Jackson contained in the “Later Theory of Ideas” row of Table 6 on page 118 of this enquiry, and that the forms are derived from the one, but not by emanation, that process by which the physical world issues forth from the Christian God, emanation being a word not used by Plato.

The particular nature of the relationship between the one and the Forms is difficult: “the Good is not essence but far exceeds essence in dignity and power ... [and] ... it is not only the source of intelligibility in all objects of knowledge, but also of their being and essence” (Copleston, 1966, p. 178, my square brackets), the quotation being taken from *The Republic* 509a (Plato, 1952r; 1969a, p. 386). Copleston also identifies the beautiful of the *Symposium* with the good of *The Republic* now in discussion, where, outside of the cave, the existing sun, the good, makes the objects of nature visible beings. In *The Republic* the good gives being to the objects of knowledge and is the unifying principle: it is an ontological principle of being. Thus the one, the good or beautiful is being per se, and the human intellect’s link to it occurs when, finally, the soul beholds the one.

In essence then, Science is presented as that through which the forms reveal their permanent objective status, and the final Science, the soul’s partaking of the one, is defined by its function, its partaking activity.

Who or what then is the one from which the forms take their reality?

It is not the Demiurge who found the forms ready-made. The Demiurge is the symbol of reason, not creation, and Copleston (1966, p. 178) informs that in the *Epistle 6* 323d2 – 6 (1999, p. 178) Plato requires that his friends “swear an oath of loyalty in the name of the God who is captain of all things present and to come, and of the father of that captain and cause” (ibid., p. 178). Following the Preplatonic Plotinus (2010, 5 4 1 516b - 516c, 3 8 9 352b, 3 8 8 351d) Copleston (1966, p. 465) concludes, with caveats, that the father of the captain is Plato’s one or good of *The Republic* VI, 509a (Plato, 1952r, p. 386;

1969a). He argues first that Plato notes that “the father and maker of all this universe is past finding out; and even if we found him, to tell of him to all men would be impossible” *Timaeus* 28c (Plato, 1925h; 1952w, 28 - 29, p. 447), and secondly that the human approach to the one is dialectical in which mankind’s vision of the good is reached through pure intelligence rather than through religious ecstasy. These caveats result from a longer subsequent discussion (Copleston, 1966, pp. 176 - 206) in which he argues on the basis of his exegesis of *Eudemian Ethics*, *Metaphysics*, *The Republic*, *Timaeus*, *Parmenides*, *Symposium*, *Phaedrus*, *Sophist*, *Theaetetus*, *Philebus*, (Aristotle, 1935a, 1952d, 1989, 2009; Plato, 1873, 1903d, 1921b, 1921c, 1925d, 1925e, 1925g, 1925h, 1952m, 1952o, 1952p, 1952r, 1952s, 1952u, 1952v, 1988) that “(a) we are certain as to the *dialectical* approach, and (b) we are uncertain as to any mystical approach, while not denying that some passages of Plato’s could be understood as implying such an approach, and may possibly have been meant by Plato to be so understood” (Copleston, 1966, p. 202). There is ambivalence about the authenticity of the *Sixth Letter* (Alican, 2012, p. 137; Thesleff, 1982, pp. 233 - 235; 1989, pp. 1-26).

Throughout his argument Copleston, a Jesuit, downplays a Neoplatonic finding of a Christian God in Plato as an explanation of Plato’s meaning of the one and father of the captain. He stresses again and again that in Plato, access to the real is intellectual not sensual, that “Plato refused ... as Socrates had before him, to acquiesce in the relativity of Science and moral values” (ibid., p. 201), that Plato “undoubtedly believed that experience is inexplicable, unless the objective existence of the standards [forms] is maintained” (ibid., p. 203, my square brackets), that Plato’s position was not that humans “build up a world of our own by clothing it, as it were, from within ourselves” (ibid., pp. 204 - 205) but was rather that they pass beyond the sensible world to a world of thought, the Transcendental Reality” (ibid., pp. 204 - 205), and that Plato would not accept a merely relativistic ethic: there are absolute standards and norms, absolute ideals. As a consequence, “man may be brought to the beauty of the formal sciences¹, and the beauty of the Ideas” (ibid., p. 199) and through that to ““the science’ of this universal beauty of the Good” (ibid., p. 199), so that mankind can, “by rational reflection ... certainly come to the knowledge of the objective (and indeed transcendentally-

grounded) values, ideals and ends, and this after all is Plato's main point" (ibid., p. 206). The superscript in the short quotation above refers the reader to a passage in *Philebus* 51b – 51d (Plato, 1873, p. 85). In that passage Socrates and Protarchus are speaking of absolute beauty and its attendant pleasures, one of many Pythagorean ideas adopted by Plato in the *Philebus*, says Paley, the translator (Plato, 1873, p. 85, footnote 1). Again the communication between the immortal soul and the forms is called the final Science. As to the one: it is the ontological principle of being and Plato takes us no further.

In summary, true knowledge, knowledge of what is permanent and unchanging cannot be achieved by sense perception alone. The permanent and unchanging exist in the forms, and this knowledge can be accessed by intellect, the immortal element of the soul. The particulars of the forms, reached imperfectly by humans through the senses, permit learning by reminiscence. Exactly how the forms themselves were made, and exactly how the soul acquires scientific knowledge of them, that is, the actual mechanisms involved, have not yet been adequately addressed.

I proceed to discuss these two unaddressed questions before attempting a qualified answer to Plato's meaning of Science.

How were the forms made?

In *Timaeus* (Plato, 1925h, 1952g) Plato mythicises that the world was formed out of a material so intractable that it could not be completely moulded to the creator's will. This uncontrollable element Plato called necessity *Timaeus* 48a (Plato, 1925h; 1952g, 48, p. 455) and it is difficult not to find its origins in the objective natural law imperatives of *moira* carried forward to Homer. The so-called creator gave the world a body of fire, water, air and earth *Timaeus* 31b – 32c (Plato, 1925h; 1952g, p. 448) by imposing numbers on the formless chaos, and a soul, whose attributes are motion and intellect *Timaeus* 36e – 37a (Plato, 1925h; 1952g, p. 450). This universe of body and soul, a perceivable god *Timaeus* 92c (Plato, 1925h; 1952w, 92, p. 477) is an "image of its creator, only begotten" (ibid., p. 477), a creator that is mysteriously remote and hard to discover and which, after having made the world, "remained in his own accustomed

nature” *Timaeus* 42 (Plato, 1925h; 1952w, 42 - 43, pp. 453). The mechanism and process of creating the forms on which sensible bodies are patterned involves division of the one, then mixing numbers combined in various proportions, shaking, bending and a whole host of further related transcendent activity which Plato’s *Timaeus* can only explain by comparison, through simile, with earthly procedures such as winnowing and their associated mechanisms.

Timaeus’ mechanical explanation of the manufacturing of the forms should not hide the brilliance of Plato’s construct which is that forms consist of numbers generated from monad, the one or unity, that the intellect alone can access the forms, that the soul and reason consist of numbers, and that mathematics is that which proceeds through intellect, not sensible particulars. *Timaeus* does not spell it out but it is inviting to surmise that the mechanism and process by which the one creates the forms is pure mathematics, in this case arithmetic and geometry even though arithmetic may not be considered as mathematics, let alone pure mathematics by some present day scholars. To be sure, the mathematical procedures outlined in *Timaeus* might well keep mathematicians intrigued for some time to come.

By what actual process or mechanism does the soul partake of the forms? Plato’s answer to this question should reveal the very nature of his scientific method.

As noted on page 129, the attributes given to the world soul are motion and intelligence. The world soul causes all the ten motions *Laws* X, 894a – 896a (Plato, 1952j, pp. 762 - 763; 1967/68c), the whole plethora of coming to be, being, and ceasing to be, setting “thousands upon tens of thousands of bodies” in motion *Laws* X, 894e (Plato, 1952j, p. 763; 1967/68c). It causes the motions of the planets *Timaeus* 36e – 37c (Plato, 1925h; 1952w, p. 450), which planets are enformed¹ by number. There is again some

¹ As the note to Table 5 on page 54 informed, throughout this enquiry to enform is to bring form to matter. Enform is not an alternate use of inform. Thus the process of enform-ment is the bringing of form to matter, by which process, hylomorphic being comes to exist.

transcendent mixing, and bending, and intertwining. At *Laws* X 896a (Plato, 1952j, p. 763; 1967/68a) Plato also informs that the world soul causes its own movement.

Given that the immortal element of the individual soul which in human cognition eventually validates the sensible ideas is humankind's endowment from the world soul, and given that the creator of the world soul comprehends both eternal and sensible beings, it is again easy to surmise, even though again *Timaeus* does not spell it out so directly, that the mechanism or process by which the individual soul beholds the one, and the universal forms which it subsequently employs in noesis, is again pure mathematics. If Science is that which partakes of the one and the forms, and if the mechanism or process by which it does this is mathematical, and if the sensible objects are copies of the forms expressed in numbers, then the claim made by Galileo so many years later that "the book of nature is written in mathematics" (Galileo, 1957a, pp. 237 - 238) might be speculatively found intimated in Plato.

Insights provided by noted commentators bring perspective to the role Plato attributes to noesis. Burns (1911, p. 149) contends that Plato did not precisely explain what he meant by creation and along with Adam (1908, p. 373), but in contradiction of Copleston (1966, pp. 177 - 178), settles on creation as emanation. He further contends, like Copleston and Adam, that Plato's cosmogony helps to alleviate the conundrum presented by an incorporeal God understood as pure thought having to interact with objective matter. He cites Caird (1904, ninth Gifford Lecture. n.p.) to explain that the world soul "is a kind of bridge to connect two terms [God and matter] which it is impossible to unite" (Burns, 1911, p. 150, my square brackets). The relevant location in Plato is *Timaeus* 34b – 35a (Plato, 1925h; 1952w, p. 449).

Copleston (1966, pp. 207, 210 - 211) further articulates Caird's bridge idea: the divine immortal reason partakes of the forms while the mortal parts, the spirited and courageous, and the appetitive, partake of the material corrupted sensual appearances of those forms. Copleston adds a qualification. He holds that the manner in which the human soul splits itself is not explained in *The Republic* (Plato, 1952r, 1969b) and adds

that in *Phaedrus* (Plato, 1925e, 1952o) Plato speaks as though all three elements go on the journey to the forms together (Copleston, 1966, p. 209).

Adam (1908, p. 369) too is cautious on the matter of a bridge between forms and recognised sensible objects and is not able to find the functioning of the exchange explained anywhere by Plato. Adam suggests that the world soul is nothing but divine goodness but allows that its presence revives the macrocosm-microcosm link (ibid., p. 366). He further speculates that the world soul is composed of Otherness, Otherness mixed with Sameness, and Sameness (ibid., p. 367) and that the middle component of Otherness mixed with Sameness is the mathematics out of which the bridge between the unchanging forms, and the changing this-world particulars, is constructed (ibid., pp. 368 – 370). Such a view fits with the ontological hierarchy reaching from the sensible through mathematics to the forms or ideas set out by Plato in his parable of the line discussed earlier on page 120.

Guthrie (1975a, p. 90) articulates the soul's partaking of the forms by analogy to the manner in which an actor interprets the author's written play but this clever insight does not take me far enough. In a discussion about Plato's use of myth, Stewart (2009, p. 23) reminds his readers that participation in myth is itself an intellectual pathway to transcendence, if, as Plato's myth might itself caution, transcendent mortals may be, while Voegelin finds the origins of Platonic-Aristotelian Science in myth (Emberley & Cooper, 2004a, p. 8). For me, the mechanism and process of the intermingling of the human soul with the objective forms remains as opaque as the Demiurge's interaction with the forms themselves is obscure. Irrespective of this impasse I find Plato just so brilliant and wonderful.

For Plato, the ensouled human body's access to the universal forms of the final Science is at the heart of human understanding and learning: Science occurs when, through partaking of forms, the soul arrives at knowledge of the beautiful, good and unchanging, the permanent, that is, of the that-which-can-be-no-other. Having now completed discussion of Plato's usage of the terms Ethics and Science, and their role in informing

Plato’s political philosophy, I turn to conclusion of the chapter in which, *inter alia*, I apply that usage in articulation of the enquiry key terms, and the Thesis Proposition

Table 8: Key Terms Nuance—Plato (BC c. 427 – c. 347)

Key Terms	Sequential Articulation of Key Terms Nuance
Science	Knowledge of the unchanging or the that-which-can-be-no-other received through beholding of the one and the forms.
Ethics	Reason as <i>nous</i> discerning the harmful from the unarmful.
<i>Polis</i>	An ideal just and happy gathering or a city of ideas in which classical Greek values prevail and in which truth informs reason.

Statements. Chapter 1 is followed by the enquiry’s Appendix I as a Coda to Chapter 1 and is designed to be referred to on a needs basis. It discusses, *inter alia*, approaches to interpreting Plato and other matters which, although they may be considered important in themselves, are of general relevance to the integrating pursuit of enquiry goals contained in the enquiry chapters.

CONCLUSION TO CHAPTER 1

Plato predicates his work on the human soul being the seat of the moral and intellectual dimensions of the human condition. Through introspective reason about the inner turmoil known to the majority of mankind, he finds a tri-partite soul, a self-moving being, and accepts, after the understandings of the Pythagoreans, that as a breath of the world soul, it has a dual existence. An immortal part, *nous*, communes with the forms or ideas understood as incorporeal but objectively existing beings, number constituting their essence: and thus is Science begotten. The mortal parts of the soul, spiritedness and appetite, commune with the imperfect sensible world. The internal discourse of the soul which occurs when the mortal component presents its perceptions to *nous* for validation permits learning as reminiscence.

Table 9: Progressive Articulation of the Thesis Proposition Statements—Plato (BC c. 427 – c. 347)

PART ONE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato’s Political Philosophy	There is no nuance in the term Modern Age. <i>Polis</i> is an ideal, just and happy gathering or a city of ideas in which classical Greek values prevail and in which truth informs reason. Platonic <i>nous</i> is established as a divine element in mankind. Virtue <i>qua</i> state of mind is some kind of knowledge. Technical virtue as good-at-what is differentiated from moral virtue as absolute goodness <i>per se</i> . To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one’s own and not another’s business, and temperance as self-control, discerning between the harmful and the unharmed
2	(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato’s Political Philosophy	There is no nuance in the term Modern Age. Articulation of Metaphysics is not yet begun. Science is knowledge of the unchanging or that which can be no other received through beholding of the one and the forms. Ethics is reasoned moral activity inherent in <i>nous</i> ’ discernment of the harmful from the unharmed. To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one’s own and not another’s business, and temperance as self-control, discerning between the harmful and the unharmed.
3	(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato’s Political Philosophy	There is no nuance in the term Modern Age. Ethics is reasoned moral activity inherent in <i>nous</i> ’ discernment of the harmful from the unharmed. To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one’s own and not another’s business, and temperance as self-control, discerning between the harmful and the unharmed.

Plato finds four classical Greek virtues residing in the human soul: wisdom, courage, justice, and temperance. He adopts those virtues as templates for his republic of ideas, his ideal *Polis* or gathering that might guide humankind's chances for a better life. In this esoteric *Polis* humankind might better pursue its *arete* of happiness with justice, achieved through wisdom's knowledge, and realised when *nous*, always in obedience to its own particular virtue, its *taxis* and *cosmos* of obedience to the law, justice as minding one's own and not another's business, and temperance as self-control, discerns between the harmful and the unarmful: and thus is virtue Ethics begotten.

Furthermore, in its work, mankind needs willpower, something like courage combining with *nous* to overcome harmful appetite. Plato's return to the classical Greek virtues of Homer is a return to an Ethics which first revealed itself as a behavioural response to objective imperatives of natural law. His reappraisal and subsequent enshrinement of classical Greek virtues in the political philosophy of his *Polis*, his city of ideas, read as coeval with, and a shift towards, *nomos*, and represents an early attempt by a section of mankind to supplant brute force with reasoned justice: and thus, in part, is Plato's particular political philosophy *qua* critical moral evaluation of political society begotten.

In Plato's construct, *nous*, which communicates with the forms, also directs mankind in its work. *Nous* is crucial to learning as reminiscence. Science as the language of the intercourse between *nous* and the forms is coeval with both of them. And from this exalted and privileged position it informs, as best it can, an objective Ethics and political philosophy of *Polis*.

Table 8 on page 133, which catches Plato's key terms nuance, is extracted from the content of this chapter. After a full explanation of enquiry method provided in Chapter Two, Platonic nuance of key terms is articulated in more detail under three attributed dimensions, method, sphere of operations and constraints, as exemplified in Plato's case on page 185, and thenceforth, chapter by chapter, tables predicated on such dimensions summarise nuance sequentially brought to the key terms Science, Ethics, and *Polis* from interpretation of works by milestone western tradition writers discussed in those chapters.

Likewise Table 9 on page 134 brings captured key terms nuance to articulation of the Thesis Propositions Statements. Such tables, as appropriate, are subsequently placed in conclusions to most of the remaining chapters.

Appendix I as a Coda to Chapter 1: Approaches to Reading Plato

In this Coda, which is to be considered as an Appendix conveniently located for reference purposes, I comment briefly on approaches to reading Plato sufficient only for the purpose of explaining why so-called conservative translations—conservative translations being understood as those likely found in Loeb Classical Library and Perseus Library Holdings and generally known and respected within time honoured strengths and weaknesses caveats attributed to them—are used in this enquiry. More venturesome translations like those of say Heidegger and Benardete, although occasionally cited, are not widely used, they being in part predicated on translation, interpretation and reading constructs considered troublesome for the purposes of this enquiry and its method. I include further comments on reading Aristotle in the text of Chapter 3. Content addressing Heidegger, Arendt and some of their students is also included in this Coda for a more complete understanding of Straussian and other approaches to reading Plato while content on Kant is included for a more complete understanding of Arendt's open adducing of Kant to her general argument of political action as public *praxis*. The whole Coda is provided for background purposes and might as profitably be accessed on a needs basis when referred to in the text, as read and carried forward to the text.

Press (1993, p. 4) discerns scholarly classifications of modes of interpretive reading of Plato fragmenting in the last decade of the twentieth century. The question of how to appropriately read Plato has become complex and difficult. During the twentieth century so-called Traditionalist interpreters, for example, Crombie, Shorey and Taylor (I. M. Crombie, 1962; Shorey, 1933, 1960; A. E. Taylor, 1960, 1978), were named so on the basis of perceptions that they engaged dogmatically with Plato through fixed interpretations of dialogue lines attributed to Socrates and/or particular interlocutors. Their interpretative approach is said to be systematic, as is that of the sometimes-called Analytical, Anglo-American and Tübingen School scholars, each of which latter named interpretive approaches being recognisable in its twenty-first century forms, yet being differentiable from one another on separate if not strictly mutually exclusive grounds.

Analytic interpretation, exemplified say by Moore (1903a, 1903b), Vlastos (1954) and

Putting a Tag on Analytical and Anglo-American Philosophy

Analytical Philosophy is a persuasion of Western philosophy detected in emergence since the turn of the twentieth century. It is characterised by rigorous attention to sentence structure and analysis of sentence logic, and traces its line from Frege (AD 1848 – 1925), through Russell (AD 1872 – 1970), Wittgenstein (AD 1889 – 1951), Ryle (1900 – 1976) and Rorty (AD 1931 – 2007), and its associations, in the same name order, with analysis of sentence logic, British empiricism *qua* individual experience as a basis for reliable knowledge, Vienna School logical positivism, linguistic analysis and post structuralism, structuralism being a persuasion that language *qua* mediator between abstract ideas and so-called reality, is a key to understanding culture (Leiter, 2006, pp. 1 - 18; Soames, 2003, pp. i - xviii; Stroll, 2000, pp. 1 - 10). Soames associates Analytic Philosophy as a definable genre with Cambridge University until World War II and then Oxford University up to 1975 but commences with Russell not Frege whose *Basic Laws of Arithmetic* (Frege, 2013) is associated with the foundation of Analytic Philosophy. Anglo-American Philosophy often named as philosophy of a kind taught in university departments in such countries as England, America, Canada, and Australia—some characteristics being “ a focus on small parts of larger issues, attention to fine details of the small parts, rigour and explicitness, with the latter often facilitated by the use of formal methods” (Longworth, 2014, n. p.)—falls under a chapeau of Analytical Philosophy. Defining Anglo American and/or Analytical Philosophy and Continental Philosophy each in terms of the other is increasingly losing clarity as the twenty first century progresses.

Schwartz describes an analytical philosopher as one who:

analyses problems, concepts, issues, and arguments. She breaks them down into their parts, dissects them, to find their important features. Insight comes from seeing how things are put together and how they can be prized apart; how they are constructed and how they can be reconstructed. (Schwartz, 2012, Introduction, n. p.)

He situates Analytical Philosophy in Germany as well as England there being Polish, Russian, Korean, Australian, Austrian, German and Americans named in his list of Analytical Philosophers. Beany (2013, pp. 61 - 140) gives a list of one hundred Analytical Philosophers and a further fifty implicated by association or influence.

Sachs (1963), perhaps originating as an alternative to turn-of-the-nineteenth-century idealism and initially placing some emphasis on linguistic analysis (Drummett, 1996, pp. 4 - 14), has gone through a number of phases during the twentieth century, pushed and pulled by logical positivism, ideal language analysis, ordinary language analysis, metaphysics and pluralism to exist in a condition confounding rigorous definition (Glock, 2008, pp. 205 - 211). Glock—his own approach mixes analytical and continental praxis (*ibid.*, p. 3)—searches for, but does not find, essential and adequate tenets sufficient for rigorous definition of Analytical Philosophy and he settles on a club-recognition kind of definition based on an idea that communicating families of researches know analytic interpretation when they see it (*ibid.*, 204 – 230). Analytic Philosophy he says, is treated as a

historical unfolding.

Leiter (2006, pp. 1 - 24) offers a fully Deweyan definition, one knows philosophy when one does it. He already provides a classification farewell to Analytic Philosophy:

It is time to pronounce the “bogeyman” of analytic philosophy laid to rest: so-called “analytic” philosophers now include quietists and naturalists; old fashioned metaphysical

philosophers *and*, twentieth century linguistic philosophers; historians of philosophy *and* philosophers who show little interest in the history of the field. (Leiter, 2006, p. 11)

It does appear that readings readily admissible to one named genre may also qualify for part membership of other named genres discussed below. For example Vlastos (1973/81,

Putting a Tag on Continental Philosophy

Leiter and Rosen (2007) find the term Continental Philosophy “uninformative at best and misleading at worst” (ibid., p. 3) because it fails to categorise philosophers in a mutually exclusive manner and, after finding alternative names unsatisfactory on the same basis—for example post-Kantian, post-Hegelian—proceed to characterise Continental Philosophy in the nineteenth and twentieth centuries as an overlapping mix of traditions from idealism to Heideggerian existentialism, each tradition being a reaction to an earlier one with no one tradition necessarily dominant. But such a classification they say does not catch hermeneutics, structuralism, post-structuralism and post-modernism. Continental Philosophy might also be grasped as a methodology giving priority to historicism, phenomenology and the like over naturalistic philosophy and its glance towards method in Science. Prado (2003, p. 10) also differentiates Continental Philosophy from Analytical Philosophy on a basis of method, the former being synthesis of large questions about modernity, history, society and the human condition and the latter being analysis and reduction of delineated issues of sentence structure, logic, knowledge, and the nature of mind into concomitant parts, which leaves open a question of a classification for those who employ both analysis and synthesis, whether on large or small issues. Rosen (1999, p. 665) identifies Continental Philosophy by perceived inherent themes—rejection of the method of Science as best method for investigating phenomena; a penchant for historicism predicated on a belief that philosophical argument cannot be interpreted apart from the historical context of its emergence; that human consciousness can change the conditions of experience through concerted action; and metaphilosophy understood as access to plural methodologies such as hermeneutics, structuralism and critical theory. Glendinning (2006) can find no “internal glue” (ibid., p. 3) binding a clearly identifiable Continental Philosophy and Critchley, (2001) although explaining Continental Philosophy as “an invention, or more accurately a projection, of the Anglo-American academy onto a Continental Europe” (ibid., p. 32) proceeds, through discussion of perceived presences of critique, praxis and emancipation, to characterise Continental Philosophy in its continual unfolding as that concerned with social behaviour and emancipation in the modern world (ibid., p. 54 – 75). The majority of commentators situate their discussions of Continental Philosophy in a two-reactions-to-Kant model.

1999a, 1999b), who uses analytic interpretation methodology, also reveals traditionalist and developmentalist affinities (Vlastos, 1991) or may even be thought of as a genre in his own right. Likewise Gaiser (1980), Kramer (1990); and Szlezak (1993) as high profile Tübingen School members are claimed as esoteric interpreters. Annas holds that Analytical Philosophy restored ancient philosophy to vigour (Annas, 2004, p. 41) while Searle (1996, p. 23) claims that Analytical Philosophy itself has lost its vigour. Leiter (2006, p. 16) writes of a takeover of Continental Philosophy by Analytical Philosophy since the 1970’s as a result of engagements by such writers as Taylor (1984), Michael Rosen (1984) and Forster (1998), while Langdon (2006, pp. 285 - 303) in her comparison of feminine dimensions between the two, there being

similarities and differences involved, signals amalgamation and convergence. Stanley Rosen, in his *Reversal of Heidegger* (2002) claims that Heidegger’s interpretation of Nietzsche has produced:

the absurd impression that precision, conceptual clarity, and systematic rigour are the property of analytical philosophy, whereas the continentals indulge in speculative metaphysics and cultural hermeneutics, or ... in wool gathering and bathos ... and that no

Putting a Tag on Tübingen School Philosophy

Tübingen School scholarship here under discussion upholds a contention that it is possible to exhume unwritten Platonic doctrines and apply them in interpretation of the dialogues. Tübingen scholarship (Findlay, 1974; Gaiser, 1980, 2012; Kramer, 1990, 2012a, 2012b; Reale, 1996) thus goes beyond attempting to adduce Platonic dogmas possibly applying and generally known in the Academy. That is, it delineates unwritten doctrines from dogma *qua* maxims of method and/or general pedagogical orientations then possibly extant and possibly then generally accepted as givens in the Academy, and conjectures such unwritten doctrines to have been revealed by Plato in a lecture or course of lectures on the good (D. W. Ross, 1976, pp. 147 - 149), which lectures are claimed to have extended the discussion on the good found in *Republic* 504e – 509c (Kramer, 2012a, pp. 39 - 64). Thus a unified first philosophy is detectable, a key to reading of all of the dialogues. There is severe (Cherniss, 1935, pp. 349 – 350, 356 - 357) and moderate (Gadamer, 1980a, pp. 124 - 155) questioning respectively of Aristotle's comments on Plato's possibly inferred separate lectures comments (Aristotle, 1936b; 1952n, pp. 288,) and *De Anima* 404b16 – 21 (Aristotle, 1952b, pp. 633 - 634; 1957a) and Tübingen unwritten doctrine scholarship, Cherniss doubting that Aristotelian commentary on Plato can be trusted and Gadamer, upon accepting that what can be learned about Plato's doctrines from a Tübingen School approach can be but "singularly skeletal and meager" (1980a, p. 124), continuing on the basis that "the essential core of Plato's dialogue was presented in ongoing didactic discussions which engaged the participants for whole days at a time" (*ibid.*, p. 126). Vlastos (pp. 397 - 403) is sceptical towards Kramer's unwritten doctrine interpretations and Brisson (1995b, p. 117), noting in passing the tradition raised already by Trendelenberg (1826) and Robin (1908a), sides with Cherniss. Dillon (2003, pp. 16 - 22) argues that Aristotle's comments on Plato's esoteric writings are essential for interpreting Xenocrates and Speusippus but feels no need to "postulate a fixed esoteric set of doctrines" (*ibid.*, viii) in the manner of the Tübingen School. Mann (2006, pp. 380 – 385, 397) is averse to the Tübingen School conviction that the content of *Phaedrus* and the contested *Seventh Letter* signify an unwritten doctrines tradition.

Plato's contested *Seventh Letter* 340 – 345 (Plato or an imitator of Plato, 1952, pp. 808 - 811; 1966) and his *Phaedrus* 274b – 279c (Plato, 1925e; 1952o, pp. 138-141), *inter alia*, explore a contention that written word is less meritorious than spoken word and Tübingen School scholarship cites such passages as evidence in its case for an unwritten Platonic doctrine Kraemer (1990, pp. 3 - 14; Reale, 1996, pp. 7 - 22). Plato, in a Tübingen School reading, would follow the dialogic example in *Phaedrus* 276e – 277a (Plato, 1925e; 1952o, pp. 139 - 140) and speak to the living souls rather than write to them. Tübingen School Scholars find evidence for unwritten doctrine in Aristotle's one-phrase mentions of unwritten teaching in *Physics* 209b15 (Aristotle, 1952n, pp. 288; Aristotle, 1936 #1571) and lectures on philosophy in *De Anima* 404b16 – 21 (Aristotle, 1952b, pp. 633 - 634; 1957a) and elsewhere in sections of writings by such persons as Aristoxenus (BC c.335), Alexander of Aphrodisias (AD c.200), Simplicius (AD c.490 – c 560, and Sextus Empiricus (AD c160 – 210) (Findlay, 1974, pp. 413 - 454) within an "indirect tradition" (Reale, 1990, p. 14) of commentary. The indirect tradition is associated with an esoteric or unwritten tradition, itself differentiated through juxtaposition with an exoteric writing tradition in which Plato's doctrines are available in the lines of the dialogues, not between them. Exoteric writings were for those outside the school and esoteric or unwritten but spoken doctrines, for those within the school. For example Reale explains the esoteric tradition under discussion as "intra-Academic, that is as qualifying the doctrine expressed within the Academy, and reserved for the followers of the Academy itself" (Reale, 1990, p. 17). At the heart of the unwritten doctrine or esoteric Plato scholarship lies a conviction that the primary principles of being and emergence of the ideas, orally revealed by Plato, may be discerned between the lines of his writings and the comments of others.

intelligent person is taken in by the gestures towards pluralism that have presumably rectified the situation. (S. Rosen, 2002, p. x)

These wool-gatherers, says Rosen, fill a void which surrounds the *techne* of Analytical Philosophy.

Others signal a dimming of Analytical Philosophy and discuss its transformation into post-analytic philosophy (Mulhall, 2002)—but not just yet in the United Kingdom (*ibid.*, p. 250)—and/or postmodernist modes of praxis (Zuckert, 1996). Zuckert, a University of Chicago graduate, announced an earlier arrival of a post-modernist interpretation genre in North America. She names Nietzsche AD (1844 – 1900), Heidegger (AD 1889 - 1976), Gadamer (AD 1900 – 2002), Strauss, (AD 1899 – 1973) and Derrida (AD 1930 – 2004) Post-Modern interpreters on the basis of her claim that for each of these writers Plato is the

defining factor for their thought as a whole and that they return to Plato on the basis that

“modern rationalism has exhausted its promise and possibilities” (ibid., p. 1). She claims

Brandwood Chronology of Plato's Dialogues					
Authentic Works	Abbreviation	Group	Period		
Apology	Apol.	1A (Alphabetical order)	Early Dialogues		
Charmides	Charm.				
Crito	Cri.				
Euthyphro	Euphr.				
Hippias Minor	Hipp. II				
Ion	Ion				
Laches	Lach				
Protagoras	Prot.				
Cratylus	Crat.			IB Alphabetical Order	Early Dialogues
Euthydemus	Euthyd.				
Gorgias	Gorg. (t)	(t) = transitional dialogue			
Hippias Major	Lys.				
Lysis					
Menexenus	Menex.				
Meno	Men. (t)				
Phaedo	Phdo. (t)				
Symposium	Symp.				
Republic I-IX	Rep. I-X	II (Chronological Order)	Middle Dial.		
Parmenides	Parm.				
Theaetetus	Theaet.				
Phaedrus	Phdr.				
Timaeus	Tim.	(Chronological Order)	Late Dialogues		
Critias	Crit.				
Sophist	Soph.				
Politicus ¹	Pol. (Stsm.)				
Philebus	Phil.				
Laws I-XII	Laws I-XII				
Epinomis	Epin.				
Epistles I-XIII	Epis. I-XIII			(26 dialogues, 13 letters)	
Unauthentic or Suspect Works					
Alcibiades I	Alc. I	(Alphabetical Order)			
Alcibiades II	Alc. II				
Amatores (Lovers)	Amat.				
Axiochus	Ax.				
Clitopho	Clit.				
Definitions	Def.				
Demodocus	Dem.				
Eryxias	Eryx.				
Hipparchus	Hipp.				
Justice	Just.				
Minos	Min.				
Sisyphus	Sis.				
Theages	Theag.				
On Virtue	Virt.			(14 suspect works)	
Notes: 1. Politicus = Statesman. Source: Adapted by Ian Eddington of a table constructed by Debra Nails (2003, n. p.) from Figure 2 of Brandwood, L. (1976). <i>A Word Index to Plato</i> . Leeds: W. S. Maney and Son.					

that rather than concentrating on reconstructing Plato's position in philosophy they rather adduce him to their own projects which are projects of contemporary political philosophy. Zuckert's cogently expressed argument notwithstanding, I find it difficult to imagine this group seated around a table in simple complementary understanding predicated on recognition of an interpretive reading mode even were perceived commonalities agreed upon. Williamson (2008) claims that “most philosophers are neither crude rationalists nor crude empiricists, nor these days conceptual or linguistic philosophers” (ibid., p. 4)—which really does not say what they are—and speculates whether some may wonder if philosophy has a method at all (ibid., p. 3).

While so-called Continental Philosophy might be said to have originated as an Anglophone term to classify French and German philosophy throughout the nineteenth and twentieth centuries after Kant (AD 1724 – 1804), and thereafter to have survived as a classification on the basis of its

opposition to Analytical Philosophy and the latter's superficial engagement with it (Leiter, 2006, p. 12), such understanding is now inappropriate in the light of more substantial scholarship which reveals that Continental Philosophy itself had its own push-pull development with persuasions such as German materialism, German idealism, Marxism, phenomenology, existentialism, hermeneutics, structuralism and post-structuralism (ibid., p. 12).

Various minor and not necessarily mutually exclusive genres of interpretation are named in the literature. So-called dramatic interpretation is exemplified for example by Arrieti (1991). Press (2000, p. 20) calls dramatic interpreters new Platonists characterised by a non-dogmatic reading of the dialogues in which features of form, style and the like are implicated in correct interpretation, and by questioning the extent to which Socrates, Athenian and Eleatic strangers and major voice participants such as Timaeus speak for Plato. Press (ibid) assembles contributions from established scholars on various aspects of this question.

So-called esoteric interpretation, accepts a possibility that Plato's most closely guarded doctrines were not written down but were occasionally revealed to certain groups. Findlay (1974, 1976) and Giovanni Reale (1996) are considered representatives of this group and are also named associates of the Tübingen School. So-called Neoplatonic interpretation, also associated with esotericism, is differentiated by its focus on unfolding of the creation in *Timaeus* (Plato, 1925h, 1952w) and the nature of Plato's ideality. Dillon (J. M. Dillon, 1977, 2003) and Merlan (1968) are associated with this genre.

So-called Unitarian readings, centred on *Theaetetus*, (Plato, 1921c, 1952v) and initially scaffolded by a now-contested Brandwood (1990/2009) classification of Platonic dialogues, proceed on a premise that there are no contradictions on such issues as existence of the forms or mortality of the soul across the dialogues. Such a stance seems to have lost prominence as the twentieth century progressed. Some scholars of Unitarian interpretation, for example Chapel (2005) and Sedley (2004), although they refute

Cornford's stance on Unitarianism, do so in a manner not fatal to it. Others (F. M. Cornford, 1967; McDowell, 1973; Owen, 1965), by contrast dubbed Revisionists, proceed on a premise that Plato's works did not escape amendment and retraction.

**Straussian, Tübingen School and Enquiry Usage of the Terms
Esoteric and Exoteric**

Straussian

Esoteric: a persecution and art of writing idea that ancient writings may be appreciated at a second level of understanding hidden beneath literal meaning of written words but detectable through clues found in associated dimensions, for example speaker order, attribution of key ideas to speakers, portraying speakers as representatives of specific causes, location and setting, metaphor and image trope and the like.
Exoteric: meaning discerned from the face of the words themselves.

Tübingen School

Esoteric: a conviction that primary principles of being and emergence of the ideas were revealed by Plato in a lecture or course of lectures on the good and may be discerned between the lines of his writings and the comments of others so that it is possible to exhume unwritten Platonic doctrines and apply them in interpretation of the dialogues. Plato's unrecorded lectures are claimed to have extended the discussion on the good found in *Republic* 504e – 509c.
Exoteric: acceptance that Plato's doctrines are available in the lines of the dialogues, not between them, exoteric writings being for those outside the school and esoteric or unwritten but spoken doctrines, for those within the school.

Enquiry Usage

Esoteric: of ideas as opposed to materiality, thus Plato's city of ideas is esoteric and Pericles' beautiful Athens is exoteric. Likewise Plato's Science *qua* soul's beholding of forms is esoteric while his own reliance on watertightness to explain the soul's imprisonment, or Anaximander's explanation of earthquakes in terms of physical elements rather than gods is exoteric Science.
Exoteric: actual as sensed rather than ideal as thought about, the making or doing of, rather than the thinking of alone.

Mutual exclusivity dimensions of enquiry methodology's employment of an esoteric/exoteric divide are further discussed on pages 186 and 189.

Robinson (1950) and Runciman (1962) defend revisionism. Beversluis (2004) challenges a standard reading of the early dialogues as one in which those defeated in debate with Socrates, hapless in their ignorance of their own confessed specialisations, return to their daily lives none the better for their experience, and replaces it with a view that some of the questions the interlocutors ask Socrates are perceptive questions deserved to be asked. Cormack (2006) argues that a Unitarian reading, rather than a historical or developmental reading “is the best way to account for consistent ethical views found throughout Plato's early and middle-

period dialogues” (ibid., p. 3). Others named developmentalists Brandwood (1992) 1992, Kahn (2002), Thesleff (1997) of various persuasions, not unlike like those so-called revisionists, share a view that Plato's views change during the course of the dialogues, developmentalism itself being closely associated with chronology and the theory of forms and debates about them (Irwin, 2008; C. H. Kahn, 1966; Owen, 1953; Ryle, 1939; Shorey, 1960).

Another group, very influential and labelled Straussian, named as a result of its members having been taught by Leo Strauss (AD 1899 - 1973) and/or by one of his students or by

being associated with works by him, for example (L. Strauss, 1952/88, 1959, 1963, 1963/87, 1964, 1966, 1968/1989a, 1968/1989b, 1973, 1987, 1989, 1997, 1998, 1999, 2004, 1985; L Strauss & Cropsey, 1987), exhibit a range of individual interests and interpretive stances.

Strauss's own intense enigmatic writing, with its changes in direction which arrest one between and within sentences, is beautifully simple in diction yet its meaning is often elusive and difficult to settle on. Even most dedicated scholarship is uncertain about the "fundamental intentions which guided Strauss" (Pangle, 1985, p. 1) and, given this and the diverse independence of mind and approach displayed in works of some of his students mentioned subsequently in the present context, it is a wonder if rigorous and enduring definition of a Straussian genre might ever eventuate. Yet each of his now-illustrious students mentioned in the next paragraph deals in their own way in Straussian currency of crises in liberal education and liberal democracy, sparking tension between Jerusalem and Athens, ancient versus modern, differences amongst political philosophy, political science and political economy, and issues about the nature of Platonic *eros*.

Besides Strauss himself (AD 1899 - 1973), who accepts a persecution and art of writing kind of concealed-message writing containing exoteric, or surface, and esoteric, or between the lines levels of meaning (L. Strauss, 1952/88, pp. 7 - 21, 36, 22 - 27; 1989, pp. 63 - 71; 1998, pp. 221 - 232), leading scholars associated with a so-called Straussian genre are Benardete (AD 1930 - 2001)—(1984, 1989/92, 1991/2009, 1993/2009, 1997, 2000a); Rosen (AD 1929 -)—(1967, 1969, 2005); Bloom (AD 1930 - 1992)—(1987, 1993, 1968b; 2001); Mansfield (AD 1932 -)—(1978, 1989, 1996, 1998); and Kojève (AD 1902 - 1968)—(1964, 2000). Fortin and Gadamer let Strauss's persecution and art of writing approach pass as an "esoteric mode of writing or what you call 'conscious distortion, camouflage and concealment'" (Gadamer, 1984, p. 488), Gadamer referring to it as talmudic or rabbinical presence in Strauss (*ibid.*, p. 8). Altmann refers to it as kabbalistic exegesis, akin to "pure speculation that few will follow in a credulous mood (Altmann, 1964, pp. 260 - 261): well now! The distinction I make between usage of the terms exoteric and esoteric for enquiry methodology purposes and their usage in

Straussian and/or Tübingen School literature summarised in a text box on page 143 is further articulated on pages 186 to 189 of Chapter 2.

Benardete, Rosen and Bloom reach out from philosophy to life matters through poetic and dramatic muses, Kojève and Mansfield too, but in recognisably different ways, Mansfield being sometimes a little more direct and raw in his leanings from political philosophy to questions of training for executive office. Kojève holds that liberal democracy completely satisfies mankind's need for recognition, which need for recognition had previously driven various stages of history (Bloom, 1969, pp. ix - xii; Fukuyama, 1989, p. 3; 1992, pp. 65 - 68; Kojève, 1973, pp. 123, 132, 137, 141, 145, 152 - 154; Nichols, 2007, p. 81). Kojève, in a historical well-rounded kind of Hegelian, Marxist and French-Revolution articulation, develops his own end of history conclusions. Kojève's celebrated Paris lectures on Hegel's thought are, *inter alia*, an outcome of his study of Hegel's *The Phenomenology of Mind* (Hegel, 2010) over and over again, line by line, for more than six years (Bloom, 1969, p. ix). Irrespective of their shades of difference and styles of writing and philosophical orientations, when so-called Straussians lunge they do so with fine on-point focus.

Benardete acknowledges Strauss' influence on his thinking (2000a, pp. 407 – 417), and his close anecdotal observations about Strauss reveal his personal understandings of Strauss and other Straussians (2002, pp. 5 – 54, 85 - 100). Benardete's work is in the process of being assembled and scholars are now attempting to come to grips with his sometimes challenging readings of Plato. One suggested line of enquiry (Davis, 2015, pp. 1 - 5) is to pursue Benardete's possible similarities and differences to Strauss by beginning with analysis of such works as *Socrates' Second Sailing: On Plato's Republic* (1989/92)—duly noting its origins as a review of Strauss's *City and Man* (L. Strauss, 1964)—and to proceed from there to engagement with such early Benardete works as *The Being of the Beautiful: Plato's Theaetetus, Sophist, and Statesman* (1984), including revisions of it, and *The Bow and the Lyre: A Platonic Reading of the Odyssey* (1997) and then on to his *Plato's Laws: The Discovery of Being* (2000b) and finally to his collected essays (Benardete, 2000a), to discern Benardete's own possible deep-writing secret, his

Herodotean poet muse. Benardete appears his own Plato, wrought between philosophy and poetry, and set on his own sailing in search of a city of forms not available in human affairs because it does not exist there. In such a context Benardete is presented as one unravelling the argument within the action. The action of a piece of writing such as a Platonic dialogue is communicated both literally in words, and structurally through speaker hierarchy, setting, order, and related dialogical details, and the argument in the action itself holds the key to understanding the argument of the writing as a whole, if such an argument might exist. In this sense Benardete's reading is Straussian. Nevertheless scholars are careful to note that early Benardete does not always look so different from late Benardete (Davis, 2003, p. 32).

Berger (2013, n. p.) elucidates an example of Benardete's application of his argument-of-and-in-the-action-approach. The suggested deliberate discrepancy between justice as doing no harm, doing the right thing, minding one's own business given in *The Republic* 423c-d (Benardete, 1989/92) and justice subtly changed to minding one's own business well in the *Republic* 426b-c (ibid.) allows Benardete to conjecture that, whereas through all participants performing their tasks well, the city might be a perfectly just city it may not necessarily be a perfectly good city and this follows because for Plato philosophy, not political justice, is the arbiter of the philosophic good. Such a rift provides an opportunity for a reading-between-the-lines of the argument in the action of the dialogue. Benardete uses the perfect-city-*qua*-political-justice versus perfect-city-*qua*-philosophy divide to challenge conventional arguments that Plato seriously held the existence of a separate world of forms and whether Socrates' so-called perfectly just city of speech might serve in any way at all as a guide for matters public.

Rosen's reading of ancient philosophy is a kind of basis from which he draws an optimistic Platonic *eros* and yet, while admitting he uses Straussian interpretive method, Rosen differentiates himself from Strauss and Straussians (2001, n. p.) having little affinity with noble lie hegemony. Rosen says that of the three levels of text Strauss allows—surface, intermediate, where Rosen thinks that Strauss thought matters were worked out, and deep, containing open unsolvable problems—whereas Strauss mainly

concentrated on levels one and two, he, Rosen mainly concentrates on level three problems, a startling statement which might instigate lively contestation with his illustrious classmates were they alive to read it. Rosen is uncomfortable with the idea of so-called genres of interpretation but does allow that form and structure are of importance, and intimates that Straussian heterodoxy of recent years is now a kind of orthodoxy (ibid). Plato's *The Republic* (1952r, 1969a) is for Rosen something of a satire on utopia which provides humans with an opportunity to think about political philosophy and its contribution to good governance. He finds in Gadamer and Friedlander attention to dialogical form and structure sufficient to associate them with the interpretive method of the Neoplatonists (S. Rosen & Bai, 2001, n. p.).

Audio-recordings of lectures by Strauss (1973) and Bloom (1983a, 1983b) are available. Their delivery styles are different—Strauss lectures as he writes, speaking in something of a monotone as though he were reading from any one of his works. Bloom appears to extemporise a little say, for example, from the already captivating kind of writing to be found in Plato's *Symposium in Love and Friendship* (Bloom, 1993) and with perhaps more theatricality and own-the-audience-stagecraft one may imagine from listening. Evidently it was standing room only in Bloom's cigar-and-all-lectures, yet Gadamer notes Rustow's being "utterly captivated by ...[Strauss's] charm, ... wit, and the elegance of his presentation" (Gadamer, 1984, p. 2, my square brackets) of a lecture Strauss delivered at Marburg. Both Bloom's writing and lectures on Plato exemplify his Straussian-method attention to structure, form, allocated speaking roles and the like, and his political philosophy, through literary criticism, leads to social criticism for his times, as is clearly exemplified by his treatment in *Love and Friendship* (Bloom, 1993) of longing, loneliness and isolation and his *Closing of the American Mind* (Bloom, 1987) treatment of perceived issues afflicting liberal education.

Mansfield's literary approach sometimes appears just a little more acerbic than that of Bloom. Mansfield, like his fellow Straussians, distinguishes political philosophy from political Science—a distinction central to the formation of the Straussian movement around 1955 (Benardete & Burger, 2002, p. 46; Pangle, 2006, pp. 43 - 68)—which

political Science, like one may also claim for economics and psychology as disciplines, he intimates has in error travelled a road of pseudo-positive Science. Mansfield views political philosophy as applying to analysis of every-day practical life conditions of P(p)olis, although he allows its efficacy for matters of *Polis* as well, his focus being mainly from Machiavelli forward beacons by questioning about, and distillation of, right preparation for executive power through taming of Machiavellian soul (Mansfield, 1993), recovery of *thumos* (Mansfield, 2007), and understanding of both the good and bad conditions of manliness (Mansfield, 2006), which latter work has won him little admiration from feminists.

Kojève links to Straussians through a Hegel dimension, and for Kojève applied philosophical thought underpinned his own performance of civil and diplomatic duties on behalf of the French government in General Agreement on Tariffs and Trade negotiations in particular, and European Economic Community matters in general. In his debate with Strauss on the nature of tyranny and an underlying human condition which might inform it, Kojève's muse is historical—he settles on a kind of negative desire within a Hobbes-Hegel-Heidegger political anthropology, a desire abhorring non-being and reaching to others in search of recognition that will quench it (Pippin, 1993, p. 148). Strauss's muse is philosophical—humans require the cooperation of others, and therefore relate to others in an internal and private search for completeness equivalent to eternal possession of the good (ibid., p. 148). Scholars that might also be included in respect of a so-called Straussian interpretive genre, namely, Joseph Cropsey (AD 1919 – 2012), Michael Davis (born AD 1943), Ronna Burger (born AD 1947), Thomas Pangle (AD born 1944) and Mary Nichols (born AD unknown date) are not discussed in this Coda.

Strauss's influence also reaches to scholars engaging with Late Mediaeval and Early Modern writers and the Zuckerts, (2006, p. 29) provide a full list of such scholars. Strauss's focus is said to have been on political philosophy *per se* (Benardete & Burger, 2002, p. 177; S. Rosen & Bai, 2001, n. p.; Zuckert, 2006, p. 30) but this has not prevented his being owned and disowned in popular press controversy exemplified by

name calling between so-called Neoconservatives and others during and following the Regan presidency years (Lobe, 2003, n. p.; Spengler, 2003, p. 1; Thompson, 2011, n. p.). Such exchanges, emerging as they do from the cut and thrust of everyday party competition and ideology and interesting in their own ways, are often expressed in glib raw polemic, anathema in style to that of Straussian political philosophy.

There are now Straussians, Neostraussians, Neocons and Leocons, East Coast Straussians, Mid-West Straussians and West Coast Straussians. Such clear cut nominal distinctions on paper, when used to demarcate political Science polemicists from one another, or distinguish political philosophers from day to day political rhetoricians, are not always necessarily without application problems.

Strauss does barb out from his sanctuary of political philosophy (L. Strauss, 1959, p.

Strauss on Widening the Gap Between Ancients and Moderns
Modern political philosophy's rejection of natural right exemplified by writers such as Machiavelli, Hobbes, and Locke has put modernity on a path to nihilism (L. Strauss, 1999, p. 5). Following Machiavelli, Hobbes made necessity, not moral resolve, the basis for action (ibid., 179) and Locke, although different on surface appearances, differs only in degree about the need for absolute rule (ibid. 251). Rousseau (AD 1712 – 1778) and Burke (AD 1729 – 1797) unintentionally widened the gap between ancient and modern (ibid, 252 - 324). There is contestation upon contestation of Straussian claims such as these. (Lenzner, 2009) for example finds three Burkes in Strauss and describes Strauss' treatment of two of them, "messy" (ibid., 318). Zuckert (2002, pp. 169 - 202), while sympathetic to Strauss's reading of Locke as Hobbesian, declares Strauss defeated on that front, notes the Cambridge School's historicist-approach rejection of an esoteric and pro-Hobbes reading of Locke, and in turn questions the Cambridge School's own methodology (ibid 2 – 4). Major (2005, pp. 477 - 485) notes the Cambridge School's influence on political thought in the United States and in exegesis of Skinner (1969) and Strauss (1952/88) concludes that Strauss is closer to historicity than the work of the Cambridge scholars might suggest. Wootton (2003, pp. 8 - 10) interprets Skinner's *Meaning and Understanding in the History of Ideas* (Skinner, 1969) an epitome of both.

223; 1968/1989b, p. 8) and the root cause of his reported many falling outs with colleagues is yet, if ever, to be fully documented. Scholarly analysis of links between Straussian muse and so-called Neoconservative praxis are emerging (Hawse, 2006; Xenos, 2008). That Strauss was all so cocooned in a political philosophy citadel is a scholarly insight now coming under inspection.

There are reported historical big-life-event, as well professional and personal connections, between Strauss and Hannah

Arendt. Their Jewish ethnicity and refugee status, students-of-Heidegger legacy including ongoing respect for their former teacher's mind, their New School and University of Chicago residencies and common but differently understood interest in political philosophy, however defined, are documented (Beiner, 1990, p. 238). The

diamond cut diamond or perhaps diamond cut ruby nature of Heidegger-Arendt sexual and psychological entanglements appears more discussed than Strauss's contested wooing of Arendt (Berkowitz, Keenan, & Katz; Hyman & Moore, 1997; Young-Bruehl, 2004, p. 98) and subsequent apparent lasting bitterness perhaps exacerbated by her assessment of his assessment of National Socialism (Young-Bruehl, 2004, p. 98) and the popularity of her lectures. Yet it is a wonder that there has not been a Marxist analysis of Heidegger-Arendt entanglement in the manner of psychopathy types discussed by say Fromm (1973/1992, pp. 210 - 474) in his *The Anatomy of Human Destructiveness* (1973/1992) or for that matter in a chariot-metaphor tightly argued *eros*-battle framework, or a-reason-is-the-slave-of-the-passions (Hume, 2012, p. 33) come somatic-marker (Damasio, 1995, pp. 165 - 204) variation on that theme. Damasio, a Spinozist neuroscientist, like Hume the philosopher, enhances the status of emotions in matters of consciousness and action, and argues that learning is substantially compromised unless reason is subsequently involved in reflection of somatically stored feeling operating at a higher level than mindless homeostatic emotion. There is a substantial divide between emotion *qua* homeostatic regulation in biological systems regulating life within a body within an electrochemical system of rewards and punishments management of drives and motivations, as Damasio initially defines emotion, and the management of emotions by self in mind, emotions like, anger, jealousy and the like which humans later deal with. The former mindless homeostasis does, though, according to Damasio underwrite the latter as Damasio explains (2010, pp. 38, 51 - 52) and generally in Part 1 of his book (*ibid.*, pp. 2 - 62).

Ettinger reads Arendt's essay version (Arendt, 1978a, pp. 293 - 294) of her birthday tribute speech as apologetic of the Magician of Messkirch (Ettinger, p. 11), Arendt's fox (M. T. Jones, 1998, p. 165), the Führer-Rector of Freiburg University (Farías, 1987, p. 39) who cleansed that university in accordance with Nazi requirements. Taminioux downplays Ettinger's reading of Arendt-Heidegger relationships claiming that Arendt's *Human Condition* (Arendt, 1998) and *Life of the Mind* (Arendt, 1971/1978, 1978b) "reveal at every page, not at all a dependency upon Heidegger ... but rather a constant, and increasingly ironic, debate with him" (Taminioux, 1997, p. ix). Some in turn may

read Villa, who says that Arendt's idea of action is informed by Heidegger rather than Aristotle (Villa, 1995, p. 4), as an apologist for both Heidegger and Arendt, while others may take exception to Villa's being so interpreted. Villa:

think[(s) that] Ettinger gets it wrong in portraying Arendt as a dupe of Heidegger. She respected him as a giant in the history of Western thought, and she was influenced by him, but she wasn't uncritical. In her last book, she expressed her distrust of philosophy as pure thinking divorced from moral and political judgment. (Villa quoted in Honan, 1995, p. 26, my square brackets)

Villa says that "Heidegger was an ordinary German ... who believed the Nazi line and ... was perhaps self-deluded, but he was not part of the apparatus of killing. He hurt some Jews but he also helped some. He was not unique" (ibid., p. 26). Feelings run strong and in any event with publications like those of Farías and Wolin (Farías, 1987; Wolin, 1990, 1995) and/or at a deeper level by Rosen (2002), it is clear that a more considered partial dismantling, if not attempted demolition of Heidegger, has begun at a number of levels.

Many of the reported all too human forays outside of a divine striving of contemplative mind, by Strauss, well known Straussians, and Arendt—here collectively assembled, and running to claims of racism against Sephardic Jews, petty exchanges about Bloom's not quite so top-notch intellect, Strauss' sarcasm and jealousy, Bellow's dislike of Arendt, Cropsy's continually-felt Straussian cold shoulder, questions of homosexuality—are available (Benardete & Burger, 2002; Bloom, 1974; A. Gilbert, 2009; S. Rosen & Bai, 2001; Young-Bruehl, 2004) but these issues, although relative for psychological and sociological readings of Straussian, Heideggerian and Arendtian engagements with philosophy in general, and Plato in particular, will not be pursued further. Arendt's view of such approaches is unflattering. Such approaches, which purport to see through the subject and reveal more about "the subject than the subject knew about herself or is willing to reveal ... [are what she would call] the pseudoscientific apparatuses of depth-psychology, psycho-analysis, graphology, etc., [which] fall into ... [a] category of curiosity seeking", (Arendt quoted in Weissberg, 1957/2000, p. 5, my square brackets). Arendt's context and connotation of curiosity seeking is interesting, coming as it does

from one who predicates practical action on a public space *agon* struggle, participative

Agon = contest or struggle in a sense of improvement through resolution of conflict in human society as discussed on page 165.

interest being difficult to imagine in the first place in the absence of curiosity. Arendt herself, in a TV interview likely made in Germany before 1967, it being in monochrome, says categorically already approximately in her sixty-first year that she is not a philosopher (Arendt, 2013, pp. 1: 15 – 11: 50) and that she wants “to look at politics with an eye unclouded by philosophy” (ibid., 4:08 – 4: 09). The philosopher she says may be neutral in matters of natural Science but not in matters of politics. She associates philosophy with thinking man and politics with action man and claims that except for Kant all philosophers carry an enmity towards politics (ibid., 3: 45).

Beiner (1990, p. 239) names Arendt as the latest member of a tradition running from Machiavelli (AD 1469 – 1567) to Heidegger (AD 1889 – 1976) in which scholars extol ancient political *praxis qua* action in practical philosophy at the expense of ancient political theory involving philosophical wisdom’s patronage of practical wisdom after the manner discussed on pages 232 to 251 of this enquiry. Arendt appears to eschew a view that practical wisdom has to be referred to, and countenanced by philosophical wisdom—a possible explanation in its own right for Beiner’s claim of disinterest between her and Strauss. Beiner reads Arendt’s *Human Condition* (Arendt, 1958/1988) as a demonstration of Arendt’s preference for practical philosophy yet it is ironic that in her tribute to Heidegger on his eightieth birthday Arendt tints him a Thales-in-the-well figure of possible distracted philosophical virtue in her perhaps possible canard against a flawed Periclean action-man portraiture, yet Pericles too as exemplary of good action is not without his critics anyway. For that matter there may well also have been a practical side to Thales, said to have profited through strategic renting and re-renting of olive presses *Politics* 1259a5 – 25 (Aristotle, 1944; 1952r, p. 453), an anecdote repeated by Aristotle as much to demonstrate superiority of philosophy over action as to denigrate a common practise of monopoly. Whether or not Thales was a man renowned in both theoretical and practical philosophy, the point being made here is that Arendt the actionist placed the contemplative above the practical in *a fortiori* softening Heidegger’s reported active Nazi affiliations. Arendt in this may well have cut herself with

Aristotelian scissors bladed by practical wisdom's referral to, and assessment by, philosophical wisdom, the highest of the intellectual virtues.

Arendt's argument appears Heideggerian and Stanley Rosen argues that "Heidegger's continuous attempt in the *Sophist* lectures to transform *phronesis* into a crucial element in the ontology of human existence" (S. Rosen, 2004, p. 249) is a mistake and that "here and elsewhere, Aristotle saw things more clearly than Heidegger" (ibid., p. 249).

Taminiaux (1996, p. 215) also depicts Arendt as arguing that the life of the Greek city state is a phenomenon of practical action, *bios*

Bios Theoretikos and Bios Politikos

Bios theoretikos signifies theoretical wisdom's contemplation of the unchanging and its attendant *sophia*.

Bios politikos signifies political life or active life in the communal space of the P(p)olis occurring through mankind's acting there with others of his species. When such interaction is predicated on a search for a good life *bios politikos* involves practical wisdom's action as *phronesis*.

politikos, and that from Plato (BC c. 427 – c. 347) to Heidegger (AD 1889 – 1976) there has been a promotion of *bios theoretikos* over and above *bios politikos*. As earlier mentioned Heidegger, before Arendt, associates Aristotle's establishment of Ethics as a Science with a false

hierarchy of theoretical philosophy over practical philosophy (Heidegger, 1997, pp. 232 - 233) and links the actions of great statesmen with the highest order of being (Heidegger, 1959, p. 62). Arendt's step to *bios politikos* is a big one and to accomplish it she adduces Kant to her project.

Arendt's Definitions of Work and Labour

Arendt distinguishes labour *ponein* which makes the products essential for life, food and clothes, which labour she brands non-productive to distinguish it from work *poiesis*, which produces the more durable goods which make up her world, schools, museums, literature, artworks and the like. Her classification (Arendt, 1998, pp. 80 then 80 - 92), based on etymology and grammar and reference to Locke's distinction of laboring body (painful slave-like-animals-pulling-ploughs-work), and working hands at craftsman-like activity, is idiosyncratic. Arendt introduces the word *ergazesthai* = work to further differentiate painful work from work of the craftsman, *ponein* but this brings little further clarification. There is a similar discussion in *Charmides* 163a-c (Plato, 1952b; 1992b, pp. 73 - 74, footnotes 36 and 37) where *ergazesthai* = working is distinguished from making = *ponein* and doing = *prattein*. In her adduction Arendt places emphasis on enduring distinctions between work as toil and work as craftsmanship in various European languages, for example *travailler* (toil) and *ouvrer* (craft).

Arendt reads Kant as the first modern to challenge the supremacy of theoretical philosophy, through which challenge she establishes *bios politikos* as a defence against a human condition sense of loneliness and longing perhaps, in her own case, revealed through a possible noetic identification of it, loneliness

and longing, exemplified in her attempted slipping-into-the-skin-of examination

(Weissberg, 1957/2000, p. 4), of the life of Rachel Varnhagen (Arendt, 1957/2000, p. 4), and possibly put there in the first place through her own experience of powerful political, racial and early-life erotic-battle experience. Humans may, however, claim dignity through practical action. Arendt's P(p)olis—it cannot easily be a capital P esoteric *Polis* in the sense of esoteric used in this enquiry—is no city of ideas but rather a Periclean P(p)olis in which the human condition is one of action (*praxis*), work (*poiesis*) and labour (*ponein*) characterized by distinctions between rulers and ruled and private and public.

It is no simple matter to adduce Kant in part or in whole to one's particular project nor

<p><i>Agon</i> = contest or struggle in a sense of improvement through resolution of conflict in human society as discussed on page 165.</p>
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for that matter to attempt a brief articulation of Kant of a kind which now follows. Yet some minimal working summary of Kant is required to serve as a backdrop to further discussion of Arendt's

adduction of elements of Kant to her *agon*. In consequence, before proceeding further in discussing Arendt's adduction of Kant, I provide a brief discussion of Kant's system in general, and his practical reason in particular. This discussion continues until page 165 where I return to Arendt's adduction of Kant.

Brief Explanation of Kant's So-called Transcendental Philosophy

Kant conjectures that understanding results from reason at work in judgement, and reason so defined is that cogitation implicated in discerning (1) truth, inherent in human understanding, (2) goodness, inherent in practical action, and (3) beauty, inherent in aesthetics, these three divisions, generally and respectively being articulated in three works *Critique of Pure Reason* (Kant, 1952c), *Critique of Practical Reason* (Kant, 1952b) and *Critique of Judgement* (Kant, 1952a) which might be thought of as constituting his project of transcendental criticism by which name Kant's philosophy is now generally known. Judgement forms a middle term between reason and understanding in both pure and practical reason (Kant, 1952c, p. 461).

Transcendental philosophy may be understood as deduction of those elements which constitute the conditions for knowledge itself.

In the case of (1) above, truth inherent in human understanding, which is the realm of

Hegel on Kant's Transcendental Criticism

To mention one example only of big barbarous expressions, Kant calls his philosophy (*Kritik der reinen Vernunft*, p. 19) a Transcendental philosophy, i.e. a system of principles of pure reason which demonstrate the universal and necessary elements in the self-conscious understanding, without occupying themselves with objects or inquiring what universality and necessity are; this last would be transcendent. Transcendent and transcendental have accordingly to be clearly distinguished. Transcendent mathematics signifies the mathematics in which the determination of infinitude is made use of in a preeminent degree: in this sphere of mathematics we say, for instance, that the circle consists of an infinitude of straight lines; the periphery is represented as straight, and since the curve is represented as straight this passes beyond the geometric category and is consequently transcendent. Kant, on the contrary, defines the transcendental philosophy as not a philosophy which by means of categories passes beyond its own sphere, but one which points out in subjective thought, in consciousness, the sources of what may become transcendent. Thought would thus be transcendent if the categories of universality, of cause and effect, were predicated of the object, for in this way men would from the subjective element 'transcend' into another sphere. We are not justified in so doing as regards the result nor even to begin with, since we merely contemplate thought within thought itself. Thus we do not desire to consider the categories in their objective sense, but in so far as thought is the source of such synthetic relationships; the necessary and universal thus here receive the significance of resting in our faculties of knowledge. But from this faculty of knowledge Kant still separates the implicit, the thing-in-itself, so that the universality and necessity are all the time a subjective conditionment of knowledge merely, and reason with its universality and necessity does not attain to a knowledge of the truth⁽¹⁾. For it requires perception and experience, a material empirically given in order, as subjectivity, to attain to knowledge. As Kant says, these form its "constituent parts"; one part it has in itself, but the other is empirically given⁽²⁾. When reason desires to be independent, to exist in itself and to derive truth from itself, it becomes transcendent; it transcends experience because it lacks the other constituent, and then creates mere hallucinations of the brain. It is hence not constitutive in knowledge but only regulative; it is the unity and rule for the sensuous manifold. But this unity on its own account is the unconditioned, which, transcending experience, merely arrives at contradictions. In the practical sphere alone is reason constitutive. The critique of reason is consequently not the knowing of objects, but of knowledge and its principles, its range and limitations, so that it does not become transcendent⁽³⁾. (Hegel, 1892-96/1995, pp. 431 - 432)

Notes: (1) Hegel's references (1) to (3) refer to: (1) Kant: *Kritik der reinen Vernunft*, pp. 255, 256), (2) *Kritik der reinen Vernunft*, p. 107, and (3) *Kritik der reinen Vernunft*, pp. 497, 498, *Kritik der prakt. Vernunft* (Fourth edition, Riga, 1797), p. 254, *Kritik der Urtheilskraft* (Third edition, Berlin, 1799), Preface, p. v.

Source: Hegel, F. W. G. (1892-96/1995). *Lectures on the History of Philosophy*. (pp. 431 - 432). (E. S. Haldane & F. Simson, Trans.). London: Kegan, Paul, Trench, Trubner and Co., Ltd.

Kant's empirical knowledge, these conditions of knowledge itself are found to be the *a priori* forms of time and space which accommodate sensation, the categories, which accommodate judgement at its work in discerning and comprehending truth, and *the ideas* which accommodate judgement at its work of enumerating and systematising made judgements into a unified whole. The *a priori* forms of time and space, the categories and the ideas are the essence of pure reason itself—that part of reason having no origin in experience.

In particular, in the realm of empirical knowledge, the ideas do not allow mankind to reach the transcendent, that lying beyond mental phenomena. Kant's position is that while all empirical knowledge may well begin with experience, it does not follow that all knowledge arises out of experience alone. In respect of (2) above, the realm of practical reason and human morality,

the ontological precondition is the toughness of moral consciousness and for (3) above, judgement operating through taste in aesthetic discernment between differing desires and pleasures, it is the beautiful. That is to say, taken respectively, oughtness and the beautiful are to practical reason, and to judgement aestheticized as discerned taste, what

the *a priori* time and space, the categories and the ideas are to synthetic knowledge and

Behind the Text: Putting a Tag on Kant									
Term	Explanation								
manifold	The multitude of incoming sensation, or of phenomena, or of synthetic connection as the case may be. Judgement requires selection from among a manifold of alternatives whether in synthetic or analytic domains as explained below.								
sensation	That through which beings are given to us; the materials for knowledge; concepts percolated from the manifold of sense activity through the pattern making of <i>time</i> and <i>space</i> . Sense perception is thus the product of an <i>a priori</i> given and an <i>a posteriori</i> derived. Whatever it is, the process which produces intuition, consciousness to itself in the beginning, is both receptive and active. Intuition, intuitive reason, sensibility, internal sensation, sense perception are other terms used along with sensation to tag Kant's product of <i>Anschauung</i> .								
phenomena and knowledge of them	If space and time exist only as <i>a priori</i> givens of pure reason then beings pattern made by time and space and manifested in internal intuition can only exist there and not elsewhere because time and space do not exist independent of, outside of, mind. What "exists" outside internal sensation is named the thing-in-itself, whatever it may be. Phenomenal knowledge is thus knowledge derived from working over internal sense intuition. Phenomena are intuitions, outputs of the patterning of space and time. Phenomena are representations of things in themselves not relating to possible experience. "Where is to be found the third term, which is always requisite of a synthetical proposition, which may connect in the same proposition, connections which have no logical (analytic) connections with each other? The proposition never will be demonstrated ... without making reference to the empirical use of the understanding, and thus ... completely renouncing pure and non-sensuous judgement" (Kant, 1952c, pp. 98 - 99).								
the pure in pure reason	<i>A priori</i> conditions for knowledge, the pure dimensions of sensation, understanding and reason owe nothing of their existence to experience. Rather they come into play when experience brings its material to them <i>a posteriori</i> , and when in play their function is formative.								
	<table border="1"> <thead> <tr> <th>Activity</th> <th><i>A priori</i></th> </tr> </thead> <tbody> <tr> <td>Sensuous intuition</td> <td>Time and space</td> </tr> <tr> <td>Verstand <i>qua</i> understanding at work in transforming sensuous intuition into concepts</td> <td>The categories: unity, plurality, totality, reality, negation, limitation, subsistence and inherence, causality and dependence, reciprocity, possibility and impossibility, existence and non-existence, and necessity and contingency.</td> </tr> <tr> <td>Vernunft <i>qua</i> comprehension at work in ascending systematisation of the conditioned to the unconditioned, that is, systematisation upwards from the many concepts to distillation of principles. Pure reason "never refers direct to objects, but to the concepts of objects brought to it by the understanding (Kant, 1896, pp. 272 - 273).</td> <td>The transcendental ideas: soul, cosmos, god which have no object corresponding to them in experience yet which by connections amongst themselves—knowledge of self <i>qua</i> soul leads to knowledge of the world <i>qua</i> cosmos which leads to knowledge of supreme being <i>qua</i> god—occasion a unified system of knowledge.</td> </tr> </tbody> </table>	Activity	<i>A priori</i>	Sensuous intuition	Time and space	Verstand <i>qua</i> understanding at work in transforming sensuous intuition into concepts	The categories: unity, plurality, totality, reality, negation, limitation, subsistence and inherence, causality and dependence, reciprocity, possibility and impossibility, existence and non-existence, and necessity and contingency.	Vernunft <i>qua</i> comprehension at work in ascending systematisation of the conditioned to the unconditioned, that is, systematisation upwards from the many concepts to distillation of principles. Pure reason "never refers direct to objects, but to the concepts of objects brought to it by the understanding (Kant, 1896, pp. 272 - 273).	The transcendental ideas: soul, cosmos, god which have no object corresponding to them in experience yet which by connections amongst themselves—knowledge of self <i>qua</i> soul leads to knowledge of the world <i>qua</i> cosmos which leads to knowledge of supreme being <i>qua</i> god—occasion a unified system of knowledge.
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understanding (To understand is to judge.)	That through which objects are thought: that which acts on the material of sense perception. To understand is to judge and <i>judgement</i> as <i>verstand</i> occurs when reason connects sense perceptions come concepts together according to <i>a priori</i> categories. Judgement as <i>vernunft</i> occurs when reason further arranges judgements of <i>verstand</i> so made according to its own <i>a priori</i> endowments called the ideas: soul, cosmos, God. (This box continues on the next page.)								

truth (Kant, 1952a, pp. 461 - 462; 1952b, pp. 291 - 295).

In the *Critique of Pure Reason* (Kant, 1952c), under the heading

Transcendental Aesthetic (ibid., pp. 23 - 33),

Kant first examines the process of sensation and establishes

space and time as original intuitions of human

perceptions—

"Space and time are the pure forms [of those perceptions] and sensation the

matter" (Kant, 1952c, pp. 29 - 30, my square brackets). Space and time pattern-make manifold sensations into percept come concept. Reason, when it operates on intuited

sensation and is at work in articulating those various intuitions *qua* thought or concept

Behind the Text: Putting a Tag on Kant (Continued)	
Term	Explanation
reason	That cogitation charged with discerning (1) truth, inherent in understanding, (2) goodness, inherent in practical action, and (3) beauty and final cause, inherent in aesthetics. Pure reason is found in the conditions for knowledge itself. Pure reason is that part of reason which is innate, which is not derived from experience.
analytic knowledge	A judgement which articulates an idea but adds nothing new to it. The predicate contains nothing that is not already contained in the subject. For example, bodies are extended, body has shape, are examples of analytic judgements, extension and shape being attributes of body itself. For Kant analytic judgement so defined is not knowledge proper.
synthetic judgements	A judgement which links the subject to a predicate, which predicate contains something not contained in the subject itself, constitutes synthetic knowledge. The knowledge contained in the predicate, not being transmitted there from the subject, is postulated coming there from experience, that is, coming there <i>a posteriori</i> . For example, that the moon is a satellite of the earth is a synthetic judgement. For Kant, synthetic judgement is knowledge but not all synthetic judgement is scientific knowledge. Whereas Hume posits that cause and effect might not be related in the manner of analytic knowledge Kant allows a possibility that not all ideas contributing to judgement of cause and effect relations need necessarily rest on experience alone. Innate givens of pure reason, time and space, in Kant's terms "pure forms of sensible intuition" (Kant, 1896, p. 17) and then the categories and the ideas, might play an <i>a priori</i> role in preparing mind for <i>a posteriori</i> reception of experience and paves a way for scientific knowledge as explained further below in this table.
knowledge	Knowledge then is synthetic judgement because it enriches and extends understanding. Kant is, <i>inter alia</i> , searching for the underlying conditions which make such knowledge possible.
scientific knowledge	Judgement which is necessary and universal, true in all cases, is scientific knowledge. In scientific knowledge the union between subject and predicate is not accidental. For example, is the statement bodies attract one another an example of a statement containing scientific knowledge. To answer yes is to answer too simply. Such a statement would fall to Hume if it is in fact only made <i>a posteriori</i> from experience and from a limited number of observations. True scientific knowledge for Kant cannot rest on experience alone but must include a rational component and consist of reason and observation. For Kant mathematical knowledge—geometry is the knowledge of space, and arithmetic, as number and duration, is the knowledge of time—is true scientific knowledge. Kant allows that scientific knowledge contains <i>a priori</i> synthetic contributions as principles and that metaphysics ought to contain <i>a priori</i> synthetic knowledge. For Kant scientific knowledge, necessary, universal true in all cases knowledge, is synthetic judgement <i>a priori</i> .
noumenal knowledge	The noumena are beings which certainly must exist, but which cannot be known to exist by themselves outside time and space—time and space being inherent in reason—but which nevertheless catalyse sensation. Knowledge about noumena, beyond the postulate of the existence of noumena themselves, is hard to come by for humans who employ reason in pursuit of it because the senses are baffled. The concept noumenon is a problematic concept which sets a limit for the understanding. It is a concept which contains no contradiction but the objective reality of which can never be known. The noumena are the things-in-themselves, Kant's <i>ding an sich</i> , whatever they may be, as differentiated from the phenomena, the appearances of internal intuition presumably present in part as a result of noumena. (This box continues on the next page.)

but not at making linkages between them, produces analytic knowledge which is not necessarily true knowledge.

In the same book, under the heading Transcendental Logic (ibid., p. 34 -200) Kant then examines the process of understanding or reason at its work of judgement and identifies how reason next operates on the material concepts formed by time and space from the manifold to make linkages between them. Such linkages are the substance of synthetic knowledge which for Kant is

empirical knowledge proper. Kant's word for reason at work in making synthetic judgements is *verstand*.

Schematism, Kant's word for the process by which phenomena of internal sensation are

Behind the Text: Putting a Tag on Kant (Continued)	
Term	Explanation
empirical knowledge	<p>Knowledge derived from experience and which is not innate. Kant associates the term empirical with the <i>a posteriori</i>, that is, with the experiential operations of cognition. Empirical knowledge emerges when ontological predicates order and rank the phenomenal content of consciousness, the content that would not itself be were there no raw experiential sense data in the first place. Empirical is the opposite of transcendental.</p> <p>"The effect produced by an object upon the faculty of representation (Vorstellungsfähigkeit), so far as we are affected by it, is called sensation (Empfindung). An intuition (Anschauung) of an object, by means of sensation, is called empirical. The undefined object of such an empirical intuition is called phenomenon (Erscheinung)." (Kant, 1896, p. 15).</p>
the transcendental and transcendental knowledge	<p>"I have myself given this my theory the name of transcendental idealism ... [which is not to be confounded with the idealism of Descartes or Berkeley]. My idealism concerns not the existence of things ... it concerns the sensuous representation of things, to which space and time especially belong. Of these [viz., space and time], consequently of all appearances in general, I have only shown, that they are neither things (but mere modes of representation), nor determinations belonging to things in themselves. But the word "transcendental," which with me means a reference of our cognition, i. e., not to things, but only to the cognitive faculty, was meant to obviate this misconception. Yet rather than give further occasion to it by this word, I now retract it, and desire this idealism of mine to be called critical" (Kant, 1909/1994, pp. 48 - 49, first square brackets are mine.).</p> <p>The transcendental is the realm of a kind of knowledge which is both synthetic and <i>a priori</i>. Transcendental knowledge is a kind of knowledge concerned with the necessary conditions for the possibility of experience. All knowing subjects are postulated as recipients of certain transcendental truths, whether or not they are aware of it. The realm of transcendental knowledge separates the realm of empirical knowledge from the realm of speculation about the transcendental realm.</p>
transcendent	The domain of thought operating beyond the limits of experience; the realm of objects that cannot be reached via sensed experience. It is the realm of the noumena, a realm of knowledge beyond that attainable by humans. The signposts, if even they can be called so, to that empirically unattainable transcendental realm, are the ideas. Namely, God, cosmos, and soul.
the ideas	Universal predicates, God, cosmos and soul, which feature in systemising a unified whole in empirical realms and help engender a capacity for metaphysical belief providing something of a reach, if reach be otherwise possible, to a transcendent realm.
Kant's primary postulate	Nothing which is necessary and universal can come from experience.
<p>Source: Compiled by Ian Eddington from: Kant, I. (1952). <i>Critique of Pure Reason</i>. (pp. 1 - 250). Translated by J. D. M Meiklejohn. Chicago: William Benton; Kant, I. (1952). <i>Critique of Practical Reason</i>. (pp. 289 - 361). Translated by T. K. Abbott. Chicago: William Benton; Kant, I. (1952). <i>Critique of Judgement</i>. (pp. 459 - 613). Chicago, William Benton; Kant, I. (1896). <i>Critique of Pure Reason</i> (pp. 1 - 298). Translated by F. Max Muller. London: The Macmillan Company; Hegel, F. W. G. (1892-96/1995). <i>Lectures on the History of Philosophy</i>. (3B: Kant, pp. 4 - 5). Translated by E. Haldane and F. Simson. London: Kegan, Paul, Trench, Trubner and Co., Ltd; Weber, A. (1908). <i>History of Philosophy</i>. (pp. 1). New York, Charles Scribner's Sons; Kant, I. (1909/1994). <i>Kant's Prolegomena to Any Future Metaphysics</i>. (pp. 48 - 49). Chicago: Open Court Publishing Company; Sala, G. (2008). (passim). <i>The Concept of the Transcendental in Kant and Lonergan</i>. Munich: Munich School of Philosophy. (Hegel, 1892-96/1995; Kant, 1896, 1909/1994, 1952a, 1952b, 1952c; Sala, 2008; Weber, 1897/2012).</p>	

synthesised into knowledge (ibid., pp. 61 - 64), involves time acting as an intermediary between intuitions and concepts. First as earlier discussed time and space form the material of the manifold material sense impressions, which formed impressions are in turn synthesised into empirical knowledge of phenomena, through time's acting to bring experience to the categories *a posteriori*

allowing the emergence of empirical knowledge. Time is able to partake in its schemata by virtue of its nature.

Considered as the essence of mathematics *qua* moments and number, time expresses the

Behind the Text: Kant in the Beginning

“Whatever the process and the means may be by which knowledge reaches its objects, there is one that reaches them directly, and forms the ultimate material of all thought, viz. intuition (Anschauung). This is possible only when the object is given, and the object can be given only (to human beings at least) through a certain affection of the mind (Gemüth).

This faculty (receptivity) of receiving representations (Vorstellungen), according to the manner in which we are affected by objects, is called sensibility (Sinnlichkeit).

Objects therefore are given to us through our sensibility. Sensibility alone supplies us with intuitions (Anschauungen). These intuitions become thought through the understanding (Verstand), and hence arise conceptions (Begriffe). All thought therefore must, directly or indirectly, go back to intuitions (Anschauungen), i.e. to our sensibility, because in no other way can objects be given to us.

The effect produced by an object upon the faculty of representation (Vorstellungsfähigkeit), so far as we are affected by it, is called sensation (Empfindung). An intuition (Anschauung) of an object, by means of sensation, is called empirical. The undefined object of such an empirical intuition is called phenomenon (Erscheinung).

In a phenomenon I call that which corresponds to the sensation its matter; but that which causes the manifold matter of the phenomenon to be perceived as arranged in a certain order, I call its form.

Now it is clear that it cannot be sensation again through which sensations are arranged and placed in certain forms. The matter only of all phenomena is given us *a posteriori*; but their form must be ready for them in the mind (Gemüth) *a priori*, and must therefore be capable of being considered as separate from all sensations.

I call all representations in which there is nothing that belongs to sensation, pure (in a transcendental sense). The pure form therefore of all sensuous intuitions, that form in which the manifold elements of the phenomena are seen in a certain order, must be found in the mind *a priori*. And this pure form of sensibility may be called the pure intuition (Anschauung).

Thus, if we deduct from the representation (Vorstellung) of a body what belongs to the thinking of the understanding, viz. substance, force, divisibility, etc., and likewise what belongs to sensation, viz. impermeability, hardness, colour, etc., there still remains something of that empirical intuition (Anschauung), viz. extension and form. These belong to pure intuition, which *a priori*, and even without a real object of the senses or of sensation, exists in the mind as a mere form of sensibility.

The science of all the principles of sensibility *a priori* I call Transcendental Aesthetic. There must be such a science, forming the first part of the Elements of Transcendentalism, as opposed to that which treats of the principles of pure thought, and which should be called Transcendental Logic.

In Transcendental Aesthetic therefore we shall first isolate sensibility, by separating everything which the understanding adds by means of its concepts, so that nothing remains but empirical intuition (Anschauung).

Secondly, we shall separate from this all that belongs to sensation (Empfindung), so that nothing remains but pure intuition (reine Anschauung) or the mere form of the phenomena, which is the only thing which sensibility *a priori* can supply. In the course of this investigation it will appear that there are, as principles of *a priori* knowledge, two pure forms of sensuous intuition (Anschauung), namely, Space and Time” (Kant, 1896, pp. 15 - 17).

cardinal categories of quantity *qua* a number of moments, quality *qua* presence or non-presence of events, modality as the possible, real, eternal, and relationship or cause and effect. Time, of and in itself, is also of the nature of the cardinal categories and thus can inhere in, and partake of them, in its work of bringing internal intuitions to the ontological conditions of pure reason. Principles derived from the four cardinal categories, like the synthetic laws in turn derived from them, are innate

givens not originating from experience and they inform that phenomena consist of quantity and quality, and are themselves possible, real and related through cause and

effect. These principles bring legitimacy to empirical knowledge but do not allow empirical knowledge access to the transcendent.

Yet not all synthetic judgement constitutes scientific knowledge. Scientific knowledge

**The Principal Focus of Transcendental
Philosophy**

Kant's principal problem, is treated in his "Deduction of the Pure Concepts of Understanding in two parts, one treating of the objects of pure understanding and intended to show and explain the objective value of its concepts *a priori*. It is, therefore, of essential importance for my purposes. The other is intended to enquire into the pure understanding itself, its possibility, and the powers of knowledge on which it rests, therefore its subjective character; a subject which, though important for my principal object, yet forms no essential part of it, because my principal problem is and remains, What and how much may understanding (Verstand) and reason (Vernunft) know without all experience? and not, How is the faculty of thought possible?" (Kant, 1896, pp. 22 - 23).

must be true in all cases: it must be necessary and universal knowledge. In Aristotle's terms there should be no temporary accident between subject and predicate, the linkage must be universal and necessary. Kant acknowledges what later became known as Hume's problem: human experience can only provide limited confirmations so that knowledge derived *a posteriori* on the basis of limited confirmations, in effect knowledge derived empirically from experience, cannot for Kant be

scientific knowledge. For Kant only knowledge emanating from *the priori* of pure reason and based on observation can be scientific knowledge also called synthetic judgement *a priori*, and such knowledge which is the lot of mathematics (Kant, 1909/1994, pp. 18 – 26, 25, 40), might be found in principles of physics as Kant defines physics, if not physics itself (*ibid.*, pp. 51, 64 – 65, within 50 – 90, 91), and should also be the knowledge of metaphysics (*ibid.*, pp. 137, 139 – 147).

Just as space and time unify the manifold impressions of incoming data rendering them analytically accessible, and just as the categories unify the manifold of analytical content, making synthetic knowledge possible, so too the ideas unify the manifold of intellectual experience allowing systematisation of thought. Vernunft, this second level of understanding at work in judging judgements, is discussed under the heading Transcendental Dialectic.

Vernunft is superior to verstand. Vernunft systematises the plethora of judgements: under the idea of cosmos the physical sciences emerge, under the idea of soul psychology emerges and under the idea of God theology emerges, none of them without difficulty

Kant's Categories Referred to in the Text				
Kinds of Judgements with Examples.	Categories	Categories Fundamental	Ruling Principle	Laws
(1) The universal judgement: all women are mortal.	totality	quantity	Institution "All intuitions are extensive quantities" (Kant, 1952c, p. 68). That is to say every phenomenon (being of the mind) represented in space and time is a quantity (ibid., pp. 68 – 69).	continuity
(2) The particular judgement: some women are thieves.	plurality			
(3) The singular judgement: Peter is a criminal.	unity			
(4) The affirmative judgement: mankind is mortal.	reality	quality	Anticipations of Perception "In all phenomena the Real, that which is an object of sensation, has Intensive Quantity, that is, has a Degree" (ibid., p.69). Intensity of degree is quality (ibid., pp. 69 – 72).	
(5) The negative judgement: mankind is not immortal.	negation			
(6) The limiting judgement: the soul is immortal.	limitation			
(7) The categorical judgement: the Devil is evil.	subsistence and inherence	relation	Analogies of Experience "Experience is possible only through the representation of a necessary connection of perceptions" (ibid., p.72). In the proof of this axiom chance and fate are ruled out and all phenomena are related through causality – cause and effect (ibid., pp 72 – 85).	causality
(8) The hypothetical judgement: if God is just he will save the meek.	causality and dependence			
(9) The disjunctive judgement: either Oxford or Cambridge is winning the boat race.	reciprocity			
(10) The problematic judgement: the universe is perhaps, unbounded	possibility and impossibility	modality	Postulates of Empirical Thought "1 That which agrees with the formal conditions (intuition and conception) of experience is <i>possible</i> ." (ibid., p. 85) "2 That which coheres with the material conditions of experience (sensation) is <i>real</i> ." (ibid., p. 85) "3 That whose coherence with the real is determined according to universal conditions of experience is (exists) <i>necessary</i> ." (ibid., p. 86). Concerning modality then, phenomena (those which conform to the law of space and time) are possible, real and necessary (ibid., pp. 85 – 91).	
(11) The assertory judgement: humans are bipeds.	being and non being			
(12) The apodictic judgement: God must be just.	necessity and contingency			
Source: Constructed by Ian Eddington from Kant, I. Critique of Pure Reason, (pp. 68 – 93). Translatr J. D. M. Meiklejohn, Chicago. William Benton.				

(Kant, 1952c, p. 119). Kant argues (a) that while the ideas cosmos, soul, and God cannot be pattern made by time and (b) that while they constitute the ultimate essence of pure reason, they do not by virtue of their role in making phenomenal understanding possible, allow access to the transcendent. For example, in the last sections of the transcendental Dialectic Kant argues that it is not possible to prove or disprove the existence of the soul (Kant, 1952c, pp. 120 - 129), matter as cosmos

(ibid., pp. 129 – 172), or God (ibid., pp. 174 – 209) outside of mind by cogitation

proceeding on the basis empirical knowledge. This argument concerning soul is grounded in a demolition of Wolffian and Cartesian psychology. A method known as the antinomies is used in the case of matter. Antinomies consist of the juxtaposition of equally plausible theses and antithesis about the nature of matter and their purpose is to demonstrate that the mysteries of cosmology lie beyond the boundary of empirical knowledge. Kant's criticism of the idea of God is grounded in, and bounded by, ontology, cosmology and theology which in turn are all found wanting in respect of proofs of the existence of God.

Yet Kant's denials are not the end of the matter in respect of inquiry beyond phenomena.

Kant on Matter and Form
In a phenomenon I call that which corresponds to the sensation its matter; but that which causes the manifold matter of the phenomenon to be perceived as arranged in a certain order, I call its form. (Kant, 1896, p. 15).

The ideas *per se* remain as a basis for a moral consciousness which countenances reach to eternal and universal conditions in which higher truth inheres. Kant approaches such "pure practical reason" (Kant, 1952b, p. 291) in his second critique in which he conjectures moral law to be its own consciousness inherent in human will's freedom and patronage of practical action, of which more later.

In short, in so far as pure reason in the realm of empirical knowledge is concerned, outside of mathematics, reason at work in unifying the manifold of internal intuition into phenomena, and of unifying the manifold connections between phenomena, makes its reality. That is, concerning "the original laws of the understanding [the laws governing the making of phenomena] it seems at first strange, but is not the less certain, to say: The understanding does not derive its laws (*a priori*) from, but prescribes them to, nature" (Kant, 1909/1994, p. 82; 2004, p. 58).

Yet Constructivists might proceed with caution before simplistically claiming Kant as one of their own.

I grant by all means that there are bodies without us, that is, things which, though quite unknown to us as to what they are in themselves, we yet know by the representations which their influence on our sensibility procures us, and which we call bodies, a term signifying merely the appearance of the thing which is unknown to us, but not therefore less actual. Can this be termed idealism? It is the very contrary. (Kant, 1909/1994, p. 43).

Reason at its work of understanding, of making phenomena is, according to Kant, both receptive and active, not solely active. In particular, and more importantly, in so far as it is active, reason is regulative rather than constitutive² of phenomena (Weber, 1897/2012, p. 463). The made phenomena consist of something from without acted on by the schema of time and space which as *a priori* givens add nothing of themselves beyond regulation. For Kant, who admits the existence of noumena, the schematism of space and time which brings them to consciousness is “an art hidden in the depth of the human soul, the true sense of which we shall hardly ever be able to understand” (Kant, 2007, p. 178). Only in the sphere of practical reason is reason allowed a constitutive role and then only under freedom of will.

For example, by virtue of the *Critique of Practical Reason* (Kant, 1952b) Kant goes some way to ameliorating perceptions he may have held about skepticism and materialism, and restrictions imposed on empirical knowledge articulated in the *Critique of Pure Reason* (Kant, 1909/1994, pp. 70, 73, 132, 120 - 138). Under practical reason, reason is again regulative not constitutive except when it is under the direction of will which constitutes the basis of our faculties. Will is free and implies oughtness, and practical reason’s oughtness predicated on freedom exemplifies Kant’s face off with pure practical reason and is a high point in his glance towards noumenal being. Whether or not practical reason *qua* will under oughtness is a noumenon bringing forth consciousness of moral law itself is one question, but in respect of the question of higher understanding Kant pronounces “the authority of practical reason ... superior to that of theoretical reason, and in real life the former predominates” (Kant, 1909/1994, p. 253). Practical reason is the form of the will, and freedom, which is denied under pure reason because physical law is determined through cause and effect, is allowed under practical reason. The sentence immediately following the previous quotation reads “Hence we should, in any case, act as if it were proved that we are free, that the soul is immortal, that there is a supreme judge and rewarder” (ibid.). This sentence makes simple

² Again the term is used in the sense of “to make (a thing) what it is; to give its being to, form, determine”, to “to make up, form, compose; to be the elements or material of which the thing spoken of consists” (OED, 1970b, pp. 875 - 876), a usage which began circa 1552, and has continued to this day.

adduction of Kant as a basis for praxis above *theoria*, by Arendt or others, a not so complete coup in respect of a moral basis for action.

Kant explains that the moral law which binds consciousness in respect of practical action, as opposed to the truth or otherwise of physical law in empirical experience, finds its necessary and universal in the *oughtness* of moral consciousness. Neither happiness, perfection, moral sense nor pleasure informs the moral law (Kant, 1952b, pp. 338 - 340). Rather the moral law is its own foundation consisting of oughtness, and its postulate of freedom to choose, and it is imposed on the will by practical reason. The idea of freedom, not the ideas of God and immortality, is the condition of the moral law which in turn provides consciousness its understanding of freedom (Kant, 1952b). Duty to moral law is moral law's prescription for practical action. Will as practical reason is its own witness of noumenal being, free from the questioning doubt inherent in pure reason. The will does not derive from experience. Judgement, to think is to judge, is said to mediate between pure reason, the true, and practical reason, the good, on two levels: the teleological which regulates experience, and the aesthetic which regulates beauty. Judgement is:

... the faculty by which we subsume the particular under the universal (law), or find the universal under which the particular is to be arranged. It refers the manifold to the one, the sensible order to the supersensible principle of *design*, and since all actualisation of design produces in us a sentiment of the *beautiful*, the faculty of judgement is also concerned with the aesthetic aspect of nature and art. (W. Turner, 1903/2012, pp. 544 - 545)

In the perfect, humans find intellectual or conceptual satisfaction and in the beautiful, humans find emotional or aesthetic satisfaction. In the *Critique of Judgement* (Kant, 1952a), under the heading of Analytic of Aesthetic Judgement (Kant, 1952a, pp. 476 - 493) Kant determines that beauty's quality is pursued through disinterested satisfaction (ibid., pp. 476 - 479), its quantity is its ability to please universally (ibid., pp. 479 - 483), its relation is concept free (ibid., pp. 483- 491- 493), and its mode is to please necessarily (ibid., p. 493). The beautiful thus of necessity universally provides disinterested pleasure without the concept of end or design. The beautiful brings emotional satisfaction and when humans feel the sublime they are transported, towards

the infinite, in a state of formless and boundless spiritual satisfaction. Under the heading of the Dialectic of the Aesthetic Judgement (ibid., pp. 540 - 548) Kant establishes the essential importance of the beautiful as a symbol of the moral good (ibid., pp.547 – 549). Kant asks hard questions about the nature of a common sense through which the elements of taste might be united and in passing identifies the ought as “the objective necessity of the coincidence of the feeling of all with a particular feeling of each” (ibid., p. 493) which may help in part explaining Arendt’s adduction of Kant and a community sense construct she brings to her practical action *agon*.

If, in her adduction of Kant, Arendt’s *agon* is to be associated with Kant’s practical

Agon

In a broad sense *agon* is struggle. Agonistic political philosophy centres on a tenet that under appropriate conditions of *agon*, reconciliation of opposing views may lead to improvement and betterment of society. Towards the other end of a scale would be “being for itself of subjectivity” (Adorno, 2012, p. 8), and in-between these ends would be disputed *agons* in the names of such persons as Marx, Hegel, Nietzsche, and Arendt, and Foucault (Adorno, 2012, p. 11; Honig, 1993, pp. 528 - 533; Lightbody, 2010, p. 24). The conventional definition of *agon* as resolutory struggle is itself coming under question. In a recent book Calaguori (2012) questions the veracity of agonism understood as reconciliation and resolution through struggle suggesting that there is a down side in that behind the veil of social and moral progress *qua* agonistic resolution, conflict progresses to domination in various domains: legitimisation of war, consolidation of power and opportunity, human instinct or otherwise for self-preservation, competition and violence, and sport and art as pseudo-agonism.

reason, her aestheticisation of judgement might be associated with Kant’s *Critique of Judgement* (1952a) in which Kant searches for the *a priori* principle of aesthetic feeling and finds it to be the beautiful (Kant, 1952a, p. 550).

In all, Kant’s wider system postulates noumena, and allows reason a constitutive role only in the case of practical reason and then only under the direction of will which itself does not emerge from experience. Mankind’s highest striving is for virtue and moral law, which striving urges them towards noumenal being. This urging, together with judgement reaching to the supersensible through its form, the beautiful, with the sublime it engenders, leads to the infinite which in turn leads to an ultimate noumenon

of being. This deep conviction expressed by Kant is troublesome for commentators and is not pursued further.

Return to Discussion of Arendt’s Adduction of Kant

Arendt’s P(p)olis, in a kind of Heideggerian way, is a world coming out of nature made possible by work, a world at its best when there is harmony between action, work and

labour. It is a sobering thought that the Periclean P(p)olis, in or out of harmony, was

Shades of Meaning of the Terms *Poiesis* and *Theoria* Employed in the Accompanying Text⁽¹⁾

Poiesis

Plato

Expressed in Symposium 207 – 211 (Plato, 1925g; 1952u, pp. 165 - 167) *poiesis* is a kind of desire and active making for immortality through procreation, or attainment of renown and recognition through action, or the striving of the soul towards virtuous recognition of the beautiful and its attendant blessed happiness or *eudaimonia*

Taminiaux (1991, pp. 111 - 114) in interpreting Heidegger and Arendt, delineates *poiesis* as an activity involving things, and *praxis* as an activity involving the agents themselves and other people—for example *poiesis* = a craftsman in act of producing a product and *praxis* = the human being acting with others under *isonomia*, equality before the law, political *praxis* being an equivalent of *phronesis*. Taminiaux claims that “Plato more or less says that the distinction between *poiesis* and *praxis* (as it was understood by the city until then) should be abolished” (ibid., p. 113). That is, the univocity of *poiesis*, everyone doing their right job in the right way, should replace the ambiguity of *praxis* and that the highest univocity of being is Platonic *theoria* narrowly defined—*poiesis qua bios theoretikos* in act of contemplating the unchanging—which patronises *praxis qua bios politikos*.

Aristotle

Taminiaux contends (ibid., p. 114) that Aristotle rehabilitated *praxis qua bios politikos*, *qua phronesis* as the wisdom in play in the resolution of *doxa* or opinion, in human affairs, opinion not being present in theoretical wisdom’s *episteme* or in following the right rule in the *techne* of craft.

Heidegger

Heidegger returns to the Presocratics to interpret *poiesis* as bringing forth as in a bursting of a blossom (Heidegger, 2008, p. 317). For him the Presocratic *phusis* is the original coming out of concealment (di Pippo, 2000, pp. 32 - 34), an original letting itself be seen kind of idea. Heidegger considers Being, signified in his word *Dasein*, as that from “beyond Being, yet manifesting itself in an understanding of Being which permeates all our compartments” (Taminiaux, 1991, p. 115)—an extremely clever blink and quick step, might not it be said, around an always there and limiting infinite regress in ontology. In very broad comparison, Heidegger’s *Dasein* solution is not unlike the world soul solution to being and knowing of materiality discussed in the case of Plato, on pages 131 to 132 yet Heidegger’s formulation of course is situated in different terms, settings, belief structures and understandings. *Dasein* becomes for Heidegger the “ontical foundation of fundamental ontology” (ibid., p. 115) and *poiesis* is for Heidegger, one of its elements. In particular three dispositions, *poiesis*, *praxis*, *theoria* and their corresponding action or movement twins *techne*, *phronesis* and *sophia* constitute *Dasein*, understood as being in the world and of these *praxis* = *phronesis* provides the right way to *Dasein*, to being and caring in the world and a realisation of the temporal ephemerality of Being so understood. Within *Dasein poiesis* is a principle of origination, and bringing forth from concealment or leading into unconcealment, which yet does not reveal itself in the *praxis* or doing of the unconcealment. (Heidegger, 1935/1975, pp. 84 - 86). For example at the level of artisanship craft being done (*praxis*) has left the sphere of *poiesis* (ibid., pp. 58 – 58)

(This box is continued on the next page.)

itself short lived. If there is an Arendtian esoteric *Polis* in the sense of esoteric employed for enquiry purposes as earlier addressed on pages 29, 143 and 186 to 189 its cognitive domain is the realm of *doxa* and will in communication with an attendant community sense, which combination sources active public speech and deed in plurality, its method might be the revelation or coming out of self, and its constraints might be deprivation of community sense. Arendt’s gathering is a P(p)olis by virtue of its being situated in *praxis* so that an esoteric description of it *qua Polis* is problematic.

In adducing Kant to her general argument of political action as revelatory *praxis* (Norris, 1996, pp. 165 - 166), Arendt detranscendentalises him, say Beiner (2001, p. 98) and (Degryse, 2011, p. 345), by interpreting his *sensus communis* (Kant, 2000 , Sections 40 - 41; 2014, Sections 18 - 22) as a community sense rather than a common sense, an interpretation

which allows Arendt to place human judgement within a multi-spectator domain of

P(p)olis as practical action (Norris, 1996, p. 167). Within such a domain Arendt depicts judgement's informing of action a kind of coming out from community sense. Specifically, says Norris, Kant's third-critique reasoning is that judgement of beauty

Shades of Meaning of the Terms *Poiesis* and *Theoria* Employed in the Accompanying Text ⁽¹⁾ (Continued from page 166)

Theoria

For Plato

Contemplation of the unchanging, the forms.

For Aristotle

Either:

Cognitive seeing or beholding of active mind, in a wider sense of either theoretical philosophy through wisdom's contemplation of the unchanging, or in practical philosophy through practical wisdom's work of *phronesis*, and in art *poiesis* understood as the artisan mind guiding itself in accordance with the technical right rule required for good making of the product., that is all cognitive focus in search of a right rule or good irrespective of the level of the intellectual and/or lower virtue involved, but arranged in the descending order of *sophia*, *praxis* and *techné*.

Or:

In a narrow sense, only the first of these, speculative wisdom's contemplation of the unchanging isolated from the rest.

For Heidegger

Theoria and its twin Sophia are components of Dasein as explained above

Notes: (1) There are variations on the interpretations boxed here. These simplified boxed explanations are provided within this Coda discussion of pages 137 to 173, which discussion itself constitutes a brief justification for adduction of conservative readings of Plato and Aristotle for inquiry purposes. This enquiry recognises Heideggerian or Benardeteian interpretation, but it was not designed to, and does not, make such interpretations central to its purpose. Volpi, under caveat (Volpi, 1996, pp. 37-39), claims that Heidegger's "methodological disposition ... [and] questioning ... becomes more and more radical, to the point of ending up with a demand for the complete overcoming (*Überwindung*, *Verwindung*) of [the Western metaphysical tradition, *überwindung*, *verwindung* being used in the sense of complete destruction] (Volpi, p. 29, my square brackets). Vattimo (1987, pp. 7 - 17) explains Heidegger's possible different use of these words reported earlier on page xvii and Rosen (2002), Gadamer (1994), McNeil (1999), and Taminiaux (1996) and Mei (2011) all provide detailed analysis of Heidegger and explanations of his various terms.

occurs through an inherently public common-sense above a private sense, and it is this public nature of judgement idea that Arendt appropriates in order to situate judgement in that multiple spectator practical-action public domain earlier mentioned by Norris (1996, p. 167). Norris concludes that Arendt's terms, work, labour, world and the like are not Kantian categories but rather supplements to Heidegger's existentialist revisions of them and that in consequence her turn to Kant is illegitimate. Ultimately, Arendt's differentiations between politics and philosophy, public and private, and judgement and cognition remain unsubstantiated and undermine her theory of political action (ibid., p. 191). Dorstal (1984, p. 725) and Riley (1992, pp. 305-309) also question Arendt's

appropriation of Kant on the basis that his second critique (Kant, 2003) contains a better statement of Kant's political theory, if indeed he advanced one, than does his third critique.

Politics for Arendt is in the realm of *doxa qua* opinion, and political action consists of public speech and deed in a condition of plurality (Norris, 1996, p. 170). So situated she is separated from Aristotelian and Straussian political philosophy not because of a value

judgement dimension but because of her downplaying of philosophical wisdom. In the *Polis* of natural right the wise define rule through consent to sophistic reason (ibid, p. 141) while in Arendt's P(p)olis of *doxa*, rule is effected through consent to action. Judgement within *doxa qua* opinion is a revelation, a coming out (Norris, 1996, p. 173). Norris (ibid., p. 174) argues that Arendt and Strauss also disagree about the nature of totalitarianism, Strauss describing totalitarianism as an egregious form of tyranny. For Arendt totalitarianism is a rule of no one, a rule of ideology which destroys community sense and plurality which are otherwise the bases for action from *doxa*.

Honig (1988, p. 77) finds that Arendt's account of the will and its attendant concept of self are coherent and consistent across both editions of her *Life of Mind* (Arendt, 1971/1978, 1978b) and compatible with her earlier accounts of action and identity. In Arendt's exoteric P(p)olis, or world, political action is the actual freeing of oneself through discussion and action in affairs of state, a freeing of oneself from labour which leaves a sustenance-question lacuna within her definitions of labour and work. Presumably if all are free from labour, *ponein*, which Arendt defines by linking it to the drudge of agricultural production, then how is craft to be sustained without an agricultural surplus? Her metaphor meets something of a Platonic-Aristotelian wall of natural law *qua* extension of sustaining place and soul's dependence, *qua* entelechy of body, on nourished body.

In non-philosophical terms Arendt's concerns of an action P(p)olis so understood falling to an administrative and economic P(p)olis, and of humankind's consumerism of ever increasing redefinition of must-have-basics resulting in increasing demands for labour, *qua* her so-called non-productive toil, at the expense of work, her productive craft work and therefore world, brings her some distanced complementary and surface affinity with Strauss' crises in Western democracy and liberal-education concerns (L. Strauss, 1968/1989a, pp. 9 - 25; 1968/1989b, pp. 3 - 8), and Bloom's perceived societal values change concerns, for example, loss of citizen as statesman, devaluation of ideas of the common good, and arrival of the administrative state (Bloom, 1987, pp. 85, 125), yet close scrutiny might well find it a surface too shallow and distance too far. Arendt's

distinction between work and labour although etymologically clear, becomes blurred in practice.

Some differences between Arendt and Strauss are wide. There is the already mentioned question of the ranking of theoretical philosophy above practical philosophy. Next, Strauss's *Polis* appears permanent in the ideas of natural right (L. Strauss, 1999). Strauss explains natural right as an existence of immutable truth about right and wrong which extends across the ages. Natural right emerged through a discovery of nature by ancient Greeks. Arendt's esoteric *Polis*, as mentioned, and if one might be named, is a Heideggerian escape or coming out. Her exoteric P(p)olis is an escape from nature, one she could devise through engagements with Machiavelli, Nietzsche, Heidegger, and Kant, emphasising action man, *praxis qua phronesis*, above thinking man, *theoria qua sophia*, central in the political philosophy Strauss sought to rehabilitate. Also inherent in this distance between Arendt and Strauss is the different stance each takes towards historicism understood as the view that humans can only come to knowledge about right and wrong and good and desirable by virtue of historical experience. Strauss contends that historicism so understood only allows humankind to know what historical experience allows it to know, and defines it in part by an assertion that it denies human discernment of natural right (L. Strauss, 1999, pp. 31 - 32). Just as Science *per se* may provide impressive technologies yet cannot teach the right and proper use of them, so too history *per se* may document changes across the ages yet cannot distinguish between the right and wrong of them. Arendt rather considers experience, including political experience, the subjects of human thought (Arendt, 1979, p. 308; Beiner, 1990, p. 242).

Honig (1992, pp. 215 - 235) associates Arendt with post-Structuralism, Habermass (1983, pp. 171 - 188) associates her with Neoaristotelianism, and Benhabib (2003, p. 138) suggests that she is a reluctant modernist. Villa (1992, pp. 274 - 308) receives Arendt's idiosyncratic adduction of Kant favourably and suggests that Arendt is to a certain extent Nietzschean (Villa, 1992, pp. 275, 286) all be it a Nietzscheanism checked and balanced against Kant. Villa's reads Arendt's appropriation of Kant's third critique (Kant, 2014) as a strategy to contain "Nietzsche's aestheticism and its metaphysical and

epistemological commitments (the will to power and perspectivism)” (Villa, 1992, p. 276), and to “save virtuoso political action and the world of appearances from the subjectivism implicit in Nietzsche’s aestheticist anti-Platonism” (ibid., p. 291), an appropriation by which she is able to “preserve plurality and politics from the creeping subjectivism of Nietzsche’s purely agonistic model” (ibid., 288) thereby rendering Nietzsche’s aestheticisation of practical action suitable to her development of it in *The Human Condition* (Arendt, 1958/1988).

Honig claims that Villa’s comparison of “Nietzsche’s ‘excessive agonism’ with Arendt’s ‘tame’ variety of it produces misleading readings of both Nietzsche and Arendt ... in which their aestheticism is overdrawn and depoliticised” (Honig, 1993, p. 529). She indicates that Arendt allows presences other than Kantian judgement and that these, for example constitution making and amendment, promising and forgiveness, might save her agonism from subjectivism and stabilise a community space for it. Nietzsche’s own agonism is deeper and more complicated than Villa supposes, likewise Arendt’s engagement with Nietzsche. Nietzsche, says Honig, recognises ostracism as a force which might prevent the winners of an *agon* dominating it by shutting it down and that Nietzsche, like Arendt, recognises the freedom, plurality and commonality of *agon* required for “virtuosic action” (ibid., p. 530). That is to say there is another side to a “wild-eyed Nietzsche” (ibid., p. 529) that Villa depicts Arendt taming, and it is from Nietzsche’s other side so interpreted that Arendt appropriates promise-making and forgiveness to protect her *agon* and its space for meaning-directed action. Yet while Nietzsche’s promises and forgiving are promises made by an individual to a particular action, Arendt’s promises are made to political community. Honig’s suggests that Nietzsche’s subjectivism *qua* promises of oneself to an action cannot succeed outside of “agonistic institutions like Arendt’s [which Honig seems to suggest perhaps she found in part in Nietzsche anyway]” (ibid., p. 532, my square brackets) without falling into withdrawalism and that Arendt’s action in communal space, without a touch of individualism, risks sliding into mass behaviour destructive of *agon*. The risk that Nietzsche’s agonism of individual-promise to action will beget withdrawalism is not necessarily its fate and Honig concludes that Arendt’s error was to mistake risk for fate,

and that Villa's error was to repeat Arendt's—an invitingly nice and cogent conclusion which involuntarily invites recall of Alfred Marshall's perhaps unintended contradiction and truth conundrum that in economics “every short statement on a broad issue is inherently false” (Marshall, 1996, pp. 231 - 232).

I now bring this discussion of reading genres begun on page 137 to a close. The discussion has revealed a range of approaches to reading and interpreting Plato, and in some cases Aristotle, and found differing terms usage between so-called reading genres and nuance within them. A student's first dawning awareness that they are becalmed in a sea of multiple reading possibilities and everywhere contested waters may be realisation enough for them to proceed no further. So quitting may, in subsequent currents and eddies of continuing life, flow into attitude formation and quick dismissive decision-making on the part of an otherwise successful busy-world many, including academic administrators and/or politicians temporarily powerful in allocating funds for philosophy courses and other important requirements, and in family and business sector decision making about the efficacy of values education in general, or about any clarity in particular such education might bring to examination of a life, qua examined life, well lived. Yet may be, in some cases, those who proceed and jump such a hurdle—accepting that jumping it brings awareness that both ideal and practical conditions for being human are likely a most complex matter—and then go on to bring forward advances in society are on their way to being amongst the few in any one generation who make a difference in that Straussian sense.

Irrespective of the surmise in the paragraph above, awareness about variety and complexity in reading Plato is hardly confined to the twentieth and twenty-first centuries alone. For example Tarrant, in a work aiming “not to understand little known Platonic figures, but to encourage fresh, almost primitive reading of Plato himself” (Tarrant, 2000, p. vii), a work which aims at clarification of “choices available for reading Plato today” (ibid., p. 3) by examining choices available to earlier interpreters in Middle Platonic times, finds likely competitive interpretations of a true Plato across Athens, Rhodes, Smyrna and Rome. Focussing on principles of interpretation rather than on

details, but allowing that details might yet provide a key to principles, on Platonic corpus of works rather than on high profile dialogues alone, and on interpretation itself rather than on doctrine, Tarrant demonstrates intense debate about both principles and details, and finds antiquity struggling with issues of interpretation extant in the twenty-first century, for example a need to recognise dramatic aspects of dialogues, possibility of beneath-text esoteric meaning to be reconciled with literal text, inter-textual strategies for interpretation, and grouping of texts marked against such criteria as commonality of purpose or communicative purpose, whether didactic, explanatory or polemical, but less so on a basis of common subject matter or doctrine. No such complexity, then and now, should inhibit learning which should continue on, adopting new findings and approaches in its stride (ibid., p. 214).

On the basis of reading complexities discussed in this Coda, and given the design and methodology of this present enquiry, it appears that whatever reading genre is adopted to inform its method and purpose, the chosen genre would need to be defended against others. Two examples taken from the reading genres discussed above, Benardete's persuasion that Plato doubted an existence of a city of forms and/or that such a city might not constitute a basis for analysis of matters public, and Heidegger's reformulation of *praxis* as foundational ontology, are alone problematic for both enquiry architecture and aims, as indeed they may also presently be to efficacy, conduct and validity of key tenets of received Western philosophy in general. In addition, the examples chosen gain much of their own credibility or otherwise through comparison and juxtaposition with longstanding so-called received reading and interpretation traditions and on the basis of such considerations, and Tarrant's positiveness in the face of complexity, I have adopted a so-called standard and received reading persuasion as the default persuasion for enquiry purposes. Accordingly, I have used translations available in the Loeb Classical Library, the Perseus Library, Oxford University standard editions, and Jowett translations from the Great Books collection, which latter collection, ironically, an early Strauss was involved in establishing. Notwithstanding the default position adopted, ideas from scholars associated with some of the different readings genres of Plato and Aristotle outlined above are, subject to caveat and ongoing

benchmarking against the chosen readings, employed in articulation of enquiry construct. I discuss enquiry methodology in more detail in Chapter 2.

Chapter 2

Key Terms Usage and Enquiry Methodology

INTRODUCTION

In Chapter 1 discussion focussed on an early emergence of three kinds of philosophy and how, in the context of that emergence, Plato revealed a system of political philosophy in which Science as knowledge of the permanent and unchanging is the patron of an objective Ethics predicated on reasoned discerning of the unharmed from the harmful. Chapter 1 also contains discussion of a claim that Plato held mankind's work to be justice with happiness and urged an ideal or esoteric *Polis* as a city of ideas predicated on a city of objectively real forms in one only begotten heaven. The discussion of Chapter 1 progressed through ongoing articulation of meanings attributed to the enquiry's key terms Science, Ethics and *Polis* in the Introduction.

In this chapter, under the heading Thesis Methodology, I discuss key terms further by differentiating between exoteric and esoteric dimensions of those terms, by explaining how the esoteric dimension will inform key-terms usage throughout the enquiry, by explaining how esoteric key terms meaning is derived, and how it and the exoteric/esoteric dimension on which it is predicated are different from those employed in Straussian and Tübingen School of Philosophy literature. Enquiry methodology is also explained in full under this heading and a brief application of it in the case of Plato is provided by way of example.

Other aspects of esoteric terms usage and enquiry method, for example strengths and weaknesses, validity, a non-paradigm-shift interpretation of incremental nuance and/or more pronounced change, the so-called problem of the representational firm, in this enquiry the problem of which representational political philosophy or religious sect, or Science to use for general argument purposes and the like, are discussed under the heading General Matters of Method beginning on page 186. Four new terms are constructed for enquiry purposes, namely Ovid moment, Augustine moment, Goethe moment and Yahoo moment.

Completed summary tables of the enquiry's progressive interpretation of key terms nuance and its impact on Thesis Proposition Statements, namely Summary Tables 13 and 14 are included for convenience, such summary tables being an outcome of thesis methodology process. These tables, placed within the conclusion and respectively beginning on pages 192 and 196, are important tables because enquiry conclusions are subsequently partly drawn from them.

In Chapter 10, final evaluation of the veracity of the Thesis Proposition Statements is offered. The validity of the Thesis Proposition Statements rests on the soundness and robustness of the enquiry methodology which consists of measuring and tracing esoteric key terms nuance and applying that nuance in ongoing articulation of the Thesis Proposition Statements within a constructed exoteric/esoteric divide methodology. Of necessity, and irrespective of their reasoned validity within the constructed methodology, conclusions remain limited to, and bounded by, the constraints of the methodology itself. In this chapter, issues associated with mutually exclusive definitional separation of esoteric and exoteric, and epistemology from ontology, raise a question of whether or not the methodology constructed has any worth or standing at all, a defence for its construction and use, beyond a technical uniformity of approach it brings to the enquiry, being that such difficulties exist throughout philosophical enquiry, and will continue to exist there by virtue of the very nature of philosophy and its preoccupation with matter and mind, with being and knowing. To balk at further enquiry into matters of human condition because definitional borders might be fuzzy is not acceptable. Achievement of major and minor aims is also discussed in Chapter 10.

THESIS METHODOLOGY

Differentiation between Esoteric and Exoteric Meanings of Key Terms

As conjectured in Chapter 1, neither Science nor Ethics nor *Polis* emerged from a vacuum and in Plato's time each inhered within a mix of theoretical, practical, and critical philosophy, which domains of philosophical enquiry themselves, through their emergence from nature and magic, were not without cultural and social dimensions.

In the Chapter 1 esoteric case for Plato, Science is understanding and learning occasioned by beholding of forms, Ethics is discernment of the unarmful from the harmful, and *Polis* is a gathering whose final cause is a city of ideas predicated on a heavenly city of objectively real forms existing in one only begotten heaven. Even so, Plato's esotericism would find exoteric expression.

For example in respect of Ethics, Jowett (1875, p. 192) emphasises that Socrates has disappeared by the time of *Laws* (Plato, 1952j, 1967/68a) and that already in *Timaeus* (Plato, 1925h, 1952v), *Sophist* (Plato, 1921b, 1952s) and *Statesman* (Plato, 1921b, 1952t) while present, his role as chief speaker is handed to the Pythagorean Timaeus in *Timaeus* and an Eleatic Stranger in *Sophist* and *Statesman* and that perhaps, for purposes of Plato's further development of his own philosophy, he is moving the dialogical Socrates out of a role of inquirer towards a role of legislator (Jowett, 2006, p. 5). Of the three speakers in *Laws* (Plato, 1952j, 1967/68a)—they meet to discuss laws—the lion's share of answers is given by Cleinias representing Crete (*ibid.*, p. 5). Cleinias is presented as a leader of a new colony, a real legislator in a real earthly state. Benardete explains that “the Eleatic Stranger informs Cleinias that Cnossos would be the city most suited for the new legislation” (Benardete, 2000b, p. 161) yet that “the Stranger can do in speech what Cleinias can never do in deed” (*ibid.*, p. 161).

The laws and constitutions discussed in the work, and collected there, are exoteric in nature. Here is discussed a plethora of conditions of which such matters as assault by a slave *Laws* 879 (Plato, 1952j, p. 576; 1967/68b), wounding (*ibid.*, 876— - 879a, pp. 754 – 756), involuntary homicide (*ibid.*, 865a – 869e, pp. 749 - 751), dilution of product quality (*ibid.*, 917e, p. 773, the making of wills (*ibid.*, 922a - 926a, pp. 776 - 778), and freedom to transport goods to, and trade in, a market of choice (*ibid.*, 848e – 850e, pp. 741 - 742) are just some examples. These laws might be interpreted as laws for a second best state, not an ideal republic. In *The Republic* (Plato, 1952r, pp. 333, 339, 391 - 398; 1969a), where the combination of the good human in the good state is found only in the ideal city, education of the soul, whether it be of children (*ibid.*, VII 536d, p. 339) or guardians (*ibid.*, III 401b pp. 333, VII 521-534, pp. 391 - 398), is largely education

within an earthly second best state, and it is predicated on the contributions those so educated might make in the interests of an ideal state. Music, mathematics, astronomy, and gymnastics, among others, are included, and some poetry, although aspects of Homer are discouraged. Censorship is allowed. This search for a special kind of education begins with discussion of earlier existing educational practice (ibid., VII, 521c – 522c, p. 391).

In general, social capital peripheral to, but essential for, the function of the city can be found in the form of laws, constitutions, courts and court procedures, and in the actual political behaviour parodied by Aristophanes (1952a, 1952b, 1952c) in *Birds*, *Knights*, *Frogs* and *Wasps*. Viewed *a posteriori* these exoteric realities constitute partial proof of an esoteric and cognitive dimension of Ethics which for Plato, as revealed, is Ethics as an act of discerning the unharmed in the interests of happiness with justice. There is no suggestion that Ethics so described would necessarily be found in court procedures of Plato's day, just as today it is not necessarily so that humans might find the notions they hold about Ethics and morality in the machinations of court justice.

In the case of theoretical philosophy, outlined in Table 2 on page 25 Science, viewed *a posteriori*, also has its exoteric associate. For example, while commentators both recent and ancient allude to a scarceness of experimental proof, to rash decision making and/or reliance on poets (Guthrie, 1975a, p. 63) “and fabulists offering[s of] ... tainted witnesses to disputed facts” (Heraclitus cited in Polybius, 1889, p. 315), to unfounded speculation overriding clinical experience (Hippocratic Writings, 1983a; 1983b, p. 154 - 160; G. E. R. Lloyd, 1983, p. 1), and to importance of experience and observation in medicine (Hippocratic Writings, 1952b, pp. 9 - 19), the origins of Science as it is known today by virtue of its exoteric tangibles—its experiments, products, demonstrations and explanations—is discernible in Presocratic writers and Plato. Table 10, assembled from Presocratic fragments, from references to the Presocratic thinkers found in Plato and Aristotle, from references to Plato found in Aristotle and from references found in selected doxographers, exemplifies a claim made in the previous sentence that applied or experimental Science, exoteric Science, existed in Presocratic times.

Furthermore, Euclid's *Elements* (1952) was in the making and although in its very nature it is esoteric, it subsequently manifests exoterically in an applied form. These writings, the *Elements*, became available circa BC 300 (T. L. Heath, 1952, p. ix) and centuries later were used to measure heights of objects, to inform Newton in the proofs of his *Principia Mathematica* (Newton, 1952a, pp. 72-75, *passim*) and for that matter some students studying and applying geometry today. Hippocrates and his colleagues were also writing systematically about disease and its treatment and the Hippocratic collection which has come down to us from Alexandria, where the works were posthumously assembled (Hippocratic Writings, 1952a), can be read as a present-day operations manual and/or medical text might be read. These works were written circa BC 430-330 (G. E. R. Lloyd, 1983, p. 9).

The examples contained in Table 10 may be taken as exoteric manifestations of Science. Just as the respective exoteric examples provided earlier to help articulate the case for ethical thinking, existences such as laws and courts and the like, so the Table 10 examples partly help document and articulate the case for exoteric Science in Presocratic and Socratic times.

In exoteric form, gathering *qua* P(p)olis consists of, *inter alia*, state laws and constitutions serving heterogeneous cultures in possession of such skills as bread and wine making, animal husbandry, irrigation, weaving, leatherwork, sculpture clothes making, metallurgy, an arithmetic that had become mathematics, geometry, map making, blacksmithing, carpentry, stone cutting and assembling, astronomy, clinical and diagnostic medicine, military Science and many other skills competencies; the bricks and mortar and public places of the built environment; and of course the citizens and their wives, children and slaves, not all of these latter classes having citizenship voting rights.

Jowett, in translating *The Republic* 327 (Plato, 1952r, p. 295; 1969a), catches something of the collective sense of the exoteric P(p)olis I have described in this paragraph by

Table 10: Manifestations of Scientific Thinking to the Time of Plato

Revealed Scientific Activity and/or Scientific Discipline	Source
Thales	
Awareness that water is life.	<i>Metaphysics</i> I 983b29 – 984a5 (Aristotle, 1952d, pp. 501 - 502; 1989)
Speculation about the nature of magnets based on observation of their properties and use of these observed properties in explanation of other things.	<i>On the Soul</i> I 2 405a20 (Aristotle, 1952b, p. 634; 1957a)
Elements of meteorology and geology wherein, in discussion of his monad, water, he allows what is now called change of state.	Hypp. Dox. 555, pp. 4-5
Speculative thinking about the void or nothingness: a possible pre-runner to the vacuum.	Aet. <i>Plac.</i> 1.2; Dox. 275, p. 5
The moon reflects the sun's light and is eclipsed by the earth's shadow.	Aet ii 1; Dox. 327, pp. 6 - 7
Crude geography: The Nile backs up because winds cause sea to swell up at the mouth.	Aet iv 1; 384, p. 7
Anaximander	
Ideas of separation and mixture to explain coming to be and ceasing to be.	<i>Physics</i> I 4 187a10 - 187 5 (Aristotle, 1952n, p. 262; 1984c)
Explains earthquakes as a function of the physical elements after the fashion of what is now called geology and geography rather than say as retribution of the gods. Empedokles and Anaxagoras also get a mention.	<i>Meteorology</i> II 7 365a10 - 365b20 (Aristotle, 1952e; 1952f, p. 470)
Herakleitos (Heraclitus)	
Herakleitos cautions as to the witness of poets and rash conjecture about the greatest things.	Heraclitus DK 22B47, Polybius, <i>Historia</i> iv 40, (p. 37)
Herakleitos names Pythagoras an investigator.	Diogenes Laertius <i>Lives</i> viii 6 (p. 29)
Herakleitos and Demokritos (Democritus) name Thales as an astronomer who predicts eclipses.	DK22B38, DK11A5, (Fairbanks, 1898, p. 33)
Wry scientific reasoning that if all things should become smoke then perception should be by the nostrils.	<i>On Sense and the Sensible</i> 5 443a21 (Aristotle, 1952k, p. 681; 1957b)
A mixture separates when not stirred.	DK22B125, (Fairbanks, 1898, p. 45)
Herakleitos names a generation, that is, attainment of grandfather status, to be 30 years.	Plutarch, de Orac. def. 11, p. 415, (Fairbanks, 1898, p. 45)
Herakleitos holds a position not unlike that held by post-moderns: reason is common but most individuals live as "though they had an understanding peculiar to themselves." (Fairbanks, 1898, p. 47)	DK22B2, (<i>Against the Mathematicians</i> vii. 133 Sextus Empiricus, Bury 7.133.4).
Early statement questioning the wisdom of utility maximisation in what later became germane to the so-called pleasure pain calculus of Bentham which informs much of rational economics and psychopathy in Post-Modern times.	<i>Anthology</i> iii. 83 Stobaeus. (p. 49)
Passion has its way at the cost of the soul.	<i>Nicomachean Ethics</i> II 3 1105a8 (Aristotle, 1934; 1952g, p. 350)
God is to man as man is to ape.	<i>Hippias Major</i> (Plato, 1925b; Plato or Pseudo Plato, 1851, pp. 227 - 228)
Xenophanes	
States that if cattle had hands to paint they would paint gods in their own image.	DK21B15, (Fairbanks, 1898, p. 67)
A crude 'web of life cycle' from sea to winds to clouds to rain and rivers.	DK 21B30
By searching men better find out the secrets only partly revealed by the gods.	Stobaeus <i>Anthology</i> xxix. 41 (p. 71)
Parmenides	
A paraphrase of the big questions about being and non being that have preoccupied the minds ever since and a statement of challenge questions for Aristotle. The idea that thought is predicated on being.	DK 28B1-7,8
Zeno	
Zeno's discussion on the flight of the arrow reveals thoughts by Zeno germane to what later became the domain of relativity theory.	Simp. <i>Phys</i> 236 v; (p. 116)
Moon's reflected light.	DK28B14 – 15, (Fairbanks, 1898, p. 101; Freeman, 1948, p. 45)
Empedokles (Empedocles)	
The doctrine that nothing comes from nothing.	<i>On Melissus, Xenophanes and Gorgias</i> 2; 975a36 (Aristotle or another, 1936/2015, 1984a)
Basic anatomy: recognition that liver is well supplied with blood.	Fairbanks (p. 189)
Empedocles provides a crude explanation of atmospheric pressure and breathing. Democritus also gets a mention nearby.	<i>On Breathing</i> 473b9 (Aristotle, 1952h, p. 719; 2000)

Table 10 (continuing first with Empedokles)

Revealed Scientific Activity and/or Scientific Discipline	Source
Empedokles's provides a crude scientific explanation of vision and the senses. <i>On Generation and Corruption</i> I 8 325b26 - 325a (Aristotle, 1952i, p. 423; 2007)	
Empedokles asserts that light travels from the sun through the intervening space.	<i>On Sense and the Sensible</i> 446a25 – 446b (Aristotle, 1952k, p. 684)
Empedokles asserts that sex is mixed in plants.	(Fairbanks, 1898, p. 220)
Empedokles explains wine taste as a function of soil type.	<i>Aet. Plac.</i> v 26; 438, p. 229
Anaxagoras	
Mind exists alone.	DK 59B12
Scientific idea of the mixture used to explain coming into being and ceasing to be.	<i>Simpl. Phys.</i> 34 v 163, (p. 245)
Explanation that the void does not exist based on observations of experiments in which skins are inflated “up tight” and air is trapped in clepsydrae: air consists of something.	<i>Physics</i> IV 6 213a15 - 213b3 (Aristotle, 1936b; 1952n, pp. 292-393; 1984a)
The Pythagoreans in General	
The Pythagorean postulate of a fire (sun?) centred cosmology in which the earth's movement about the fire produces night and day.	<i>On the Heavens</i> II 13 293a15-25 (Aristotle, 1952m, p. 384; 1984a).
The Pythagoreans associated the rainbow with the sun's rays.	<i>Aet. Plac.</i> III; Dox. 364, pp. 148 - 149
Pythagorean attempts at inter-disciplinary studies: for example astronomy with geometry and music: Pythagorean opinion that the evening and morning stars are the same star.	<i>Hippol. Phil.</i> 2; Dox 555, p. 151 Dox 476, p. 151
The Pythagorean monad for the <i>physis</i> involves an application of number and mathematics to physical existence.	<i>On the Heavens</i> 303a5 - 303a10, (Aristotle, 1952m, p. 394; 1984a) <i>Metaphysics</i> I 985b20 - 986a20 (Aristotle, 1952d, pp. 503 - 504; 1989)
Geometry defines the cosmos.	<i>Metaphysics</i> I 985b25 (Aristotle, 1952d, p. 503; 1989)
All of nature consists of numbers.	<i>On the Heavens</i> III 300a14, I 268a10-a 14 (Aristotle, 1952m, pp. 391, 359; 1984a); <i>Physics</i> III 203a - 203b (Aristotle, 1936b; 1952n, pp. 280 - 281)
Plato	
Plato uses the idea of watertightness to explain the manner in which the desires of the intemperate and uninitiated are akin to holes in a vessel, the vessel being the human body which imprisons the soul.	<i>Gorgias</i> 493 (Plato, 1952g; 1967b, p. 276)
A discussion of reflection in mirrors, then shiny bronze surfaces, wherein a now superseded explanation of inversion, convexity and other such optical phenomena betrays the practical experimental that informs it. Earth-centred universe.	<i>Timaeus</i> 46 – 47 (Plato, 1925h; 1952w, pp. 454-455) <i>The Myth of Er in The Republic</i> 614 onwards (Plato, 1952r, pp. 437 – 441; 1988)
Notes (1): For ease of access page numbers supplied for the fragments and doxographers refer to the collection in Fairbanks (1898) which is more readily available in English. (2) The following abbreviations apply: Dox. = Diels, <i>Doxographi Graeci</i> , Berlin 1879; <i>Aet.</i> = <i>Actii de placitis reliquiae</i> included in the Diels Dox.; <i>Hipp. Phil.</i> = <i>Hippolyti philosophumena</i> included in Diels Dox.; <i>Epi</i> = <i>Epiphanius varia excerpta</i> included in Diels Dox.; <i>Herm.</i> = <i>Hermiae irrisio gentium philosophorum</i> included in Diels Dox.; <i>Sim. Phys.</i> = <i>Simplicii in Aristotelis physicorum libros quattuor priores</i> edidit H. Diels, Berlin 1882; <i>Simp. Cael.</i> = <i>Simplicius, Commentary on Aristotle's De caelo</i> .	
Source: Constructed by Ian Eddington from Aristotle. (1952). <i>Metaphysics</i> . (pp. 495-626). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . (Vol. 8), Chicago: William Benton; Aristotle. (1952). <i>On the Heavens</i> . (pp. 357 - 406). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . (Vol. 8). Chicago: William Benton; Aristotle. (1952). <i>Physics</i> . (pp. 259 - 359). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . (Vol. 8). Chicago: William Benton; Aristotle. (1952). <i>Meteorology</i> . (pp. 445 - 494). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . (Vol. 8). Chicago: William Benton; Aristotle. (1952). <i>On Generation and Corruption</i> . (pp. 407 – 441). In R. M. Hutchins (Ed.) <i>Aristotle II</i> . (Vol. 9). Chicago: William Benton; Aristotle. (1952). <i>On Sense and the Sensible</i> . (pp. 671 – 689). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . (Vol. 8). Chicago: William Benton; Plato. (1952). <i>Gorgias</i> . (pp. 252 - 294). In <i>Plato</i> . (Vol. 7). Chicago: William Benton; Plato. (1952). <i>Timaeus</i> . (pp. 442 - 447). In R. M. Hutchins (Ed.), <i>Plato</i> . (Vol. 7). Chicago: William Benton; Plato. (1851). <i>Hippias Major</i> . London: Henry G Bohm Covent Garden; Fairbanks, A. (1898). <i>The First Philosophers of Greece</i> . New York: Charles Scribner's Sons; Plato. (1952) <i>Republic</i> . (pp.295 – 441). In R. M. Hutchins (Ed.), <i>Plato</i> . Chicago: William Benton; Plato. (1952) <i>Timaeus</i> . (pp. 442 - 4470). In R. M. Hutchins (Ed.), <i>Plato</i> . Chicago: William Benton.	

interpreting the Greek *ἄστυ*, as city in English, city *qua* a bricks and mortar and institutions existence like the Piraeus towards which the discussants were walking.

Many of those practical Science skills outlined in the previous paragraph are also discernible in descriptions of a mythical Atlantis Plato provides in *Timaeus* 25a – 26a (Plato, 1925h; 1952w, p. 446) and *Critias* 114c – 117e (Plato, 1925a; 1952d, pp. 481 - 483), and archaeological evidence from such cities as Pergamum, Syracuse, Memphis, and yet earlier ones like Byblos, Tyre, and Sidon already abandoned and resettled, speaks for itself. Such was the extent of skills development in which Plato raised his esoteric notions of Science, Ethics and *Polis* when Athena, clad in ivory and gold, stood resplendent in a newly rebuilt Parthenon.

While these exoteric dimension tangibles identified in preceding tables and paragraphs are necessary for understandings of the key terms Science, Ethics, and *Polis*, they are insufficient as prime criteria because they do not convey a full understanding of the meanings attributed to these key terms for enquiry purposes. Rather, these exoteric referents serve as anchoring buoys for an esoteric key terms usage employed in this enquiry. Esoteric dimension usage is chosen because of a greater challenge it presents, deeper and different kind of thought it requires and so that enquiry methodology might be one predicated on, and robustly encompassing of, a kind of so-called geography of the mind enquiry prevalent during the time span covered by the enquiry. It is not as though geography of mind considerations are no longer relevant. Researchers, in spite of sophisticated technology available, continue to confront possibilities that faculties of mind which process reason, imagination, emotion, are not necessarily mutually exclusive, and nor might it yet be possible to confidently partition the physical brain, the grey matter, on a basis of function other than through acceptance of fuzzy boarder division (Oscar-Berman, 2004, pp. 159 - 160).

This question of interconnectedness became better understood, if not more greatly clarified, over the eons.

For when we say, the will is the commanding and superior faculty of the soul ... yet I suspect, I say, that this way of speaking of faculties has misled many into a confused notion of so many distinct agents in us, which had their several provinces and authorities, and did command, obey, and perform several actions, as so many distinct beings; which has been no small occasion of wrangling, obscurity, and uncertainty in questions relating to them (Locke, 1912, p. 132).

Later, in the twentieth century, William James acknowledged how difficult it is for all of us but to store all sense perceptions of things in one place, after once, as babies, having experienced the “one great blooming buzzing confusion” (James, 1910, p. 16) assault by the senses brings. Many questions about geography of mind appear to remain unanswered and in the twenty-first century Damasio (1995, p. 258; 2010, pp. 5 - 6) suggests, in the face of neuroscientific definitional compartmentalisation of the brain, that it is very difficult, to say the least, to know how brain makes mind. An overview of his hypothesis of how self comes to brain making mind is subsequently provided on page 619 of this enquiry.

How Esoteric Key Terms Meaning and Nuance is Captured for Enquiry Purposes?

As discussed earlier on pages 9 to 13 an esoteric meaning of each of the key terms Science, Ethics and *Polis* is captured through discerned differences in answers to chapeau questions respectively asked of three esoteric key terms referents—method, domain of operations and constraints. These referents are again exhibited in the dimension referents row of Table 11 on page 183 which table, in spite of its different layout, is largely a reproduction of the text box content on page 12 except (a) that the aqua shaded generic answer template examples Table 11 contains are slightly more tailored to the respective key term being chapeau questioned, and (b) that notes (2) and (3) to the table reveal a kind of invisible enigma or flaw in the methodology itself. The enigma or flaw is itself part of a more general perplexity and knowing-being divide problem addressed, but not necessarily resolved, by such scholars as Plato (BC c. 427 – c. 347), Aristotle (BC 384 – 322), Descartes (AD 1596 – 1650), Berkeley (AD 1685 – 1753) and Heidegger (AD 1889 – 1976). The chapeau questions call forth answers corralled by referent marker vectors and when these answers are known for each key

term an esoteric understanding of the key term is known, discerned difference in

Table 11: Tabular Illustration of a Process by which Chapeau Questions are Applied to Esoteric Key Terms Referents in Discerning Esoteric Terms Meanings

Chapeau Questions ⁽¹⁾ (CQ) by Esoteric Referent (R)		Esoteric Key Terms Meaning ⁽²⁾ (Generic Form of Answers to Chapeau Questioning of Esoteric Key Terms Referents) ⁽³⁾⁽⁴⁾		
CQ	R	Science	Ethics	<i>Polis</i>
How do I come to know?	Method	By that method or process through which I come to know truth.	By that method or process through which I come to recognise, and inhere in, the good.	By that method or process which enables receipt of that shared belief and understanding which binds humans in cognitive gathering.
What do I come to know?(2)	Operations	Varies kinds of knowledge and understanding about the nature of scientific knowledge, about the-that-which-can-be-no-other.	Various kinds of knowledge and understandings about the nature of the good, about what it might mean to be ethical and about which faculties and conditions of mind might inform attempts to be ethical.	Aspects of political philosophy on which <i>Polis</i> as an expression of gathering is itself predicated.
What states and conditions of mind limit my knowing?	Constraints	Aspects of human condition, human mind and cognitive procedural method in Science that might limit access to, and understanding of, scientific method and its knowledge and operations.	Aspects of human condition and mind and cognitive procedural method in Ethics that might thwart understanding and attainment of ethical condition and its operations.	Aspects of human condition and mind that may constrain <i>Polis</i> method and preclude participation in <i>Polis</i> and its operations.

Notes: (1) An important qualification must accompany the chapeau-question process for Ethics method. As the enquiry progresses Ethics is early on and then repeatedly found not to exist until knowing, through active thought, is transformed into a condition of being *qua* doing or action. Thoughts *per se* are neutral and Ethics might “exist” only when thoughts are actioned. Early on, Ethics is as much a question of ontology on the side of the exoteric as it is of epistemology on the side of the esoteric—notwithstanding, as explained, that the other key terms also have their exoteric dimensions. It, Ethics, is a kind of active state of knowledge. This particular caveat acknowledges a general enigmatic problem inherent in the methodology as it has been constructed and of the human condition in general. Yet, were the methodology somehow constructed on chapeau questions primarily predicated on ontology rather than epistemology, it very likely would not have survived the distance of the enquiry, and its efficacy might soon have been exhausted. Nevertheless, some kind of visible working methodology, warts and all or not, is necessary if the planned enquiry is to proceed. (2) Long since before Descartes, there has been appreciation of a view that to think is to be *Nicomachean Ethics* 1170a25 – 1175b (Aristotle, 1934; 1952g, p. 424), that is, a recognition that being and knowing are closely related. Nevertheless all chapeau questions are framed as epistemology rather than ontology. (3) Part of the enquiry methodology involves depicting esoteric key enquiry terms as consisting of three referents or esoteric dimension vectors. Progressive chapter by chapter derivation of specific versions of the generic aqua shaded answers—such answers result from application of the olive green chapeau questions—allows slight difference to be detected and esoteric key terms nuance to be discerned and is the basis on which the series of key terms nuance tables is assembled. Thus for example, in respect of Plato say, esoteric Science is partaking of the forms and occasioning of learning through reminiscence (its method), informed by knowledge of the good, beautiful, eternal and unchanging (its domain of operations), subject to mankind’s flawed divinity (its constraint). See also page 609. (4) The slight difference in wording of aqua shaded generic answer forms between this table and chapeau question method overview box on page 183 is intentionally provided to facilitate clarity of matching between each chapeau question, referent and key term across the rows of this table. Key term meaning, when it is measured in specific cases, emerges from reading down the columns.

meaning between progressive chapeau-question measurements of those terms being the enquiry’s surrogate measure of nuance.

Enquiry Usage of an Exoteric/Esoteric Divide

Enquiry usage of the terms exoteric and esoteric is different from that employed in Straussian and Tübingen School literature and the accompanying dialogue box on page 184 outlines these differing meanings usages.

Explanation of Enquiry Methodology

Apart from the process by which esoteric key terms meanings are discerned, that is by

Straussian, Tübingen School and Enquiry Usage of the Terms Esoteric and Exoteric

Straussian

Esoteric: a persecution and art of writing idea that ancient writings may be appreciated at a second level of understanding hidden beneath literal meaning of written words but detectable through clues found in associated dimensions, for example speaker order, attribution of key ideas to speakers, portraying speakers as representatives of specific causes, location and setting, metaphor and image trope and the like.

Exoteric: meaning discerned on the face of the words themselves.

Tübingen School

Esoteric: a conviction that primary principles of being and emergence of the ideas were revealed by Plato in a lecture or course of lectures on the good and may be discerned between the lines of his writings and the comments of others so that it is possible to exhume unwritten Platonic doctrines and apply them in interpretation of the dialogues. Plato's unrecorded lectures are claimed to have extended the discussion on the good found in *Republic* VI 504e – 509c (Plato, 1952r, pp. 384 - 386; 1969a).

Exoteric: acceptance that Plato's doctrines are available in the lines of the dialogues, not between them, exoteric writings being for those outside the school and esoteric or unwritten but spoken doctrines, for those within the school.

Usage in this Enquiry

Esoteric: of ideas as opposed to materiality, thus Plato's city of ideas is esoteric and Pericles' beautiful Athens is exoteric. Likewise Plato's Science *qua* soul's beholding of forms is esoteric while his own reliance on watertightness to explain the soul's imprisonment is, like say Anaximander's explanation of earthquakes in terms of physical elements rather than in terms of gods, exoteric. An esoteric Rousseau *qua* educator of youth might inhere in his artistic creation of *Émile*. An exoteric Rousseau *qua* educator of a youth might reveal itself in his depositing children in an orphanage or poorhouse say. An exoteric Rousseau may too reveal itself in a French education system partly informed by that work *Emile* (Rousseau, 1918) years after books of that name were burnt.

Exoteric: actual as sensed rather than ideal as thought about, the making or doing of, rather than the thinking of alone.

Mutual exclusivity dimensions of enquiry methodology's employment of an esoteric/exoteric divide are discussed on pages 186 to 189.

the chapeau questioning of esoteric referents explained in the penultimate paragraph, enquiry methodology consists of three more components, viz: (a) capture of key terms nuance by reiterative progressive chapeau-question tracing of esoteric key terms meaning, chapter by chapter, nuance as earlier mentioned, being surrogately measured through discerned differences in progressively measured key terms meaning; (b) progressive interpretation of Thesis Proposition Statements through application of that captured key terms nuance—enquiry key terms being also key terms in the Thesis Proposition Statements—and (c) exhaustion or breakdown of the exoteric/esoteric divide convention under

methodology processes (a) and (b) and use of it, that breakdown of the exoteric/esoteric divide convention, as a marker of change so different as to suggest an emerging new era. Progressive tracing of esoteric key terms nuance through the chapeau question process, when that nuance is subsequently carried to progressive interpretation of Thesis Proposition Statements, allows that interpretation to proceed in a logical and consistent manner within, and not fatal to integrity of, foundational attributions of esoteric key

Thesis Proposition Statements

(1) Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of *Polis* situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of *Polis* is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.

(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

terms meaning and hierarchy explained in the Introduction. So constructed, the methodology might deflect have-your-cake-and-eat-it arrows launched against it. As earlier explained, while the enquiry conjectures an emerging new era, it does not proceed further in analysis of morphing or otherwise of the discerned change into what has

subsequently been called a modern age.

Example: Brief Application of Enquiry Methodology in Plato’s Case

Table 12 on page 186 illustrates the esoteric meanings outcomes when chapeau questioning of esoteric key terms referents is applied to the content of Chapter 1’s discussion of Plato. Science, informed by knowledge of the good, beautiful, eternal and unchanging subject to mankind’s flawed divinity, occasions learning through reminiscence of its partaking of the forms. Plato’s Ethics which reveals *nous* discerning between harmful and unarmful pleasure informed by knowledge of *taxis* and *cosmos* of *Polis* which itself binds cognitive human gathering, is knowledge of the beneficial and that which never harms and which resides in obedience to the law, justice and self-control, under constraint of recalcitrant desire and will. These meanings are constructed from the specific answers given in Table12 which answers are specific versions of the generic templates given in Table 11.

Polis is a gathering predicated on acceptance of objectively real forms in one only begotten heaven, a gathering informed by idealised classical Greek virtues subject to constraints of flawed divinity, a constraint so powerful that an esoteric *Polis* so constituted may never materialise on earth.

In the next and subsequent chapters, and starting with Aristotle, this enquiry progresses through iterative measurement and application of key terms nuance to Thesis Proposition Statements. Page 609 provides an overview table.

Table 12: Tabular Example of Measurement of Esoteric Key Terms Meaning for the Case of Plato

Chapeau Questions by Esoteric Referent by Key Terms			Esoteric Key Term Meaning (Answers Derived from Chapeau Questioning of Key Terms Referents)	
Chapeau Questions	How do I come to know?	Meth.	Science By partaking of the forms and occasioning of learning through reminiscence.	
	What do I come to know?	Ops.		Knowledge of the good, beautiful, eternal and unchanging.
	What states and conditions of mind limit my knowing?	Cons.		Mankind's flawed divinity.
	How do I come to know?	Meth.	Ethics Through <i>nous</i> discerning between harmful and unarmful pleasure.	
	What do I come to know?	Ops.		Knowledge of <i>taxis</i> and <i>cosmos</i> of the <i>Polis</i> , knowledge of the beneficial and that which never harms and which resides in obedience to the law, justice and self-control.
	What states and conditions of mind limit my knowing?	Cons.		Recalcitrant desire and will.
	How do I come to know?	Meth.	Polis Through idealistic cognitive gathering in a republic of ideas predicated on acceptance of objectively real forms in one only begotten heaven.	
	What do I come to know?	Ops.		Cognitive existence of <i>Polis</i> as an expression and explanation of a political philosophy on which the gathering itself is predicated, in Plato's time, a city of ideas a predicated on idealised classic Greek virtues and final knowledge of objective forms.
	What states and conditions of mind limit my knowing?	Cons.		Ideality itself of <i>Polis</i> itself together with mankind's cognitively flawed divinity.
Notes: Meth. = method, Ops. = domain of operations and Cons. = constraints.				

General Matters of Method

The exoteric/esoteric divide employed within enquiry methodology is not without its own problems, attendant epistemological/ontological enigma and have-your-cake-and-eat-it issues having already been addressed. For example if it is accepted that humans may not imagine anything which is otherwise than a product of objects and/or emotions previously experienced—on this line even imagined existence of a heaven is predicated on something experienced, for example angels consisting of body, limbs and wings in turn existing in tangible forms on birds and insects—then the esoteric/exoteric

differentiation can hardly be a differentiation into mutually exclusive categories. It is difficult to know how one set, the imagined or esoteric may be present in the absence of mutually shared information with the other, the somatic markers of experienced real objects and/or felt emotions generated in situations when human values are confronted, even arguably in the case of pure mathematics. For example Heidegger's reading of being *qua Dasein*, as something from beyond being which expresses itself in an understanding of being, and of *poiesis* within *Dasein* as a principle of origination, and bringing forth from concealment or leading into unconcealment, which yet does not reveal itself in the work or doing of the unconcealment (Heidegger, 1950/2002, pp. 41, 47 - 48) does not for me clarify esoteric/exoteric divide. This issue of mutual exclusivity of categories of mind and/or mind directing action has been ever thus a problem of exegesis based on mind enquiring into mind and continues to this day in psychopathy and neuroscience as subsequently cited in later chapters. Nevertheless this issue of mind and mind-body, that is, this issue of esoteric and exoteric as intersecting or merged domain sets, rather than non-intersecting sets, is harnessed as a key factor of enquiry methodology. In particular, perceived relatively quickening change in political philosophy as a harbinger of an emerging new era is marked by key terms nuance's exhaustion of exoteric/esoteric divide methodology.

For example, in respect of the key term *Polis* as esoteric gathering in *The Republic* (Plato, 1952r, 1969a), the esoteric city of ideas domain set is likely the more dominant set and likely has the greater part of its intersection with the P(p)olis exoteric domain set. By the time of Plato's wish list of gathering exoteric laws and artefacts in *Laws* 711e - 712a (Plato, 1952j, p. 680; 1967/68b), the esoteric city of ideas probably still retains the greater of the intersecting esoteric and exoteric domain sets, the city of practical laws being likely the lesser of the two, but still in encroachment of the esoteric, such encroachment appearing incrementally marginal in key terms nuance until Bacon's time. However in *New Atlantis* (F. Bacon, 1952a), Bensalem *qua* P(p)olis or exoteric city *qua* gathering of applied Science, manufacturing, building and trade appears ascendant in comparison to *Polis qua* esoteric gathering predicated on goodliness, peace and prosperity *per se*. This arrival, in one short book, of P(p)olis as possibly the dominant of

the two intersecting content sets is interpreted as a quickening ascendant encroachment of P(p)olis on *Polis*. Such exhaustion of exoteric key terms usage also occurs for Science and Ethics at this time and as earlier mentioned this coincidence is the enquiry marker of emergence of a new era. Nevertheless the methodology is troublesome and use of set theory language in this paragraph serves only to bring imagery to explanation and implies no strict application of the mathematical rules governing it.

Interpretation such as that in the last paragraph of an emerging new era, and for that matter interpretations of traced nuance and so-called falls of one representational political philosophy to another, are not paradigm-shift-interpretations. So, for example, ascendance of Christian faith Ethics over Aristotelian rational Ethics when described as a fall of rational Ethics to faith Ethics does not signal a disappearance or non-utility of rational ethics. The process is one of independent coequality with gradual merging and unification, not annihilation of one so-called paradigm by another, complete only when stalwart adherents to the displaced paradigm die out. The interpretation is thus not Kuhnian but rather Tolstoyan in that they who introduce new ideas and causes may likely lose control of them and be swept along with changes which follow, even to an extent of witnessing usage of those ideas in ways anathematic to their own carefully conceived and formulated intentions for them. On this adopted logic it follows within this enquiry that when change, whether interpreted favourably or unfavourably, is associated with ideas found in particular writers, no blame is attributed to those writers. Bases for blame there may or may not reasonably be but blame is outside of the principal focus of the enquiry and even in raw close to the bone moments there is no step, overt or covert, to attributing blame to particular writers.

A strength of the esoteric/exoteric divide methodology is that it is sufficiently flexible to accommodate tracking of key terms nuance over a long period, all be it a careful tracking as though it were performed on thin ice. Weaknesses include singularity and narrowness of the three-vector measure of esotericism which partly informs the exoteric/exoteric divide exhaustion criterion or marker of era change, and its consequential limitation of boundaries within which enquiry findings might be

predicated, interpreted or applied. Of course it hardly needs saying that judgement about which of the two domains, that is the esoteric or the exoteric, is at any particular time the greater, and how judged so, is subjective, reasoned subjectivity without intended dogmatism or bias being the currency of the enquiry. Yet when terms are defined, humans are capable of analysing construct in ordinal rankings of those terms based on categories such as greater or lesser applied to them. The general problem of defining word meaning in terms of other words is ever present and long ago acknowledged, this issue being recognized from the beginning and throughout the enquiry.

Finally under this General Matters of Method section, just as the term P(p)olis, was earlier derived from *Polis*, to mark exoteric gathering, other terms, Ovid-moment, Augustine-moment, Goethe-moment, and Yahoo-moment are derived to help identify possible esoteric states of human condition coeval with exoteric acts of transgression, an area of esoteric human condition relatively neglected in enquiry about Ethics and human being. These terms are developed to mark, but not explain, conditions of mind conjoint with exoteric acts of transgression, conditions of some kind of knowing accompanying some kind of doing *qua* state of being, and whatever these conditions of mind may be, and how measured, there is no escaping that as terms they take their meanings, including intensity of meaning and evoked feelings, from values interpretation of the acts of transgression themselves. These terms are not used until Chapter 8.

In respect of the preceding paragraph's claim about neglected areas of Ethics and being, it might be plausibly suggested that in those big impressive and long received contributions in Ethics, for example dialogues by Plato, contributions by Aristotle, scriptures of major Western religions, and scholastic constructions by the likes of Aquinas, general prohibitions of certain acts, along with specific taboos appear to be stated and/or discussed, assurances of rewards for conformity with those prohibitions provided, categories of rational and spiritual mind identified, procedures of mind aimed at assisting humans to conduct themselves ethically in accordance with those general prohibitions and specific taboos advocated, and ritual process and procedure mandated to help those procedures and processes of mind prevent or deter unethical act. In one

sense these measures are preventative exoteric-domain or before-act-of-transgression devices, something like a preventive medicine, their object being maintenance of esoteric vision of ethical being. But once humans step outside of such citadels of exoteric prevention, that is step into acts of transgression, esoteric vision of ethic ideal is devalued or may even collapse. Generally exoteric prescriptions of what may or may not be done in such situations are available. One may, after transgression, desist from further acts—don't smoke, don't look, don't steal—until or in spite of temptation's return, or during transgression itself stop smoking or looking or begin replacing stolen goods. One may also, after transgression enter a state of resolve, or prayer for forgiveness and repentance and/or a mental state of awareness in respect of actions allowed others against them, for example, forgiveness or ugly eyes-for-eyes or life-for-spoiled-honour obscenities, practical helps being available through various rehabilitation programmes and/or aiding and abetting criminality according as the case may be, depending on values held. Generally though, discussion of various states of collapse of esoteric ideals coincident with acts of transgression outside those preventive medicine citadels of morals are harder to find and to help remedy this perceived lacuna for enquiry purposes, four states of fallen esoteric moral vision are constructed for enquiry use.

Thus when stepping out of such preventive citadels, stepping out understood esoterically as moments of mind during moments of acts of transgression, humans are, for esoteric meanings purposes, depicted in terms of four conditions of momentary knowing arbitrarily conjectured for enquiry purposes: (a) Ovid or *video-sequor* moment—"I see and approve of the better but follow the worse solution" *Metamorphoses* VII, 20 - 30 or VII 25 - 30 (Ovid, 1826, p. 159; 2008, p. 144), (b) Augustine-moment—God give me the strength but not just yet, (c) Goethe-moment—"I see no fault committed which I could not have committed myself" (Goethe, 1906, p. 86) more often found in redacted forms such as "There is no crime of which I do not deem myself capable" (Kardener & Kardener, 2010, p. 145; Reik, 1945, p. 45), and popularly stated as there is no crime so terrible and repulsive that I would not commit it, or (d) Yahoo-moment—that unfortunate condition of humanity (Swift, 1800, pp. 54, 290, 295 - 297) detected present from Plato's shadow boxer mentality *The Republic* IX 586a - 586c (Plato, 1952r, p. 424;

1969a) to mentality of Nietzsche's "most contemptible thing: that ... last man" (Nietzsche, 1924, p. 11). The terms are not ranked by ordinal degree of immorality nor are they necessarily mutually exclusive. Further articulation of these terms occurs in the context of their use in Chapter 9, particularly in evaluation of an innovative element posited present in Francis Bacon's *Politique Ethics*.

Throughout the enquiry, traced esoteric key terms nuance is linked with its coeval associate, those exoteric realities of the day such as discoveries, technologies, political milestones, developments in equity law and attainments of now famous charters. This linking allows anchoring of esoteric nuance to more generally established milestones found in history and philosophy of Science and technology literature and brings some perspective of historical time to the esoteric thread of the enquiry.

CONCLUSION

In this chapter I have outlined a framework methodology developed to allow progressive measurement of esoteric key-terms meanings and application of those meanings in articulation of Thesis Proposition Statements in a systematic and consistent manner. The chapter also discussed strengths and weaknesses of its constructed method, provided a brief example application of it, explained differences amongst enquiry use of the terms exoteric and esoteric and their usage in Straussian and Tübingen School of Philosophy literature, and attributed meanings to marker terms such as P(p)olis, Ovid-moment, Augustin-moment Goethe-moment and Yahoo-moment, in preparation for their subsequent use.

The framework methodology is simple. First esoteric definition of key terms is chosen. Secondly, progressive measurement of key terms nuance is effected in a consistent manner. Esoteric meanings of Science, Ethics and *Polis* are measured by calibration against esoteric domain referential criteria, namely, intellectual method, cognitive domain or sphere of operations, and faculty-of-soul constraints. Change detected in esoteric key terms meanings progressively so measured becomes the enquiry's surrogate measure of key terms nuance. Thirdly, key-terms nuance so captured is applied in

Table 13: Key Terms Nuance—Plato (BC c.427 – c.347) to Hobbes (AD 1588 – 1679)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>			Era
	Method	Sphere of Operations	Constraints	
<u>Under Plato (BC c.427 – c.347)-</u>				
Science	Knowledge of the unchanging or the that-which-can-be-no-other received through the beholding of the one and the forms. Science makes learning through reminiscence possible because it is a referent for the senses.	Intellectual knowledge of the beautiful and the good: knowledge of that which is unchanging and eternal, of that which can be no other, of that which constitutes first principles.	Mankind's flawed divinity.	Circa BC 400
Ethics	Wisdom as <i>nous</i> discerning between harmful and unarmful pleasure.	The bringing of knowledge of the <i>taxis</i> and <i>cosmos</i> of the <i>Polis</i> —the beneficial, and that which never harms, which resides in obedience to the law, justice and self-control.	Recalcitrant desire and will.	
<i>Polis</i>	An ideal just and happy gathering, a city of ideas in which classical Greek values prevail and in which truth informs reason.	Its own cognitive utility as an expression and explanation of the sociology and political philosophy of the gathering itself, and the predication of that gathering on four classic Greek values.	Its own ideality together with mankind's flawed divinity.	
<u>Under Aristotle (BC 385 - 322)—Chapter 3</u>				
Science	The syllogistic demonstration of universal truth from intuited singulars.	The faculty of the rational soul occasioned through the presence of <i>nous</i> when philosophical wisdom contemplates natural physical beings, mathematics and the gods, and also when it informs practical wisdom.	The difficulty of selecting correct premises through intuition and induction.	Circa BC 380
Ethics	Practical wisdom in discernment between good and bad acts or when, in art, practical wisdom informs true reasoning of the skills needed for the job at hand.	The calculative faculty of the rational soul and abode of practical wisdom; a condition and state of virtue which exists under the patronage of philosophical wisdom when practical wisdom engages with the lower moral virtues in sublimation of mankind's <i>arete</i> of happiness with virtue.	Human frailty inherent in the loss of will under desire and pleasure or the irascible.	
<i>Polis</i>	The final cause of the gathering and natural state of happiness with honour.	That condition prior to mankind and that social instinct implanted in mankind and its flowering into the natural stable and good of the cognitive <i>Polis</i> .	The fall of reason and will to desire and the passions.	
<u>Under a Fall of Greek Rationality to Revelation and Christian Faith to the Time of Augustine (AD 354 - 430)—Chapter 4</u>				
Science	Science is irrelevant and at best, as naked syllogistic method, has been banished to house arrest and dormant storage.	The oblivion of an imposed banishment.	Revealed truth.	From Christ to Augustine (AD 345 – 430)
Ethics	The overcoming of the absolute sin of the commandments through grace and faith in a personal Christ and surrender of human will to God's will, that is, surrender of irrational soul, containing evil and sin and the devil's work, to rational soul, containing the goodness of God's work.	A condition and state of moral virtue attained through, and proportional to, acceptance of the absolute laws of revealed truth.	Human free will and human frailty.	
<i>Polis</i>	Ratification, through grace, of citizenship of the eternal cognitive city of God attainable by personal acceptance of God as <i>Logos</i> and the all in all.	The human soul in various states of beatitude appropriate to levels of acceptance of Christ as <i>Logos</i> .	Contaminated nature, flawed humanity, free will, and the devil's evil presence in human irrational soul.	

Table 13 (continued)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>			Era
	Method	Sphere of Operations	Constraints	
<u>From the Time of Augustine (AD 354 – 430) to Abelard (AD 1079 – 1142) and on to, and as at, the Close of the Twelfth Century—Chapter 5</u>				
Science	Syllogistic demonstration through dialectic and yes-and-no disputation of truth about Christian scriptures but outside of the articles of faith: the syllogistic demonstration of the true from the false.	God’s created holy rational nature in its act of love and choice of the highest good which as a human condition prepares the way for faith.	The articles of faith.	Mid fifth century to close of the twelfth century
Ethics	Reasoned understanding of, and inherence in, religious truths revealed in Christian scriptures and associated authorised church dogma.	Faith as a condition of emotions and will: moral consciousness understood as the degree to which individual subjective consciousness is at one with consciousness of absolute Christian commandments.	Weakness of human will resulting in consent to transgress absolute Christian moral inhibitions. Good intention’s fall to evil.	
<i>Polis</i>	Ratification, through reasoned faith and love of God, of citizenship of an eternal cognitive city of God. Uncompromising unquestioning belief in the articles of faith realised through human will’s refusal to transgress Christian prohibitions’.	Intention and consent: that cognitive state occasioned when, within moral consciousness of the good and evil inhabiting the person, the will, under reason, consents, through love of God, to good above evil.	Intention’s temptation by, and fall to, evil.	
<u>The Thirteenth Century: The High Point of Faith-Science Syncretism under Aquinas (died 1275)—Chapter 6 Step One: Science, Ethics and <i>Polis</i> from Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)</u>				
Science	The intellectual virtue of syllogistic demonstration both <i>a priori</i> and <i>a posteriori</i> in dialectic and logic within the confines of a revealed faith theology. Theology too is a Science in an exoteric sense, that is, it uses reasoned demonstration, its esoteric dimension being God’s revealed truths.	The faculties of the intellectual virtues of wisdom, or theoretical reason, Science or syllogistic reasoning, and understanding or intellect inhering in the intellect’s necessary adherence to first principles and the intellectual appetite or will’s necessary adherence to the precepts of natural law through <i>synderesis</i> .	Revealed truth.	Thirteenth century to Aquinas (died 1275)
Ethics	<i>Synderesis</i> understood as the contingent will’s free choice of means to an end, under the necessary will’s adherence to happiness as mankind’s end, by which <i>synderesis</i> practical reason or prudence grasping its own first principles of natural law, reasons through syllogistic demonstration, to its own choice conclusions.	<i>Synderesis</i> now understood as the highest activity of the moral sense: either (a) <i>synderesis</i> first under grace and then under infused theological virtues of faith, hope and love and cardinal moral virtues of wisdom, justice, temperance and fortitude, or (b) <i>synderesis</i> without grace whereby practical wisdom, on the basis of experience, must mediate between choice on a case by case basis.	Human frailty expressed as the contingent or free will’s vacillation under the irascible and concupiscent passions.	
<i>Polis</i>	Ratification, through grace, of citizenship of the eternal city of God attainable through sublimation of infused theological and cardinal virtues under God’s grace.	Beatitude and bliss of God’s eternity and supremacy over nature.	Absence of faith and/or recalcitrant free will.	
<u>The Decline of Syncretisation of Reason and Faith from the Time of Aquinas (d. 1275) to the time of Buridan (death unknown but after 1385)—Chapter 6 Step Two: Science, Ethics and <i>Polis</i> from Aquinas (AD 1225 - 1247 to Jean Buridan (AD c. 1300 – c. 1358)</u>				
Science	Syllogistic demonstration of the true from the false in the realm of experiential knowledge understood as intuition, sensation and reason. It is based on fundamental premises induced from experience.	Divine reason’s necessary connection to the true, operating in the domains of sensation and cognition.	The will’s free choice and affinity for loving rather than knowing, which affinity, through love of God, allows mankind to believe the scientifically indemonstrable.	AD 1275 to Buridan (alive AD 1385)
Ethics	Active adherence to God’s will revealed in the scriptures and occasioned by the will’s adherence to that revelation.	The practical faculty of theology, theology being understood as that which can go directly to perception of principles without the need for Science or philosophy.	The will’s failure to conform to God’s will.	
<i>Polis</i>	<i>Polis</i> is a cognitive gathering occasioned through the human will’s acceptance of God’s will.	The spiritual will’s access to the grace of God.	The will’s failure to conform to God’s will.	

Table 13 (continued)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>			Era
	Method	Sphere of Operations	Constraints	
	Intrusion: The Re-emergence of Experimental Science from the Thirteenth to the Seventeenth Centuries—Chapter 7			
Science	Various cognitive research methodology frameworks and conventions known by names such as resolution and composition, aptitudinal union, prerogatives of experimental Science, method of differences in falsification or verification of the findings of the theoretical sciences, modus tollens, Kepler’s sleepwalking, Galileo’s inductive-deductive method and Newton’s rules of reasoning in philosophy.	The intellectual virtues at work as the art of practical Science in search of true causes.	Cautious regard for revealed truth together with the early infancy of experimental procedure and its attendant cognitive methodologies themselves.	From circa AD 1200 to 1700
Ethics	Not Applicable	Not Applicable	Not Applicable	
<i>Polis</i>	Not Applicable	Not Applicable	Not Applicable	
Francis Bacon (AD 1561 – 1626) and Dawning of the Modern Era—Chapter 8				
Science	Induction of axioms and laws through first cleansing mind of its idols and then application of Bacon’s method of tables of exclusions and helps to the understanding in experimental Science, and the application of those axioms and laws in deduction of further discovery.	Sensual experimental and experiential knowledge about the forms or Laws of Nature residing in their own power over nature and competent operation of that knowledge in superinduction of welfare benefits for mankind.	Idols of the mind, complexity of nature, and complexity of scientific method.	From circa AD 1561 to 1626
Ethics	Active logical management of the will in correct choice between comparative good alternatives in both self-good and good-in-communion domains in the interest of the welfare of the individual and society. It consists of internal goodness at the individual level and duty towards others at the societal level in present and future situations.	Ethics inheres in an appetite for good native to all existing things including the human mind <i>qua</i> its truthful penchant for welfare of individual or society, inhering at self-good level in mind well-formed and composed in itself and at good-in-communion level in mind well-formed towards others. It manifests in an attendant duty to govern others by governing oneself well towards others. Human rationality and the precepts of morality which marshal it are God given.	Frustration of the natural movement from lower nature to higher nature by such human conditions as ambition, self-love and greed.	
<i>Polis</i>	A cognitive gathering in a New Atlantis predicated on Godliness, peace and prosperity through application of Science for the betterment of mankind.	Power over nature which Science brings and stability and advancement it may bring to human society.	The failure of the will under logic’s counsel as to the correct choice between comparable duties.	

Table 13 (continued)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>			Era
	Method	Sphere of Operations	Constraints	
Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age—Chapter 9				
Science	Its method is ratiocination in resolution and composition operational through syllogistic demonstration of fact.	Movement or generation of bodies natural or political; scientific understanding of accidents and laws of those bodies and the power brought by such understanding for construction of a peaceful and prosperous artificial state.	Its constraints are nature’s complexity, problems of definition and deficiencies in syllogistic demonstration.	From circa AD 1599 to 1679
Ethics	To be ethical is to obey the Laws of Nature as these are expressed through the laws of a Leviathan. <i>Politique</i> Ethics, a subset of Philosophical Ethics discussed in detail in the enquiry, challenges the esoteric/exoteric methodology employed by the enquiry, and is not included in this table.	The will in act of improving individual and societal welfare. Movement in bodies and its control in accordance with the Laws of Nature and the laws of a Leviathan.	Its constraints are mankind’s egotistical selfish natural state and mankind’s failure of virtue understood as a failure to found an artificial state immune from a fear of violent death—a triumph of bad passions, similarly understood, over good passions.	
<i>Polis</i>	Cognitive gathering in an artificial state, a Leviathan or Commonwealth, predicated on obeying the Laws of Nature discovered by reason.	Laws of Nature expressed as civil laws and through obedience to them the surrender of individual vanities to the state in return for peace, prosperity and advancement.	<i>In foro interno</i> lack of true desire to obey those laws and thus to feign obedience to them, and <i>in foro externo</i> permission not to obey the law when, in situations where others are not obeying it, harm might come to one who does obey it.	

Table 14: Progressive Articulation of Thesis Proposition Statements—Plato (BC c. 427 – c. 347) to Hobbes (AD 1588 – 1679)

INTRODUCTION AND PART ONE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Introduction	Foundational unchanging key terms meanings are established: The Modern Age is an era from circa Bacon (AD 1561 - 1626) and Hobbes (AD 1588 - 1679) to circa the middle of the twentieth century. Science means the pursuit of true knowledge—knowledge of that which can be no other. Ethics means correct action and just desire in personal and social affairs, and <i>Polis</i> means cognitive or esoteric political gathering. P(p)olis is a marker derived from <i>Polis qua</i> esoteric gathering to identify either a touchable, visible, manufactured, constructed or exoteric gathering of bricks and mortar and institutions and regulations and the like, or illness of fit of the term <i>Polis</i> depending on context. Political philosophy is critical moral evaluation of political gathering. Articulation of divine is not yet begun. Articulation of virtue not yet begun.
		Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato’s Political Philosophy	There is no nuance in the term Modern Age. <i>Polis</i> is an ideal, just and happy gathering or a city of ideas in which classical Greek values prevail and in which truth informs reason. Platonic <i>nous</i> is established as a divine element in mankind. Virtue <i>qua</i> state of mind is some kind of knowledge. Technical virtue as good-at-what is differentiated from moral virtue as absolute goodness <i>per se</i> . To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one’s own and not another’s business, and temperance as self-control, discerning between the harmful and the unharmed.
		Chapter 2 Key Terms Usage and Enquiry Methodology	There is no nuance in the term Modern Age. A methodology for esoteric definition of Science, Ethics and <i>Polis</i> is established and applied in Plato’s case to confirm <i>Polis</i> as a cognitive gathering predicated on acceptance of objectively real forms existing in one only begotten heaven, Science as knowledge of the unchanging or that which can be no other received through beholding of the one and the forms and Ethics as <i>nous</i> discerning between the harmful and unharmed, <i>nous</i> being an element of divine reason in mankind. Virtuous act remains unchanged.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Introduction	Attribution of the Modern Age as the era from Bacon (AD 1561 – 1621) and Hobbes (AD 1588 – 1679) until the middle of the twentieth century. Articulation of metaphysics is not yet begun. Foundational attributions of meaning: Science means the pursuit of true knowledge—knowledge of that which can be no other. Ethics means correct action and just desire in personal and social affairs. Articulation of practical Ethics not yet begun.
		Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato’s Political Philosophy	There is no nuance in the term Modern Age. Articulation of Metaphysics is not yet begun. Science is knowledge of the unchanging or that which can be no other received through beholding of the one and the forms. Ethics is reasoned moral activity inherent in <i>nous</i> ’ discernment of the harmful from the unharmed. To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one’s own and not another’s business, and temperance as self-control, discerning between the harmful and the unharmed.
		Chapter 2 Key Terms Usage and Enquiry Methodology	There is no nuance in the term Modern Age. Platonic Science is the final partaking of the forms which occasion understanding by reminiscence. Platonic practical Ethics is <i>nous</i> discerning between harmful and unharmed pleasure under the aegis of four classic Greek virtues wisdom, justice, valour and temperance which inhere both in the human soul and the ideal <i>Polis</i> .
		Chapter 3 Science, Ethics and <i>Polis</i> in the Political Philosophy of Aristotle (BC 384-322)	There is no nuance in the term Modern Age. Aristotelian metaphysics is established as the architectonic science begotten when theoretical wisdom contemplates the transcendent. Aristotelian practical Ethics is established to be practical wisdom’s discernment, under theoretical wisdom’s patronage, between good and bad acts as these are referred to it by the lower moral virtues. For art in act, practical Ethics is true reasoning of the correct rule. Science is syllogistically reasoned demonstration of fact understood as truth or that which can be no other. It is knowledge of the four causes of being.

Table 14 (continued)

INTRODUCTION AND PART ONE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
n.a.	Not applicable	Introduction	Modern Age as the era from Bacon and Hobbes until the middle of the twentieth century. Foundational explanation of meaning: Ethics means correct action and just desire in personal and social affairs. Articulation of practical Ethics not yet begun.
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato's Political Philosophy	There is no nuance in the term Modern Age. Articulation of Metaphysics is not yet begun. Science is knowledge of the unchanging or that which can be no other received through beholding of the one and the forms. Ethics is reasoned moral activity inherent in <i>nous</i> ' discernment of the harmful from the unharmed. To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one's own and not another's business, and temperance as self-control, discerning between the harmful and the unharmed.
		Chapter 2 Key Terms Usage and Enquiry Methodology	There is no nuance in the term Modern Age. Platonic practical Ethics is <i>nous</i> discerning between harmful and unharmed pleasure under the aegis of four classic Greek virtues wisdom, justice, valour and temperance which inhere both in the human soul and the ideal <i>Polis</i> .
		Chapter 3 Science, Ethics and <i>Polis</i> in the Political Philosophy of Aristotle (BC 384-322)	There is no nuance in the term Modern Age. Aristotelian practical Ethics is established to be practical wisdom's discernment, under theoretical wisdom's patronage, between good and bad acts as these are referred to it by the lower moral virtues. For art in act, practical Ethics is true reasoning of the correct rule.
<u>Integrating Summary of Part One</u>			
By building on the legacy of Presocratic writers and Plato, Aristotle established a political philosophy predicated on a naturally stable <i>Polis</i> , in which the intellectual virtues of theoretical and practical wisdom arbitrate in discerning correct reason and right desire in matters of moral conduct referred to them by the irrational soul. In this esoteric <i>Polis</i> mankind realises its <i>ergon</i> of happiness with justice and honour under patronage of the beautiful. Justice is predicated either on merit or on equality of exchange. Science, as knowledge of the four causes of being, knowledge of that which can be no other, proceeds through its method of syllogistic reasoning from intuitively induced singular terms to deduced universal terms. Science as the universal body of true knowledge about the sub-lunar world results when philosophical wisdom contemplates existing beings. Science as metaphysics, a theology, occurs when theoretical philosophy contemplates the transcendent.			

Table 14 (continued)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	<p>Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.</p>	<p>Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology</p>	<p>There is no nuance of the term Modern Age. <i>Polis</i> is a cognitive gathering or eternal city of God predicated on acceptance of His grace. Reason remains divine as a gift of a now Christian God who is all reason and is present in the human soul. Virtue is obedience to God's laws through acceptance of His grace and is practised by refusing to transgress Christian prohibitions.</p>
		<p>Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)</p>	<p>There is no nuance of the term Modern Age. <i>Polis</i> remains a cognitive gathering bound through reasoned faith and love of God. Reason remains divine as a gift of a Christian God. Virtue remains obedience to God's laws through acceptance of His grace and is practised by refusing to transgress Christian prohibitions.</p>
		<p>Chapter 6 Science, Ethics and <i>Polis</i>—Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)</p>	<p>There is no nuance of the term Modern Age. <i>Polis</i> is an eternal city of God occasioned through acceptance of infused theological and cardinal virtues under acceptance of God's grace. Reason remains divine as the gift of a Christian God. Virtue remains obedience to God's laws through acceptance of His grace and is practised by refusing to transgress Christian prohibitions.</p>
		<p>Chapter 6 (continued) Aquinas to Buridan (AD c.1300 – c.1358)</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the 'one' is replaced by unquestioning life in Christ. Science as reasoned demonstration of natural truths is banished to irrelevant oblivion.</p>

Table 14 (continued)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
2	<p>Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.</p>	<p>Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the one is replaced by unquestioning life in Christ. Science as reasoned demonstration of natural truths is banished to irrelevant oblivion. Practical Ethics is replaced by faith Ethics.</p>
		<p>Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by reasoned life in Christ. Science becomes syllogistic reasoning in dialectic and yes and no disputation predominantly within the confines of faith authority and within a developing scholastic method. Science as observation and reasoning about natural phenomena, and engagement with them, begins to reappear in the form of experimental Science. Virtue is obedience to God's laws through acceptance of His grace and practical Ethics is living life under reasoned interpretation of those laws <i>qua</i> church doctrine. To be ethical is to act so as not to transgress prohibitions specified in Christian law.</p>
		<p>Chapter 6 Science, Ethics and <i>Polis</i>—Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by reasoned life in Christ. Science is again an intellectual virtue and consists of syllogistic demonstration both <i>a priori</i> and <i>a posteriori</i> in dialectic and logic within the confines of a revealed faith theology. Under grace it informs ethical choice as a prelude to beatitude and outside of grace combines with experience to inform moral choice. Science searches for truth in matters natural and theological, theology being named a Science. Ethics becomes the contingent will's free choice of means to ends, under the necessary will's adherence to happiness as mankind's end. Ethics in guiding practical action is occasioned through <i>synderesis</i> which consists of practical reason or prudence grasping its own first principles of natural law and reasoning through syllogistic demonstration to its own choice conclusions.</p>
		<p>Chapter 6 (continued) Aquinas (AD 1225 – 1274) to Buridan (AD c.1300 – c.1358)</p>	<p>There is no nuance of the term Modern Age. Theology finds no use for metaphysics or philosophy and reason slips its faith Ethics confines. Metaphysics as contemplation of God is expelled from theology and continues its own independent journey. Science becomes syllogistic demonstration of the true from the false in experiential domains of intuition, sensation and reason, syllogistic demonstration being predicated on fundamental premises induced from experience. Science so understood has no place in explanation of revelation and the articles of faith. Ethics becomes active adherence to God's revealed will. Practical Ethics is thus applied theology operating through the will's conformity to Christian teaching. Human will, rather than Aristotle's or Aquinas' divine reason, now separates mankind from the beasts.</p>

Table 14 (Continued)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. Aristotelian practical Ethics becomes Christian faith Ethics.
		Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	There is no nuance of the term Modern Age. Practical Ethics is the living of life under reasoned interpretation of the doctrine of the Church and consists in refusing to transgress Christian prohibitions.
		Chapter 6 Science, Ethics and <i>Polis</i> —Abelard (AD 1079 - 1142) to Aquinas (AD 1225 - 1274)	There is no nuance of the term Modern Age. Ethics becomes the contingent will's free choice of means to ends, under the necessary will's adherence to happiness as mankind's end. Ethics as a practical action is occasioned through <i>synderesis</i> which consists of practical reason or prudence grasping its own first principles of natural law and reasoning through syllogistic demonstration to its own choice conclusions.
		Chapter 6 (continued) Aquinas to Buridan (AD c.1300 – c.1358)	There is no nuance in the term Modern Age. Ethics becomes active adherence to God's revealed will occasioned by human will's adherence to God's will. Practical Ethics is thus applied theology operating through the will's conformity to Christian teaching. Human will, rather than Aristotle's or Aquinas' divine reason, now separates mankind from the beasts. Practical Ethics is applied theology operating through the will's conformity to Christian teaching.

4

Integrating Summary of Part Two

Aristotle's unified political philosophy fractured under an intermingling of Greek heritage and Jewish revelation doctrine and the ongoing development of Christianity. By the time of Augustine (AD 354 – 430), Greek rational Ethics had been replaced by revealed faith Ethics, Christ as divine *Logos* had replaced *nous* as *logos*. Aristotle's categorical explanation of being had been replaced by divine revelation's announcement of God as the creator of the world and its beings. A personal Christian God of love became available as an alternative to a Jewish God of wrath and both had replaced an impersonal Greek god or one. A Greek city of ideas had been replaced as *Polis* by a Christian city of God. Science, now irrelevant to faith, and no longer recognised as the arbiter of truth under theoretical and practical reason, or knowledge of the four causes, but recognised as syllogistic method, is ignored to survive as best it can. Ethics inheres in overcoming the absolute sin outlined in the commandments. During the time from Augustine (AD 354 – 430) to the close of the twelfth century, church dogmatists could not wholly ignore the utility of reason which established itself as syllogistic demonstration in dialectic and disputation. Employed in this form under strict control by the authority of faith, reason begot a new Science of theology. Ethics inheres in willing oneself not to transgress Christian prohibitions and Ethics could employ reason subject to the constraints of the mysteries of faith. Science *qua* syllogistic demonstration and Ethics became compatible and reason and faith became one by virtue of faith Ethics' acceptance of reason. Earlier Eriugena (AD c. 8008 – 877) had pronounced Science and faith to be the same thing. Abelard (AD 1078 – 1142) is something of a milestone of this development and at the time of his life, on the eve of the rediscovery of Aristotle's wider corpus, Science is syllogistic reasoning within dialectic and yes and no disputation about truth in theology, Ethics remains that act by which humans will themselves not to transgress Christian prohibitions, and *Polis* is a city of God. During this time dialectic and rhetoric beget logic and a re-emergence in interest in experimental Science is discernible. The compatibility of Science and faith brought forward by Anselm (AD 1033-1109) and Abelard (AD 1079 – 1142) reached its highest point with Aquinas (AD 1225 – 1274). Both Aquinas and his teacher Magnus (AD 1193 – 1280) were recipients of Aristotle's wider corpus and through their contributions Greek understandings were for a second time blended with developing Christianity but against a very different background. Under Aquinas theology and natural Science are both called Science. Science remains syllogistic reasoning but it is once again an intellectual virtue which, under grace, informs ethical choice as a prelude to beatitude, or outside of grace and from experience, informs moral choice. Science and faith are one when syllogistic reasoning, other than in questioning of the mysteries of faith, is at work in search of truth in matters natural and theological. Ethics is *synderesis*, a process by which the contingent will is guided in its free choice of means to ends by the necessary will under its adherence to happiness. In *synderesis*, practical wisdom or prudence grasps its own first principles, the precepts of natural law, and reasons through syllogistic demonstration to reach its own conclusions. A Greek good-at-what efficiency criterion again informs Ethics. To be ethical is to be good at living a righteous Christian life. *Polis* remains a city of God consisting of the sublime occasioned through infused theological and cardinal virtues under grace. The high syncretisation of Science and faith so skilfully woven by Aquinas was gradually broken down by incremental erosion and can be traced from Duns Scotus (AD c. 1270 – 1308) to Jean Buridan (AD c. 1300 – 1358). Within 76 years of Aquinas' death, compatibility of reason and faith was fractured. Theology, not reason, guided Ethics. Theology found little need for either metaphysics or philosophy. Reason had tasted its first days of freedom from faith Ethics. The will, rather than Aristotle's or Aquinas' divine reason, now separated mankind from the beasts. Science transformed into syllogistic demonstration of the true from the false in the experiential domains of intuition, sensation and reason. Ethics became active adherence to God's revealed will occasioned by the human will's adherence to God's will. The *Polis* became the cognitive gathering occasioned by the human will's acceptance of God's will. Aquinas's Christian Aristotelian system had largely been compromised.

Table 14 (Continued)

PART THREE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	<p>Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.</p>	Chapter 7 Re-emergence of Experimental Science	Not applicable
		Chapter 8 Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	There is no nuance of the term Modern Age. <i>Polis</i> is a peaceful, Godly and prosperous New Atlantis in which scientific knowledge is power over the Laws of Nature. Reason and the precepts of morality are divine. A focus on the right use of knowledge as power replaces a focus on the kind of knowledge of which virtue may consist.
		Chapter 9 Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	There is no nuance in the term Modern Age Some capacity for reason appears to come ready made into the world with birth, after which occurrence, reason <i>per se</i> is learned both formally and also vicariously through industrial arts and activity. No part of reason is divine. Apperception of knowledge as power continues to override focus on a question of whether virtue is some kind of knowledge, and if so what kind. To be morally virtuous is to obey the law because it is the law and not to feign to obey the law. It allows mankind to dominate nature and/or to lift mankind from its natural state. The virtuous person acts to maintain peace and improve the conditions of life. <i>Polis</i> is an artificial state or Leviathan predicated on Laws of Nature discovered by reason and maintained an ongoing surrender of vanity to obedience to law for peace and prosperity purposes.
		Chapter 10 Discussion on the Veracity of the Thesis Propositions and Closure of the Enquiry	Thesis Proposition Statement 1 is, within the confines of the enquiry methodology, conjectured to be valid..
2	<p>Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.</p>	Chapter 7 Re-emergence of Experimental Science	Experimental Science returns and a so-called age of reason begins. Science understood as syllogistic demonstration is becoming replaced by Science as induction and deduction within rules for reasoning in natural philosophy.
		Chapter 8 Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	There is no nuance of the term modern Age Science is knowledge of the Forms or Laws of Nature derived from Bacon’s new kind of induction applied through his new machine of method, his novum organum. Ethics is the doctrine of the will in search of the good understood as the welfare of the individual or society. It consists of making the correct choice between self-good alternatives and good-in-communion alternatives in their respective comparative good settings. It inheres in mind well-ordered and composed in itself and mind well disposed towards others, and it answers to theology. Metaphysic replaces metaphysics. Metaphysic is inquisition of formal cause in operative Science and partly informs superinduction and its attendant welfare benefits for mankind. Practical Ethics is will working towards the good of the individual or society. At the individual level it is internal goodness and at the societal level it is politics or external goodness.
		Chapter 9 Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	There is no nuance in the term Modern Age Science is ratiocination about qualities of body effected through resolution and composition itself a product of syllogism and reasoned fact. Ethics and theology are expelled from Science. Ethics is no longer the servant of theology. Practical Ethics is the act of obeying the law of Leviathan.
		Chapter 10 Discussion on the Veracity of the Thesis Propositions and Closure of the Enquiry	Thesis Proposition Statement 2 is, within the confines of the enquiry methodology, conjectured to be valid..

Table 14: (Continued)

PART THREE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 7 Re-emergence of Experimental Science	Not applicable
		Chapter 8 Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	There is no nuance in the term Modern Age Ethics is the doctrine of the will in search of the good understood as the welfare of the individual or society. It consists of making the correct choice between self-good alternatives and good-in-communion alternatives in their respective comparative good settings. It inheres in mind well-ordered and composed in itself and mind well disposed towards others, and it answers to theology.
		Chapter 9 Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	To act ethically is to obey the law because it is the law and not to feign to obey the law. Its end is the peace and prosperity of Leviathan or Commonwealth.
		Chapter 10 Discussion on the Veracity of the Thesis Propositions Statements and Closure of the Enquiry	Thesis Proposition Statement 3 is, within the confines of the enquiry methodology, conjectured to be valid..
<u>Integrating Summary of Part Three</u>			
<p>A fledgling experimental Science found in Magnus (AD 1193 – 1280) had, by the time of Isaac Newton (AD 1643 - 1727), formed a basis for a method of Science presently in practice: observe, hypothesise, falsify or verify by testing, and tentatively accept verifications as theory. This long development of experimental Science method occurred within a system of faith Ethics and in its own way, was part of the social, political, and cultural change and discovery of the times: renaissance and humanism, reformation and counter reformation, European discovery of printing, European discovery of the Americas, and emergence of nation states. Towards the end of this period two scholars, Francis Bacon (AD 1561 – 1626) and Thomas Hobbes (AD 1588 – 1679) addressed Science in political philosophies so different as to constitute a clear change from Aristotelian political philosophy as it had become known in its western Christian dress. Under Bacon Science became a practical, experimental, operative activity in pursuit of advancement of learning and human welfare, a pursuit free from Aristotelian metaphysics and final cause, yet subject to Ethical constraints largely predicated on theology, <i>Politique</i> Ethics being predicated on other referents as well. . Under Hobbes, Ethics was no longer monopolised by theology and to be Ethical was to obey the laws of the state. The enquiry esoteric/exoteric divide methodology is increasingly difficult to sustain because induction and/or deduction, including its attendant inference, is increasingly linked to experimentation and invention and with both Bacon and Hobbes Science applies itself at the level of nature, man and society and its knowledge is a power which occasions mankind’s advancement through peace and economic development. Aristotle’s naturally good state and good life had fallen to an artificial state in which mankind obeyed the law in return for security and prosperity that Science as power over nature’s laws would bring under a peace occasioned by obedience to civil law. Divine reason no longer separated mankind from the brutes, rather capacity for reason learned and developed through sensual experiential occurrence. A <i>Leviathan</i> or a <i>New Atlantis</i>—and others too—were available as alternative <i>Polies</i> to cities of God, a republic of ideas, or a natural state prior to man. Ethics had descended to the will’s correct selection of the means to individual and communal welfare through simple obedience to civil law. Science had become induction and deduction of truths about nature, mankind and society, its knowledge being applied to gain power over nature for utility and advancement of mankind and human condition.</p>			

articulation of the Thesis Proposition Statements, the combined impact of this nuance being a surrogate measure of changing political philosophy by virtue of the presence of the three esoteric key terms in the Thesis Proposition Statements being articulated. Exoteric markers of change and passage of time, for example wars, discoveries, inventions, and commonly recognised historical periods are assigned milestone, beacon or buoy roles to locate and anchor traced esoteric change within more tangible and concrete history and philosophy of Science and technology contexts.

Table 13 and Table 14 break white space conventions to accommodate software formatting requirements and for ease of reading.

Chapter 3

Science, Ethics and *Polis* in the Political Philosophy of Aristotle (BC 384 – 322)

INTRODUCTION

In Chapter 1 I traced the emergence of Science and Ethics from an early era of totem ritual and space to the time of the historical Socrates. I suggested that Plato, as recipient of a Socratic heritage, was able to build a cognitive republic in which Ethics, emerging as a practical philosophy, was informed by Science. I also clarified the basis on which Science, as knowing arising from the partaking of the forms, made possible a discourse between ideal forms and the base materiality of perceived independently existing beings. Predicated as it might be on reincarnation and the journey of the soul, Plato's Science, which he applied in reassessment of Homeric ethical values, remained compatible with an ideal or esoteric *Polis* based on a political philosophy which reached out to, and required of its citizens, an objective and ethical performance in the everyday practical affairs of life, city and state.

In this chapter I trace the ongoing interconnection amongst Science, Ethics and *Polis*, by demonstrating how Aristotle further developed the Platonic heritage to establish a political philosophy that was to remain influential for almost two millennia. I complete the work of the chapter by discussing five proposals in turn, each of which is posited to express a foundational tenet of Aristotle's system.

First, I address Aristotle's finding that substantial natural beings compounded of form and matter exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

Secondly, I address Aristotle's finding that metaphysical beings exist, and his explanation of how, through their extension in *nous*, they play a role in human understanding.

Thirdly, I explain Aristotle's development of so-called objective Ethics consisting not only of words but also of appropriate action effected under practical wisdom's cognitive appeal to scientific reasoning.

Fourthly, I comment on Aristotle’s founding of Science as a process of induction and deduction based on objective understandings about natural objects, and his development of a logic which prescribes a procedure for reasoning in Science.

Fifthly, I outline Aristotle’s skilful bringing of such Science and Ethics to his political philosophy and his argument, in that philosophy, that *Polis* or gathering, being based on natural law imperatives, is essentially stable and good.

Henceforth I refer to these five proposals as Proposals (1) through (V).

The proposals are stated separately for explanation purposes but they are not mutually exclusive. None of them is immune from the influence of the others. Consequently, the demonstration of each proposal is not necessarily complete in itself before demonstration of the next begins—a situation that arises because a basic understanding of the next proposal must first be established before the full impact of the former proposal on it can be fully appreciated. As a result, a final articulation of each preceding proposal is not fully realised until the articulation of Proposal (V) which, as the final piece to the puzzle, completes the chapter’s integrating articulation and brings insight to the unified system which is the child of Aristotle’s brilliance.

In this chapter the articulation I have been discussing is named Level 1 articulation

**Superscript Identification of Level 2 Articulation
Employed in Discussions of Proposals (I) and (II)**

$\Delta 2KTS$ = Level 2 thesis key terms articulation of
Science

$\Delta 2KTE$ = Level 2 thesis key terms articulation of
Ethics

$\Delta 2KTP$ = Level 2thesis key terms articulation of
Polis

because it attempts to elucidate Aristotelian construct upon which, in turn, key terms nuance, and the Thesis Proposition Statement meanings it informs, depend. While Level 1 articulation of Proposals (I) through (V) carries the narrative of the

chapter it is complemented by two more levels of articulation.

To wit: Level 2 articulation, in which I trace the nuance in key terms brought to the enquiry through an unfolding of Aristotelian construct and system, occurs in conjunction with the Level 1 articulation—in this enquiry, that Aristotle has a system goes unchallenged. I employ the superscripts contained to the box on page 205 to

denote its coincident presence within Level 1 articulation of Proposals (I) and (II), where it might be overlooked because of the complexity of the Level 1 construct articulation contained there. I cease to employ Level 2 identifying superscripts in discussions of Proposals (III), (IV) and (V) because it is clearly present there. I do not gather the ongoing Level 2 articulation together and close discussion on it until page 271 near the end of the chapter.

Level 3 articulation begins on page 273, just before the chapter concludes, and by virtue of it, I bring the Level 2 articulated key terms nuance to a discussion of Thesis Proposition Statements.

FORM MATTER AND BEING
Level I Articulation of Proposal (I) Begins

Proposal (I)
Aristotle's finds that substantial natural beings compounded of <i>form</i> and <i>matter</i> exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

There is considerable complexity behind the simple statement of Proposal (I) which contains Aristotle's fundamental break from Plato—a break which can be more fully appreciated when Aristotle's different usage of the word form is understood. This journey of

understanding begins with Aristotle's concept of being.

Like Plato, Aristotle agrees that in nature there are discernible kinds of beings that can be scientifically studied in respect of their similar and different characteristics. Unlike Plato, whose enquiry I have shown in Chapter 1 to begin with the eternal, Aristotle begins with his here and now. He begins with actually existing natural beings themselves, beings existing in time and space, which are reliably accessible to human understanding. In so rejecting Plato's idealist ontology Aristotle ended the journey of the soul and its attendant noesis. He made human understanding a slightly less esoteric and more-earthly affair yet a sophisticated and magnificent one nonetheless.

Being is Aristotle's starting point and his definition of being is inextricably interwoven with, and indispensable to, his deliberations on Science and Ethics ^{Δ2ΚΤΣ} ^{Δ2ΚΤΕ}. In *Categories* (Aristotle, 1938a, 1952a), a work traditionally classified as part of Aristotle's logic, knowledge about such independently existing beings as horses, trees, humans, birds and fishes is made possible by virtue of the composite nature of

those individuals which consist of substance, and qualities inhering in that substance *Categories* 4 1b25 – 2a (Aristotle, 1938a; 1952a, pp. 5-6). Table 15 outlines Aristotle’s categories of being.

Table 15: Aristotle's Categories of Being

Category	Explanation
Substance	“Substance, in the truest and primary and most definite sense of the word, is that which is neither predicable of a subject, nor present in a subject” <i>Categories</i> 2a5-15 (Aristotle, 1938a; 1952a, p. 6). “Thus everything except primary substances is either predicated on primary substances, or is present in them, and if these last did not exist, it would be impossible for anything else to exist.” (ibid., 2b5, p. 6). “Moreover, primary substances are most properly called substances in virtue of the fact that they are the entities which underlie everything else.” (ibid., 2b15, p. 6). All other substances are secondary substances and they convey meanings about primary substances (ibid., 3b30, p. 7). Primary substances are individuals, secondary substances are universals. Primary substances exist independently of mind, secondary substances exist in the mind.
Quantity	This is the extension (bulk and shape) of an object, and may be either discrete or continuous. Further, its parts may or may not have relative positions to each other.
Quality	This is a determination which characterizes the nature of an object. For example colour is a quality, so too smoothness, so too roughness.
Relation	This is the way in which one object may be related to another.
Place	Position in relation to the surrounding environment.
Time	Position in relation to the course of events.
Position	A condition of rest resulting from an action: the end point for the corresponding action. Also the relative position of the parts of an object when those parts are inseparable from that object, and the object is at rest, for example the arms of a sitting person.
State	A condition of rest resulting from an affection, that is from being acted on, for example being shod or armed. Physical accessories also help determine the state of a thing: a person’s hat or shoes, a shod horse, a bronze column’s markings.
Action	The production of change in some other object.
Affection	The reception of change from some other object. It is also known as passivity. It is clear from the examples Aristotle gave for action and for affection that action is to affection as the active voice is to the passive voice. Thus for action he gave the examples, to lance, to cauterize; for affection, to be lanced, to be cauterized. The term is frequently misinterpreted to mean a kind of emotion or passion.

Primary substance
 Secondary substances

Source: Constructed by Ian Eddington from Aristotle. (1952). *Categories*. (1b10 p. 5, 1a25 – 2a15, p. 6, 1b25 – 2a5, pp. 5 – 6, 2a10 – 4b20, pp. 6 - 9). In R. M. Hutchins (Ed.), *Aristotle I*. (Vol. 8, pp. 25 - 38). Chicago: William Benton; Aristotle. (1952). *Topics*. (I 8 103b – 103b20, pp. 146 - 147). In R. M. Hutchins (Ed.), *Aristotle*. (Vol. 8, pp. 143-226). Chicago: William Benton; Copleston, F. (1966). *A History of Philosophy Volume I Greece and Rome*. (p. 278). London: Burns and Oats Limited.

Elsewhere, in *Metaphysics Z*³ (VII) 1038ba – 1040b, IX 1049b – 1050a20 (Aristotle, 1952d, pp. 562 - 564, 575 - 576; 1989), Aristotle further articulates and qualifies the

³ A concordance of chapter numbers of the *Metaphysics* is provided for ease of reference.

Greek	A	α	B	Γ	Δ	E	Z	H	I	Θ	K	Λ	M	N
Roman	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
Arabic	1	2	3	4	5	6	7	8	9	10	11	12	13	14

manner in which components of the individual beings of the substance row of Table 15 contribute to the identification of being. I address these qualifications below, beginning on page 210 but before doing so I offer a more detailed analysis of the explanation of being contained in the *Categories* (Aristotle, 1938a, 1952a).

In the *Categories* Aristotle gives an account of natural beings, of the things that exist. He divides beings into ten categories also known as *praedicamenta* or predicates of being *Categories* 1b25 – 2a5 (Aristotle, 1938a; 1952a, pp. 5-6) and *Topics* I 103b20 - 25 (Aristotle, 1952r, p. 147; 1960b). The ten categories, listed in the left hand column of Table 15, are ways in which humans think about existing beings. Humans predicate the existence of beings on substance, and its accidents, quantity as bulk or shape, quality as colour, roughness, hardness and so on down the categories column, and these predicates of thought accurately capture the way beings exist. Of these categories, substance, *ousia*, which in element 2,1 of Table 15 heads the list, is that which is capable of existing independently in its own right. It is the primary substance. The remaining classes of categories inhere in it and cannot exist apart from it *Categories* 1a25 – 2b15 (Aristotle, 1938a; 1952a, pp. 5 - 6). These remaining classes named in the left hand column of Table 15 are secondary substances. Thus in Table 15 quantity, the extension or bulk of a body, can only exist within a primary substance. So too, without a primary substance quality does not exist—the red in the mane of a horse exists only within the substance of the horse and cannot exist anywhere without, that is outside of, that substance—and so on down to the last category class named affection.



Within each of the ten category divisions there is a relational hierarchy of being from more general to less general *Categories* 1b10 (Aristotle, 1938a; 1952a, p. 5). For example for the substance division of Table 16, animal is predicated on man and man is predicated on that particular existing thing, that particular man, Thrasymachus. For quality, that particular shade of green, sea-green for example, is more generally green, which green again is more generally colour. Aristotle draws his categorical definition of primary substance from the logic of the categories. Primary substances are beings that exist independently and for which there is no lower hierarchy of being. Primary substances, the things that exist, are thus the individuals in the

substance division of the categories, that man Thrasymachus, that horse Pegasus, that rock, that tree, and in the classification of the categories are to be found in the left hand cell of row 2 of Table 15 or the first element of the second row of Table 16.

Table 16: Examples of Hierarchies in Primary Substance and Secondary Substances

Category	Individual (Specific Thing)	Universals	
		Less Specific	Still Less Specific
Substance ¹	Thrasymachus spider ox a diamond	man insect ruminant gemstone	animal animal animal mineral
Quality (colour)	green	sea green	colour
intermediate categories	lacuna representing intermediate categories		
Affection (to be cut)	to lance	cutting	dissection

Notes

- (1)  primary substance
 secondary substance

- (2) Aristotle's chosen example is particular man, man, and animal. The other examples are mine and illustrate the idea of hierarchy. They may not be found as examples in Aristotle. Nor are they offered in the sense of modern hierarchies of species, phylum, and genus.

Secondary substances consist of the particulars and their universal subjects in the remaining divisions of the categories together with the universals within the substance division itself *Categories* 2a10 – 4b20 (Aristotle, 1938a; 1952a, pp. 6 - 9). The particulars in the primary substance category exist independently outside of mind and consist of substance plus accidents such as colour, extension and quality. Aristotle makes a fundamental point that human knowledge in general must of necessity begin with perception of particulars and progress to the general and, except where physiologically defective, the senses do not err in sensing particulars: "... at the end, the one acted upon [the thing perceived] is assimilated to the other [the sensing-perceiving organ] and is identical in quality with it" *De Anima* II 418a5 (Aristotle, 1952b, p. 648, my square brackets; 1984b). In this process while the particulars apprehended by sensation exist outside of the mind, the universals apprehended by knowledge exist within the mind *De Anima* II 417b20 - 30 (Aristotle, 1952b, p. 648; 1984b). Aristotle posits that truth or falsity is a function of correct intuition and/or correct scientific reasoning, ^{42KTS} there being no question of the existence of things, individual beings *per se*—*Metaphysics* VI 1028a – 1028a5 in the context of VI 1026a30 - 1028a5 (Aristotle, 1952d, pp. 548 - 550; 1989). Whereas the

senses accurately capture existing particulars, so also a common sense coordinates the five main senses—*De Anima* II 418a15-20 (Aristotle, 1952b, p. 648; 1984b).

In respect of the content of the previous paragraph, the claim made there that human

Proposal (I)

Aristotle's finding that substantial natural beings compounded of *form* and *matter* exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

knowledge must begin with perception of individuals which exist independently outside of the mind, and that universals exist only within the mind, announcing as

it does a fundamental tenet of Aristotle's system in general, and Science in particular, ^{Δ2ΚΤΣ} also provides a building block and foundation for the subsequent work of this chapter. More to the point, the commentary of the previous paragraph is germane to articulation of part of the content of Proposal (I). Put simply, provided no lesions are present in the sense organs, these organs accurately present what is, as it is, to human consciousness, and thought is predicated on, and organised around, those presented sensations. Beings exist and humans perceive them.

Even so, to hold that the existing particulars are themselves known by the accidents upon which they are predicated, ivory for example being in part known by its whiteness, is to hold an enigma. Substance, in its purest form, must be that which remains when, one by one, the accidental qualities are mentally removed. Taking away affection, then taking away action, then taking away position and so on up the categories list should lead to substance *per se*. The difficulty here is how, in some cases, to mentally take things away. For example what is left when one tries to mentally remove quantity from horse, or even quality, dapple grey say? Of what then, beyond the last accident mentally removed, does substance consist? What is the nature of substance, whose presence is revealed through the accidents? Aristotle attempts to answer this question in the *Metaphysics* (Aristotle, 1952d, 1989) and, as earlier foreshadowed on page 208, I now turn to his further articulation of being, that is, substance, as he reveals it in *Metaphysics* (Aristotle, 1952d, 1989), and in the *De Anima*. (Aristotle, 1952b, 1957a).

Aristotle finds that three kinds of being occasion three kinds of theoretical philosophy. For example at *Metaphysics* IV 1003b5 - 15, VII, 1028a10 - 1028a30 (Aristotle, 1952d, pp. 522, 550; 1989), Aristotle specifies prime substance to be that

which is neither in a subject nor a predicate of a subject—a definition which is not entirely at odds to the one given in the *Categories*. Copleston (1966, p. 291), who does not give specific references, is able, respectively, to find in the general sense of Books VI and I of *Metaphysics*, substance divided into that which is changeable and that which is unchangeable, and substance classified in three ways; sensible and perishable: for example particular objects; sensible and eternal: for example planets and their motions; and non-sensible and eternal: for example mind and other metaphysical beings, of which more later. The respective locations are *Metaphysics* VI 1025b – 1028a5 (Aristotle, 1952d, pp. 547 - 550; 1989) and *Metaphysics* I 980a – 995a20 (Aristotle, 1952d, pp. 499 - 513; 1989).

Table 17 reveals, through the sources on which it is based, that such classifications as those given in the previous paragraph are employed by Aristotle in his definitions of three branches of theoretical philosophy, namely Physics, Mathematics, and Metaphysics ^{42KTS}.

Table 17: Three Subdivisions of Theoretical Philosophy within One of Three Divisions of Philosophy

Theoretical Philosophy			Practical Philosophy	Poetical Philosophy
The study of knowledge as an end in itself rather than the study of its practical applications.			The study of political Science and ethical action in the wider social and cultural domain: economics, strategy and rhetoric are included under this category.	The study of production (rather than action): a theory of art.
Physics	Mathematics	Metaphysics		
The study of material things which are subject to motion.	The study of that which is unmoved but also unseparated from matter.	The study of that which is unmoved but separated from matter (the transcendent).		
Source: Constructed by Ian Eddington from Copleston, F. (1966). <i>A History of Philosophy Volume 1 Greece and Rome</i> . (p. 277). London: Burns and Oats Limited; Jackson, H. (1908). <i>Aristotle, Aristotelianism</i> . (pp. 786 - 791). In J. Hastings (Ed.), <i>Encyclopaedia of Religion and Ethics</i> (Vol. 1). Edinburgh: T. & T. Clark; Aristotle. (1952). <i>Metaphysics</i> . (XI 7, 1064a30, p. 592; XI 1064b – 1064b5, p. 592; XI 7 1064a5 - 30, p. 592; VI 1025b25, p. 547; VI 126a10 - 1026a30, p. 548). In R. M. Hutchins (Ed.), <i>Aristotle</i> . (Vol. 8 (1)). pp. 495 - 626). Chicago: William Benton.				

For example, under Theoretical Philosophy, Physics “deals with the things that have a principle of movement in themselves” *Metaphysics* XI 1064a30 (Aristotle, 1952d, p. 592; 1989)^{42KTS}. It concerns that which is inseparable from matter but which is subject to movement, change widely defined as coming to be, being, and ceasing to be. It concerns the primary existing individuals of the natural world *Metaphysics* VI

1026a10-15 (Aristotle, 1952d, p. 548; 1989). When Aristotle writes of coming to be, being, and ceasing to be, he is writing about the bringing of form to matter, form's residing in matter, and form's departure from matter. In this manner he writes about change, of which, more later.

Mathematics in turn “deals with things that are at rest, but its subjects cannot exist apart” *Metaphysics* XI 1064a30 – 35 (Aristotle, 1952d, p. 592; 1989). Length, extension, surface are examples of its objects, and such objects, which are motionless, are considered as separate from matter although they do not exist separately^{A2KTS}.

Metaphysics as “the first science^{A2KTS} deals with things which exist separately and are immovable” *Metaphysics* VI 1026a15 - 20 (Aristotle, 1952d, p. 548; 1989). By concerning itself with the meaning of being which is unmoved, that is unchanging, but which is itself not sensible in the manner of the substance of the primary being of the categories, metaphysics is that cognitive playground in which human understanding confronts one of mankind's most challenging questions. This first Science^{A2KTS} is also called a theology *Metaphysics* VI 1026a 15 – 25 (Aristotle, 1952d, p. 548; 1989) and it consists of the study of being from the point of view of being itself, “being *qua* being” *Metaphysics* VI 1026a30 - 35 (Aristotle, 1952d, p. 458; 1989). It is the study of the transcendent as transcendence was understood before Kant.

To summarise, natural beings exist and are accurately and categorically^{A2KTS} known by humans. Aristotle predicates his whole classification of theoretical philosophy on states of natural being which exist independently outside of mind^{A2KTS}. Such independently existing being is the glue that binds the three divisions of theoretical philosophy, namely physics, mathematics and metaphysics^{A2KTS}. Metaphysics is bound because Aristotle's search for transcendent beings begins with existing physical beings some of which, the planets and their motions, subsequently serve as predicates for the existence of metaphysical beings. Human knowledge begins with perception of individual beings, and universals exist only in the mind. There does however remain some ambiguity about the states of being. Substance as categorical

being appears to be sensible and perishable, sensible and eternal, and ‘non sensible’ and eternal, a somewhat untidy finding.

Proposal (I)

Aristotle’s finding that substantial natural beings compounded of *form* and *matter* exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

Proposal (II)

Aristotle’s finding that metaphysical beings exist, and his explanation of how, through their extension in *nous*, they play a role in human understanding.

In what manner might Aristotle’s finding be untidy? The threefold classification of being said, in the integrating summary above, to inform the three divisions of theoretical philosophy is untidy when it is benchmarked against Aristotle’s fundamental notion of truth ^{42KTS} which

states that “... the same attribute cannot at the same time belong and not belong to the same subject [20] and in the same respect” *Metaphysics* IV 1005b20 (Aristotle, 1952d, p. 524, translator's square brackets; 1989). In the case under discussion, substance, the category in which the accidents inhere, is said to be both eternal and perishable, and both sensible and insensible, and such a position could scarce be Aristotle’s final word on the question. In particular, if substance can be non-sensible and eternal, something different again from the perishable sensible body of individual beings, then matter, thought of as the perishable body of individual beings, is not a sufficient categorisation of substance.

These enigmas are troublesome because they cloud a full articulation of Proposal (I) which must bring clarity of understanding to three fundamental tenets of being, namely, natural things or beings exist, natural beings consist of form and matter, and natural beings are brought to human understanding because form, transferred by a member of the species, brings definition to substrate matter ^{42KTS}. Further enquiry into these tenets is required because in logic, if not in metaphysics, the second tenet depends on the first, and the third tenet depends on the second. As a consequence, I turn to discussion of the sense in which Aristotle announces that beings exist by enquiring further into the categorical nature of substance.

I proceed in the manner now explained. First, on pages 214 to 215 I engage with Book IV of the *Metaphysics* (Aristotle, 1952d, 1989) where the importance of substance over matter is established and as a basis for more detailed articulation of being.

Secondly, respectively and collectively, beginning on page 215 I engage with Book VII of the *Metaphysics* (Aristotle, 1952d, 1989) and Books I and II of the *Physics* (Aristotle, 1952n, 2004) wherein it is revealed that each individual natural being of the substance row of the categories consists of form and matter; Book II of the *De Anima* (Aristotle, 1952b, 1957a) in which Aristotle discusses the soul as the form of the body and the principle of life in natural organic beings; and again Book VII of the *Metaphysics* (Aristotle, 1952d, 1989), wherein Aristotle analyses four causes of being.

The whole purpose of my commentary on the primacy of substance over matter, existence as form and matter, and the four causes of being is to explicate Aristotle's writing about being, on which, as intimated on page 206 his different usage of the

Proposal (III)
Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning.

Proposal (IV)
Aristotle's founding of Science as a process of induction and deduction based on objective understandings about natural objects, and his development of a logic which prescribed a procedure for reasoning in Science.

Proposal (V)
Aristotle's skilful bringing of such Science and Ethics to his political philosophy, and his argument in that philosophy that the Polis or gathering of humans, being based on natural law imperatives, was essentially stable and good.

term form in Proposal (I) rests. Such commentary occupies pages 214 to 236 of my enquiry and through this engagement I complete Level 1 articulation of Proposals (I) and (II) and begin detailed Level 1 articulation of proposal (III). Again, only after full Level 1 articulation of Proposals (I) through (V) is complete, can I finally summarise Level 2

articulation of the key-terms nuance Aristotle brings to the enquiry and apply it in Level 3 articulation of the Thesis Proposition Statements themselves.

FORM MATTER AND BEING

Aristotle's Argument for the Primacy of Substance over Matter

Thus, first, of the primacy of substance over matter, Aristotle quickly establishes the primacy of substance for the explanation of being.

So, too, there are many senses in which a thing is said to be, but all refer to one starting point; some things are said to be because they are substances, others because they are affections of substance, others because they are a process towards substance, or destructions or privations or qualities of substance, or productive or generative of substance, or of things which are relative to substance, or negations of one of these things [10] or of substance itself. It is for this reason we say even of non-being that it is non-being. *Metaphysics* IV 1003b5 - 10 (Aristotle, 1952d, p. 522; 1989)

and

Now there are several senses in which a thing is said to be first; yet substance is first in every sense—(1) in definition, (2) in order of knowledge, and (3) in time. *Metaphysics* VII 1028a30 – 35 (Aristotle, 1952d, p. 550; 1989)

and

... indeed the question which was raised of old and is raised now and always, and is always the subject of doubt, viz. what being is, is just the question what is substance? *Metaphysics* VII 1028b - 1028b5 (Aristotle, 1952d, p. 550; 1989)

Secondly, in discussing substance as form and matter, soul as the form of the body, and the four causes of being, Aristotle is quick to establish that substance is thought to exist in a number of ways, and in the *Metaphysics* (Aristotle, 1952d, 1989) in Book I, three kinds of habitual recognition of substance are specified.

We are in the habit of recognising, as one determinate kind of what is, substance, and in several sense, (a) in the sense of matter or that which in itself is not ‘a this’, and (b) in the sense of form or essence, which is that precisely in virtue of which a thing is called ‘a this’, and thirdly (c) in the sense of that which is compounded of both (a) [10] and (b). Now matter is potentiality, form actuality; of the latter there are two grades related to one another as e.g. knowledge to the exercise of knowledge.⁴ On the Soul II *Metaphysics* I 412a5 – 15 (Aristotle, 1952b, p. 642; 1989)

Aristotle names beings compounded of form and matter hylomorph beings. The ongoing differentiation of substance from matter which unfolds as this enquiry chapter progresses is complex and vexed. It is an outcome of, and reflects, my attempt to gain a more complete understanding of Aristotle’s Science ^{42KTS} which “... everywhere deals chiefly with that which is primary, and on which the other things depend, and in virtue of which they get their names” *Metaphysics* IV 1003b15 - 20, (Aristotle, 1952d, p. 522; 1989).

FORM MATTER BEING

Substance as Substrate Matter, Substance as Form and Substance as Hylomorph

I now investigate in turn, Aristotle’s explanation of each of the three habitual understandings of substance: substance as substrate matter, substance as form, and substance as hylomorph. In doing this I address the required clarification

⁴ As knowledge is thought *per se*, and passive, and thinking and reflection are the exercise of knowledge and active, so too there are active and passive aspects of form.

foreshadowed on page 213 and also complete the articulation of Proposal (I), namely

Table 18: Aristotle’s Four Causes of Being and Their Traditional Names

Cause	Explanation
Material Cause	“... that out of which a thing comes to be and which persists, is called ‘cause’, e.g. the bronze of the statue, the silver [25] of the bowl, and the genera of which the bronze and the silver are species” <i>Physics</i> II 194b24 (Aristotle, 1952n, p. 271; 2004).
Essential or Formal Cause	“... the form or the archetype, i.e. the statement of the essence, and its genera, are called causes” <i>Physics</i> II 194b25 - 30 (Aristotle, 1952n, p. 271; 2004): a lump of bronze becomes a statue of Thales by virtue of the formal cause—in this case the shape or form given the bronze by the activity of the artist: the formal cause is the shape not the artistic action which caused the shape.
Moving or Efficient Cause	“... the primary source of the change [30] or coming to rest, e.g. the man who gave the advice is a cause, the father is cause to the child, and generally what makes of what is made and what causes change of what is changed” <i>Physics</i> II 194b30 (Aristotle, 1952n, p. 271; 2004). In the example above given for formal cause, the activity of the artist is the efficient cause.
Final Cause	“That for the sake of which a thing is done, e. g. health is the cause of walking about.” <i>Physics</i> II 194b30 - 35, (Aristotle, 1952n, p. 271). The end sought: continuation and perfection of the species might be understood as a final cause of change, nature being careful of the type, not the individual. The final cause is (a) some being for whose cause an action is done, and (b) something at which the action aims <i>Metaphysics</i> XII 1072b - 1072b5 (Aristotle, 1952d, p. 602; 1989).
Source: Constructed by Ian Eddington from Aristotle. (1952). <i>Physics</i> . (II 194b15 – 195b30, pp. 271 – 272; II 194b24, p. 271; II 194b25 – 30, p. 271; II 194b25 – 30, p. 271). In R. M. Hutchins <i>Aristotle I</i> . Chicago: William Benton; Aristotle. (1952). <i>Posterior Analytics</i> . (II 94a20 – 95a10, pp. 128 - 129). In <i>Aristotle I</i> . Chicago: William Benton; Aristotle. (1952) <i>Metaphysics</i> . (I 983a, p. 501; XII 1072b – 1072b5, p. 602). In R. M. Hutchins <i>Aristotle I</i> . Chicago: William Benton.	

that an independent existence of hylomorphic beings is occasioned through form, which, via transmission through a prior member of the species, brings definition to substrate matter.

First, in respect of substance as substrate matter, Aristotle, in *Physics* III 192b10 – 193b15 (Aristotle, 1952n, pp. 268 - 70; 2004), argues that all generated beings, that is, all natural and manufactured beings, are said to be composites of form and matter. Such individual beings are classified as the primary existences of the substance row of the categories illustrated in Table 15 on page 207. The existence of such beings is predicated on qualities inhering in them. Form and matter as terms are not used in *Categories* (Aristotle, 1938a, 1952a) to explain being but in *Physics* (Aristotle, 1952n, 2004), matter is said to be “... just this – the primary substratum of each thing, from which it comes to be without qualification, and which persists in the result” *Physics* I 192a30 – 35 (Aristotle, 1952n, p. 268; 2004).

For example, in the case of natural living objects, matter might be tissue *per se*, tissue not further qualified as a horse, say, rather than tissue qualified as a giraffe. In the case of non-natural beings, that is manufactured goods like statues and columns, matter might, for example, be bronze *per se*, bronze not further qualified as a statue or a column as the case may be. Thus understood, matter is implicated in being: it is one of four identified causes of being outlined in Table 18 on page 216 and is

specified as the *material cause*. And the matter of the material cause is spoken of as proximate matter explained further in Table 19 on page 217.

The qualification Aristotle speaks of is that which allows the proximate matter of

Table 19: Working Definitions of Classes of Matter Mentioned by Aristotle

organic matter	Living matter, the matter of plants and animals, in which organs are apparent: the soul is the principle of life which distinguishes living natural bodies from non-living natural bodies ¹ . <i>De Anima</i> II 412a - 412b10 (Aristotle, 1952b, p. 642; 1957a). Form is responsible for the actuality of all natural bodies except that, in the case of organic bodies, soul, a special case of form, brings actuality.
non organic matter	Generated matter, bricks, bronze or matter such as rocks and stones.
proximate matter	That matter that is capable of being essentially enformed; that matter of the individuals existing in the substance row of the categories classification, that matter in which sensed accidents are said to exist— <i>Metaphysics</i> VIII 1044b, VIII 1044a15 – 1044b20 (Aristotle, 1952d, pp. 569, 568 - 569; 1989). Proximate matter is potentially a thing— <i>Metaphysics</i> IX 1048a25 – 1049b5, (Aristotle, 1952d, p. 573 - 574; 1989) and, through being enformed, becomes the body of a thing, notwithstanding that, in hylomorphic substances, form and body cannot be separated. For example the wood of a tree is potentially a bowl whereas the sunlight energy stored in the wood is not. The wood <i>per se</i> receives the form of the bowl, not the sunlight energy stored in the wood. Attempting to explain Aristotle in terms of post Aristotelian ideas of Science, in the manner just now attempted, is anachronistic and not without its own questions.
non proximate matter	Matter intermediate between original matter—which is, whatever it might be, a substance and the same for all things—and the proximate matter defined in the row above— <i>Metaphysics</i> VIII 1044a20, 1044a15 – 1044b20 (Aristotle, 1952d, p. 568 - 569; 1989).
Notes: (1) Unfortunately a contention about the manner in which soul enforms the matter of animal bodies leaves such attractively parsimonious statements of Aristotle’s hylomorphism wanting. Ackrill (2001) began a recent controversy when he argued that animal bodies—soul gives them life—remain recognisable as a particular member of a species immediately following death. Animal bodies cannot easily be treated in the manner of bronze say which between being contingently enformed in statue form as Thales and subsequently contingently enformed in statue form as Hero, is recognisable as neither. After death the body of the individual Thrasymachus is, for some time, recognisable as Thrasymachus.	
Source: Constructed by Ian Eddington from Aristotle. (1952). <i>De Anima</i> . (II 412a – 412b10, p. 642). Chicago: William Benton; Aristotle. (1952). <i>Metaphysics</i> . (VIII 1044a15 – 1044b20, pp. 568 – 569; IX 1048a25 – 1049b5, pp. 573 - 575). In R. M. Hutchins (Ed.), <i>Aristotle</i> . (Vol. 8 (1), pp. 495 - 626). Chicago: William Benton.	

tissue to be named a horse rather than a giraffe, or bronze to be named a statue rather than a column, and it is due to form, shape, *inter alia*, being an outward manifestation of form, of which more later. It is the qualification announced by the accidents of the categories.

Aristotle does not immediately provide a complete definition of form in his *Physics* (Aristotle, 1952n, 2004). Rather he announces that a full understanding of form must await “the primary type of science”^{42KTS} *Physics* I 192a35 (Aristotle, 1952n, p. 268; 2004), the metaphysics. It must “stand over until then” (ibid.) and can be found at *Metaphysics* XII 1072a15 – 1075a10 (Aristotle, 1952d, pp. 602 - 605; 1989) and where also substance is considerably differentiated from matter. In the *Physics* Aristotle confines his discussion of form to natural beings, beings capable of some kind of movement including change, and to generated and manufactured non-natural beings such as houses, paintings and statues.

All that I can glean from Aristotle so far is that first, individual existing beings, which are categorically and/or habitually known as substance, and whose existence is known by accidents, are composed of form and matter, secondly that matter as the substance of natural enformed bodies is habitually known as proximate material body, and thirdly that form, whatever it is, qualifies that proximate matter by giving it a name and making it knowable as the body of a particular existing thing.

Fortunately, elsewhere *On Generation and Corruption* II 238b30 – 333a15 (Aristotle, 1952i, pp. 428 - 431; 2007), Aristotle reveals that matter, that primary substratum for each thing, which constitutes the body of each individual organic being, is made up of particular organs and each of these organs consists of a particular combination of the four elements air, fire, water, and earth.

The four elements themselves are particular compounds of four qualities - hot, cold,

Table 20: Elements Expressed as Qualities

Elements	Qualities
fire	hot and dry
air	hot and wet
earth	cold and dry
water	cold and wet

Source: Constructed by Ian Eddington from Aristotle. (1952). *On Generation and Corruption*. (II 2-3 pp. 429 – 430). (H. H. Joachim, Trans. Vol. 10). Chicago: William Benton.

wet, and dry as outlined in Table 20. These four elements emerge from an indeterminate zone of potentiality which accepts the qualities. I was not aware of potential's role as the mother through which qualities beget the elements of material existence, until

finding the key Jackson's reference provided (H. Jackson, 1908, p. 788).

By virtue of this chain extending from the qualities through the elements to the "proximate matter" *Metaphysics* VIII 1044b (Aristotle, 1952d, p. 569; 1989) of the individual beings, all organic natural beings, and by extension natural inorganic beings, are initially beings in potential prior to their coming to be, being, and ceasing to be *Metaphysics* 1044a15 - 1045a5 (Aristotle, 1952d; pp. 566 - 69; 1989). The links of the chain, the various stages of coming to be between potential being, and the final proximate matter of the existing individual being, consist of non-proximate matter. Such matter, while it may not be discernible in the proximate matter of the individual, nevertheless underscores its being *Metaphysics* IX 1049a20 - 25, 1048b35 - 1049b5 (Aristotle, 1952d, pp. 574, 574 - 575; 1989). Presumably, the changing of non-proximate matter continues as ceasing to be progresses. The

ultimate or primary existence is thus a potential. This potential state is not just a universal something which can be temporarily assembled, *per se*, into the various individuals of the different species (H. Jackson, 1908, p. 788). Form must be present before substance is recognisable as an individual ‘this’ or ‘that’.

Such definition of the ultimate or primary matter as being *qua* potential, like the question of the nature of substance before it, begs further enquiry. In pursuing an answer to the question Aristotle switches his focus away from substance as materiality towards substance revealed as form, essence and cause. In following Aristotle’s change of focus I begin more detailed discussion of the second and third of the three notions of substance discussed earlier on page 215, substance as form, essence or cause, and substance as hylomorph. During this discussion I also address Aristotle’s four causes of being.

In discussion of the four causes of being in *Metaphysics* VII 1041a5 -1042a (1952d, pp. 565 - 566; 1989) Aristotle intimates that “substance is a principle and a cause” (ibid., 1041a5-10) and that when we are inquiring into being, inquiring into what a thing actually is, what makes a material body a particular specified thing, we are inquiring into the “cause” (ibid., 1041a25 – 30) of the thing, which cause is the “essence” (ibid., 1041a25 - 30) and this essence is the “form by reason of which matter is some definite thing: and this is the substance of the thing” (ibid. 1041b5 – 10). Form, so acting, is implicated in being and is known as the formal *cause* outlined in Table 18 on page 216. Substance as Aristotle here defines it is something other than materiality. It can thus also be essence or form which accepts materiality in some way, of which more later. The essence inherent in sensible particulars cannot be given by the material element because the material element is seen to be perishable *Metaphysics* VII 1039b – 1040a5 (Aristotle, 1952d, pp. 563 - 64; 1989)—again form gives essence, and tells us what the being is, matter allows numerical individualisation *Metaphysics* VII 1033a25 – 1034a10 (Aristotle, 1952d, pp. 556 - 557; 1989) and thus occasions plurality of the enformed or identified beings. Accidents help locate a particular individual within the plurality.

In particular, form exists eternally and is not produced by the begetter *Metaphysics* VII 1033b18 (Aristotle, 1952d, p. 556; 1989). Aristotle argues that:

it is obvious ... that that which has been spoken of as form or substance is not produced, but the concrete thing which gets its name from this is produced, and that in everything which is generated, matter is present, and one part of a thing is matter and the other form. *Metaphysics* VII 1033b15 – 20 (Aristotle, 1952d, p. 556; 1989)

and that “the begetter is adequate to the making of the product and to the causing of the form in the matter” *Metaphysics* VII 1034a5 (Aristotle, 1952d, , p. 557; 1989).

The last quote, which states that form is transferred by the begetter, and the

<p style="text-align: center;">Proposal (I)</p> <p>Aristotle’s finding that substantial natural beings compounded of form and matter exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.</p>
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paragraph content leading up to it, illustrates the nice difference between Aristotle and Plato and is germane to a second component of Proposal (I), namely that form is transmitted by a prior member of the species. Form in Aristotle

is not found through distant reminiscent noetic grasp of separately existing exemplars. Form, when given by a prior member of the species—Aristotle identifies the male—is an essence which ensures the continuation of the species. Aristotle’s form, the integrated characteristics transmitted by a former member of the species, which identifies an existing object for what it is, replaces Plato’s form, the template idea, which, through being accessible via reflection and recollection permits only an imperfect understanding of independently existing objects.

Aristotle agrees that the forms are eternal. They carry the *ἐντελέχεια*, the entelechy, or fullness or completeness of the being to the service of final cause—*De Anima* II 417b5 – 7, *Metaphysics* IX 1047a30, (Aristotle, 1952b, p. 648; 1952d, p. 572; 1957a, 1989; Bradshaw, 2004, pp. 13-19) and they operate in the here and now in the sub-lunar world. This act of begetting, the bringing of form to matter, as opposed to the form *per se*, is itself thus implicated in the process of being and coming to be, and is known as the efficient or moving cause outlined in Table 18 on page 216. In the case of manufactured goods the activity or efficient virtue of the artisan, the playwright, painter, or sculptor is implicated in transmitting form to the proximate matter.

If one were to ask for what purpose does efficient or moving cause act, Aristotle might answer that it acts in pursuit of, or under the influence of, final cause, that proper, final, and right state of being and place which constitutes the nature of the

enformed matter in question. In this sense the final cause of the acorn is the oak tree. In modern terms the final cause of evolution might be the survival, or even the perfection, of the species. Aristotle explains that in matters of natural Science, that is physics, “we think we have scientific knowledge when we know the cause, and there are four causes” ^{Δ2ΚΤΣ, Δ2ΑΡΣ} *Posterior Analytics* II 94a 20 (Aristotle, 1952p, p. 128; 1960a).

It is important to note that Aristotle allows that in some cases causes may collapse into one another. For example, he allows that formal cause and final cause may be one *Metaphysics* VIII 1044b (Aristotle, 1952d, p. 569; 1989). And in *Physics* II 198b15 – 30 (Aristotle, 1952n, p. 275; 2004) he intimates that in some cases explanation may have to rest on material and efficient cause, there being no final cause to be found. Such a position is consistent with a mechanical teleology in nature which complements the final or metaphysical cause, the unmoved mover, discussed on page 222 upon which Aristotle’s cosmology is based. Cosmology is used in this enquiry to signify the structure of the universe, the things in it and how they are related, rather than to the creation of the things and that structure themselves.

I provide, in this paragraph, a brief integrating summary and recapitulation. Things, substantial natural beings, exist. Matter, essence or form, and hylomorph are substances. In the categorical analysis, the primary beings of the substance row of the categories divisions are perceived as composites by virtue of substance and accidents. In the metaphysical analysis, individual existing beings consist of form, which is essence or substance, and matter or materiality, which as substance is the body—the divisible, changeable and perishable substratum of the existing individuals. Here form alone, substance as essence, allows matter to be given a particular name whereas in the categories, things, consisting of substance, become known through their accidents. In all, there are four causes of being, and scientific knowledge about beings emerges when the four causes of being are known. The previous sentence, tucked away as it is in the text of just one paragraph of this chapter, reiterates another of Aristotle’s fundamental tenets. By announcing that Science focuses on, and is reliable knowledge about, the four causes of

independently existing natural beings, Aristotle provides another building block for the subsequent work of this chapter ^{A2KTS}.

The recapitulation of the preceding paragraph is germane to the ongoing articulation of Proposal (I), particularly that part of the proposal which claims that existing things consist of form and matter and that existence is brought to human understanding because form brings definition to substrate matter. Still, thus far, articulation of this part of Proposal (I) remains incomplete because I have not yet addressed the mystery of how form and matter combine to make a whole, a one, a ‘this’, an adventure to which I now turn. I begin this adventure by first discussing metaphysical beings which are indispensable to the process by which organic bodies are fully enformed.

FORM MATTER BEING

Level 1 Articulation of Proposal (II) Begins Level 1 Articulation of Proposal (I) Continues

Aristotle finds that unchanging and incorporeal beings, metaphysical beings, exist.

Proposal (I)
Aristotle’s finding that substantial natural beings compounded of *form* and *matter* exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

Contemplation of these beings begets metaphysics ^{A2KTS} which, as Table 17 on page 211 reveals, is that branch of Aristotle’s philosophy in which he deals with the unmoved and ‘insensible’ or that which is named the transcendent. Such beings, as distinct from natural organic and inorganic beings capable of change, and manufactured beings, require that further account *Metaphysics* VIII 1044b5 – 10 (Aristotle,

Proposal (II)
Metaphysical beings exist, and, through their extension in *nous*, they play a role in human understanding.

1952d, p. 569; 1989) discussed on page 217. Consequently, working *a posteriori*, Aristotle identifies three such transcendent beings: a primary unmoved mover, subsidiary unmoved movers, and *nous*, the latter being the active part of the human mind.

In particular, in his *De Anima* (Aristotle, 1952b, 1984b), which as Table 21 reveals was part of his lectures on biology, but which now is considered part of his psychology, Aristotle pronounces that soul is a substance *De Anima* II 412a 10 – 20 (Aristotle, 1952b, p. 642; 1957a). In these discussions Aristotle, *inter alia*, provides further insights into the nature of substance as a composite of form and matter.

True to his trust in the senses, Aristotle searches *a posteriori* amongst existing individuals for evidence of the existence of those unmoved and insensible

Table 21: Mediaeval Classification of Aristotle’s Major Lecture Works

Logic	<i>The Organon</i> , including <i>Categories</i> , <i>On Interpretation</i> , <i>Prior Analytics</i> , <i>Posterior Analytics</i> , <i>Topics</i> , <i>On Sophistical Refutations</i>
Physics	<i>Physics</i> , <i>On the Heavens</i> , <i>On Generation and Corruption</i> , <i>Meteorology</i>
Biology	<i>History of Animals</i> , <i>On the Parts of Animals</i> , <i>On the Motion of Animals</i> , <i>On the Gait of Animals</i> , <i>On the Generation of Animals</i> , <i>On the Soul</i>
Philosophy	<i>Metaphysics</i>
Ethics and Politics	<i>Nicomachean Ethics</i> , <i>Eudemian Ethics</i> , <i>Magna Moralia</i> , <i>Politics</i> , <i>Economics</i>
Literature	<i>Rhetoric</i> , <i>On Poetics</i>
Source: Constructed by Ian Eddington from Jackson, H. (1908). <i>Aristotle, Aristotelianism</i> . (p. 787). In J. Hastings (Ed.), <i>Encyclopaedia of Religion and Ethics</i> (Vol. 1). Edinburgh: T. and T. Clark.	

metaphysical beings. He considered the observed “circular” movement of the earth, the planets and the heavenly bodies to be perfect and eternal—*Metaphysics* XII 1072b5 (Aristotle, 1952d, p. 602; 1989), *Physics* VIII 6, 258b5 – 260a20 (1952n, pp. 344 - 346; 2004)—and in order to explain those first circular and eternal movements he supposes a necessary unmoved mover. The unmoved mover is in itself good, and a first principle upon which “depend the heavens and the world of nature” *Metaphysics* XII 1072b10 (Aristotle, 1952d, p. 602; 1989). This unmoved mover which is exempt from matter, which exists eternally, and which is in essence operational, is pure act without potential *Metaphysics* XII 1071b – 1073a15, (Aristotle, 1952d, pp. 601 - 603; 1989).

The unmoved mover is attended by subsidiary unmoved movers and Aristotle’s whole supposition is very much predicated on the astronomy of his day. His planetary system is earth-centred and from this view, a disputed number of circular motions could be called up to explain the observed movements of the heavenly bodies. Eudoxus (c. BC 410 - 347) had found need for twenty-seven, allowing for five planets at four spheres each, one sphere for the fixed stars, and three each for the moon and sun; Callippus (c. BC 370 - 300) had found need of seven more to explain Eudoxus’ system, and Aristotle found need for fifty-five, of which forty-seven were indispensable *Metaphysics* XII 1073b1 - 1074a15 (Aristotle, 1952d, pp. 603 - 604; 1989).

Jackson explains the subsidiary unmoved movers thus:

... the other unmoved movents, though Aristotle does not say it, must needs be the thoughts of the prime unmoved movent. For at the end of *Metaphysics A*, criticising Speusippus on the ground that his system makes the universe 'episodical', Aristotle adds epigrammatically: 'Real existences [existing individuals] refuse to submit to a bad constitution: as Homer says, a plurality of kings is bad; let us have one king'. Plainly Aristotle supposes himself to escape this condemnation: and so he does, if the other unmoved movents are the thoughts of the prime unmoved movent; for 'mind and its thoughts are one and the same' (1072b 21, 1075a 3). (H. Jackson, 1908, p. 788, my square brackets)

The primary being, this prime unmoved mover, is thought thinking itself *Metaphysics XII* 1074b30 - 35 (Aristotle, 1952d, p. 605; 1989). Aristotle reveals, of which more later, that the active part of the human soul, in the form of pure act of mind, is a little bit of the eternal, a little bit of the pure act of the unmoved mover within us. In humans this pure act of mind is called *nous*. It accesses objects of thought, and complements a passive component of mind which serves to receive objects of thought *Metaphysics XII* 1072b20 (Aristotle, 1952d, p. 602; 1989). As earlier discussed on page 209, by virtue of sensation, perceptions accurately grasp, and become isomorphic with, existing objects. The mind's own internal thoughts about those isomorphic perceptions are the objects of thought and they become the currency of the active intellect. Aristotle implies that the unmoved mover, thought thinking itself, is a god *Metaphysics XII* 1074b30 – 35 (Aristotle, 1952d, p. 605; 1989) which, together with the subsidiary unmoved movers, attracts the materials of the universe and causes them to rotate. There is no suggestion that the prime unmoved mover created those materials in the first place. It is also instructive to recall the ancient Greek usage of the term god earlier explained on page 91. There, it is explained, for example, that love is a god because it continues to exist in the presence of the coming to be, being, and ceasing to be of the generative cycles. In short, mind, thought thinking itself exempt from matter and potential, and knowing only itself, is a first principle of being. This starting point is fundamental to Aristotle's whole system and is another of the building blocks for the subsequent work of this chapter. It is a foundation stone of Aristotelian thought.

The attraction by which Aristotle's god formed the world is a manifestation of god's perfection and goodness, and desire is somehow involved *Metaphysics XII* 1071b – 1072a15 (Aristotle, 1952d, pp. 601 - 02; 1989; Copleston, 1966, pp. 314 - 16).

Aristotle himself explains that god, as thought thinking itself, knows only itself and that it would not be wise to attempt to form a friendship with god. Such a god would not be able to return love given, and we could not love that god in the first place

Table 22: Beings Known to Aristotle

AREAS OF OPERATION	CLASSIFICATIONS OF BEING				
	<i>Natural</i>		<i>Artificial or Manufactured</i>	<i>Mathematical</i>	<i>Metaphysical</i>
<i>Kinds of Beings</i>	<i>Organic</i>	<i>Inorganic</i>			
Examples of Beings	animals and plants	rocks, water, sand	statues, houses, bricks, weapons	length, breadth, area, volume, angles, circles	prime mover and subsidiary unmoved movers and <i>nous</i>
Content of Being	form and (proximate) matter	form and (proximate) matter	form and (proximate matter)	no separate existence outside of the proximate matter to which they pertain	pure act without substance or potential
The Primary State of the Being	potential	potential	form and proximate matter	no separate existence outside of the proximate matter to which they pertain ¹	pure act without substance or potential
Notes: (1) Hume would much later declare “there never were a circle or triangle in nature” (Hume, 1902, p. 25). Source: Constructed by Ian Eddington from the chapter content.					

Magna Moralia II 1208b25 – 35 (Aristotle or another, 1915, n .p.; Copleston, 1966, p. 317; W. D. Ross, 1930, p. 184). Irrespective of these contentions, mankind possesses *nous*, a spark of that divine first principle of being, again that something which is eternal pure act separate from both potential and matter. Aristotle’s *nous* partakes of the human soul, which, as the form of the body, is a substance, but I have yet to discuss the special features of *nous* which enable partaking. Given that *nous*, which is able to partake of the human soul, is also at one with the unmoved mover which, in turn, is pure act without potential, *nous* must be a special case in itself and somehow different from the other rarefied metaphysical existences. I revisit this question about the human soul and its interaction with *nous* again on page 231.

I am now able to present in Table 22 on page 225 and its attendant text discussion a more complete explanation of the kinds of beings identified by Aristotle. There are physical or natural material beings such as rocks, trees, and animals. Some of these natural beings are known as organic beings such as trees and animals: they are, or in an earlier state, have been alive. Others are known as inorganic beings—rocks,

gemstones, metals—because they are without life. Beings such as bricks, bronze columns, houses, which are generated from organic and inorganic natural bodies, are known as artificial beings. A bed made of wood, leather, silver and ivory would be an example. All such natural and generated bodies exist outside of the mind. The primary state of natural beings is potential. The primary existence of generated beings is the proximate matter from which the being was generated, for example the wood of the carved bowl is the proximate matter of the bowl. There are also mathematical and metaphysical beings.

Mathematical beings such as areas, volumes, and shapes have no separate existence outside of the enformed proximate matter to which they pertain. Metaphysical beings, unmoved movers and *nous* are pure act having no component of potential. All natural and generated beings consist of form and matter.

The explanations given in the summarising activity of the preceding paragraph are once again germane to the unfolding demonstration of Proposal (I) namely, the manner in which natural beings are hylomorphic combinations of form and matter. I attempt a more complete demonstration of Aristotle's hylomorphism, beginning in the next paragraph. The content of the previous paragraph, and the chapter content from which it emerged, are also germane to, and partially complete, the demonstration of Proposal (II) namely, Aristotle's finding that metaphysical beings exist and that, through their extension in *nous*, they are essential to the occasioning of human understanding.

FORM MATTER BEING
Closure of Level 1 Articulation of Proposals (I) and (II)
Level 1 Articulation of Proposal (III) Begins

Using Table 22 and its commentary as a background I proceed to further explain the nature of substance as a hylomorphic composite of form and matter and the manner in which form and matter are said to interact. Because soul is a special case of form, I must, in order to give a more complete explanation of substance as hylomorph, first address Aristotle's psychology of soul, upon which the existence of *nous* as active mind is partially predicated. This excursion into soul will also allow completion of the Level 1 articulation of Proposals (I) and (II), and begin the Level 1 articulation of Proposals (III).

Given then that substance can exist as a combination of form and matter, that soul is

Proposal (I)

Aristotle's finding that substantial natural beings compounded of *form* and *matter* exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

Proposal (II)

Aristotle's finding that metaphysical beings exist, and how, through their extension in *nous*, they play a role in human understanding

Proposal (III)

Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning.

the form of the body, that *nous* is part of that which is pure act without potential yet doubles as the divine part of the soul, how do form and matter interact, both in general, and in the particular case of soul as the form of the body? I begin discussion of these questions in the next paragraph.

Aristotle, working *a posteriori*, predicates the existence of the soul on knowable feelings such as joy, anger, and courage *De Anima* I 403a15 - 20` , (Aristotle, 1952b,

Blurring Divisions of Soul?

In brief, the conscious mind emerges within the history of life regulation. Life regulation, a dynamic process known as homeostasis for short, begins in unicellular living creatures, such as a bacterial cell or a simple amoeba, which do not have a brain but are capable of adaptive behavior. It progresses in individuals whose behavior is managed by simple brains, as is the case with worms, and it continues its march in individuals whose brains generate both behavior and mind (insects and fish being examples). I am ready to believe that whenever brains begin to generate primordial feelings—and that could be quite early in evolutionary history—organisms acquire an early form of sentience. From there on, an organized self process could develop and be added to the mind, thereby providing the beginning of elaborate conscious minds. Reptiles are contenders for this distinction, for example; birds make even stronger contenders; and mammals get the award and then some. Most species whose brains generate a self do so at core level. Humans have both core self and autobiographical self. A number of mammals are likely to have both as well, namely wolves, our ape cousins, marine mammals and elephants, cats, and, of course, that off-the-scale species called the domestic dog. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain* (pp. 25-26). Random House Edition. (Damasio, 2010, pp. 25-26)

p. 632; 1957a), and upon other self-evident states such as nutrition, perception, imagination, desire and thinking. He confronts this array of states and discusses each in turn. He posits that nutrition is predicated on a vegetative domain of soul, perception on an animal domain, and thinking, as reasoning, on a rational domain. He arranges these domains into a hierarchy and, in further elucidation of that hierarchy, he provides a detailed explanation of the nature of the soul's

constitution. He makes the soul the form of the body thereby giving it a central position in his explanation of hylomorphic organic being.

By way of general definition Aristotle announces that soul is “the first grade of actuality of a natural body having life potentially in it” *De Anima* II 412a25- 412b (Aristotle, 1952b, p. 642; 1957a) and “the first grade of actuality of a natural organised body” *De Anima* II 412b5 (Aristotle, 1952b, p. 642; 1957a). As partly revealed in Table 22 on page 225, natural inorganic bodies are individual bodies of

the physical realm, those capable of movement and change broadly defined, for example rocks or water which may become hot or cold or which may change in colour. Natural organised bodies are living bodies: plants and animals. The first faculty of the soul, nutrition, differentiates organised bodies from non-organised or inorganic bodies, those not alive, and both kinds of bodies are known hylomorphically through form and matter.

Understood in this way, the soul is the form of the organized body and is a principle of life. It is a “*substance* [italics added] in the sense in which it corresponds to the definitive formula of a thing’s existence” *De Anima* II 412b10 – 15 (Aristotle, 1952b, p. 642, my square brackets; 1957a). Aristotle’s general position on hylomorphic beings is that the form, in this case the soul, is not separable from the body *De Anima* II 413a - 413a5 (Aristotle, 1952b, p. 643; 1957a). But, as the discussion of his detailed definition of soul below reveals, he then proceeds to set up the possibility of eternity for part of the soul by allowing that elements of it may not be the actuality of any part of the body—*De Anima* II 413a5 - 10`, 413b25 – 30 (Aristotle, 1952b, pp. 643, 643 - 644; 1957a) and that the power to think, *nous*, may exist separately from the body *De Anima* II 413b25 - 30 (Aristotle, 1952b, pp. 643 - 644; 1957a). I visit the question of just how *nous*, which is pure act without potential, partakes of the soul, a substance, on pages 229 to 231.

Table 23 on page 230 provides key information about the logic underlying Aristotle’s detailed definition of soul. The soul is a hierarchy of three primary faculties of ability: nutrition, perception, and cognition this latter understood as thought and reason. Imagination *De Anima* III 427b15 – 4029a10 (Aristotle, 1952b, pp. 660 - 661; 1957a), and desire *De Anima* III 433b - 443b5 (Aristotle, 1952b, pp. 664 - 66; 1957a) are subsequently admitted as important faculties, or abilities, of soul—*De Anima* III 432a15 – 433b30 (Aristotle, 1952b, pp. 664 - 66; 1957a).

Nutrition is the primary faculty of the soul since “nothing except what is alive can be fed [and] what is fed is the besouled body, and just because it has soul in it. Hence food is essentially related to what has soul in it” *De Anima* II 4 416b 10 (Aristotle, 1952b, p. 646, my square brackets; 1957a). Living bodies, that is ensouled bodies, require the nourishment food gives. Food is inalienable to life and food as

nourishment relates to *living* body which body is living because it is first nourished by the soul. The quotation from Aristotle in the opening sentence of this paragraph, and its accompanying explanation, establish nourishment as a natural right emerging from natural law imperatives of physiology. Such a position is compatible with the totem ritual and place nourishment dimension in the origins of Homeric values themselves, and their journey to, and enshrinement in, the political philosophy of Plato's *Republic* (Plato, 1952r, 1969a) discussed in Chapter 1.

Perception, which separates animals from plants, is needed by animals to allow them to seek out and acquire nourishment. So configured, perception contains, or at least is closely associated with, a capacity for discrimination so that it is not entirely passive.

Perception is occasioned through sensory activity. Such sensory activity is preconfigured towards detecting the qualities, that is, the accidents of existing individuals and because of its link to them, perception is distinguished from mind. Since humans are subsequently to be distinguished from other animals because they, those humans, are said to be capable of reason, presumably a non-human animal, when it moves to eat the food it perceives and desires, of which more later, is somehow not thinking.

Aristotle explains the mechanics of perception. Perception is a kind of change which occurs when sensory organs are altered *De Anima* II 416b30 – 35 (Aristotle, 1952b, p. 647; 1957a) in such a manner that they become like the thing sensed by taking on its form *De Anima* II 418a - 418a10, 424 10 – 25, II 424 15 – 25 (Aristotle, 1952b, pp. 648, 654, 656; 1957a), a process germane to the ongoing articulation of Proposal (I). Affecting agent and affected organ must be mutually compatible before a transfer of form can occur and enable perception. Mind, understood as *nous*, reason, intellect, as earlier mentioned, separates mankind from other animals. It is that "...part of the soul with which the soul knows and thinks" ^{42KTS} *De Anima* III 429a10 (Aristotle, 1952b, p. 661; 1957a).

At *Nicomachean Ethics* VI 1143a20 – 1143b15 (Aristotle, 1934; 1952g, pp. 392 - 393), Aristotle also predicates mind on the knowable activities of reflection, and strategising, and on purposeful self-directed action. Human thinking, like perception

before it, is said to occur when an intellectual faculty receives a form *De Anima* III

Table 23: Attributes of Soul

Hierarchy of Faculties	Generic Names of the Faculties	Manifestations	Differentiating Factor
nutrition	vegetative	nourishment and limited movement	Nourishment is needed for life and helps explain growth understood as coming to be, being, and ceasing to be.
nutrition + perception	animal	nourishment sensation movement	Perception: is needed by animals to locate the food which permits nutrition and for other reasons necessary for life— <i>De Anima</i> , III 434a30 - 434b15 (Aristotle, 1952b, p. 667; 1957a).
nutrition + perception + mind	human or intellectual	nourishment movement sensation reason	Reason, understood as mind, is needed to enable understanding and knowledge— <i>De Anima</i> III 429a10 – 30 (Aristotle, 1952b, p. 661; 1957a).
lacuna			
<i>Nous</i> which partakes of soul in some manner	divine		active mind from without
Source: Constructed by Ian Eddington from Aristotle. (1952). <i>Metaphysics</i> . (VI 1 1026a4 - 6, p. 548). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . Chicago: William Benton; Aristotle. (1953). <i>De Anima</i> . (II 412b10 – 15 p. 643; II 413a - 413a10, p. 643; II 413b25 – 30, pp. 643- 644; III 427b15, pp. 660 - 61; III 433b - 443b5, pp. 664 - 66; III 12 434a20 - 434b18, p. 667; III 3, pp. 659 - 661; III 9 and 10, pp. 664 - 666; II 4 415a25, p. 645; II 5 416b30 - 35, p. 647; II 5 418 a – 418a5, p. 648; II 10 and 11, pp. 653 - 656; III 4 428a – 428b10, pp. 660 - 661; III 4 and 5, pp. 661 – 662; 434b, p. 667). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . Chicago: William Benton; Aristotle. (1952). <i>De Sensu</i> . (I 436b10 – 15, p. 673). In R. M. Hutchins <i>Aristotle I</i> . Chicago: William Benton.			

429a10 – 20 (Aristotle, 1952b, p. 661; 1957a) and mind is made like its object of thought, a process also germane to articulation of Proposal (I). Once again, form, and the intellectual faculty receiving it, must be compatible for thinking to occur. I would prefer to know more about this question. My qualification notwithstanding, Aristotle posits that when sensation’s product is delivered to, and unpacked by, passive

Proposal (I)

Aristotle’s finds that substantial natural beings compounded of *form* and *matter* exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.

perception, it is an isomorph of the thing sensed, a swan say, and subsequently when mind reflects on that product of perception and is made like it, made isomorphic to the isomorphic percept of the real independently existing individual, in this case a swan,

the way in which the mind knows the form is limited but reliable. Presumably the mind does not know the full story for then much of Aristotle’s logic, Science and Ethics would be superfluous and there might be little left unknown to humans. This two-fold process of knowing is the mechanism behind the form and matter understanding of hylomorphic being in Proposal (I).

Aristotle provides two important insights about mind. Mind as differentiated from form or soul is not “blended with the body” *De Anima* III 429a20 - 25 (Aristotle, 1952b , p. 661; 1957a), there being no bodily organ which corresponds to it, and mind “... before it thinks, [is] not actually any real thing” *De Anima* III 429a 20 – 25 (Aristotle, 1952b, p. 661, my square brackets; 1957a). In this way active mind as

<p>Proposal (II)</p> <p>Aristotle’s finding that metaphysical beings exist, and his explanation of how, through their extension in <i>nous</i>, they play a role in human understanding.</p>

nous is in, and of itself, something from without and it has the same state as the unmoved mover, that is, pure act. Without the emancipation of *nous* from the unmoved mover, active mind is impossible and this

condition advances the articulation of Proposal (II).

In this paragraph and the next I provide a summarising recapitulation. First hylomorphic substances consist of form and matter and become known when active mind receives the passive forms. Secondly, there is, within hylomorphic substance, a hierarchy of enform-ment. In particular, artificial bodies become “a this”, for example a bowl or a column, through the act of the artisan, and such bodies are accidentally or contingently enformed. Such bodies qualify as substances by virtue of the underlying matter upon which the artisan worked, the wood or the bronze as the case may be. In such cases the underlying matter is more rightly called substance. Thirdly, soul as a special case of form, is the actuality or entelechy, the principle of life which separates the animate from the inanimate. Animate bodies move themselves from within while inanimate beings are “moved” from without – moved by some external agent. Uluru for example might change colour, that is, move, in this manner.

This hierarchy of the actualisation of matter in hylomorphic beings is summarised in Table 24 on page 232. Inanimate natural beings are true substances, true composites of form and matter.

So too are animate natural beings except that they are enformed by the soul, part of which, as *nous*, as active mind, might be a metaphysical and incorporeal substance that comes from without—a substance which might contain an element which corresponds with no part of the body. In general, forms, which are eternal, serve final cause, which is eternal. *Nous*, which is essential to the whole process of how beings

become known, and to scientific knowledge^{A2KTS} in particular, is pure act from without,

Table 24: Kinds of Enform-ment

Attributes of Form	Kinds of Substances		
	natural		artificial
divisions of substance	<i>animate</i>	<i>inanimate</i>	
enforming agent	soul as form	essence as form	art as form
nature of enform-ment	Essential ⁽¹⁾	essential	contingent, accidental

Notes: (1) Ackrill's contention about essentially enformed animate bodies is again acknowledged.

and I would fain know more about it. I would better know the mechanics of how form and matter interact, exactly what happens when proximate substrate matter receives essence, what actually happens at the physical level when form allows matter to become 'a this.' Neuroscience today, it appears, continues to find the making of mind a difficult and intriguing question (Damasio, 1995, 1999, 2003). Irrespective of Damasio's qualification, the transmission of form, serving as it does the eternal final cause in nature, renders Aristotle's system consistent with natural law.

The recapitulation above and the relevant commentary leading up to it complete the articulation of Proposals (I) and (II) until I revisit them again in discussion of Proposal (V). I thus proceed on the basis that existing natural beings exist, which beings, consisting of actualising form and substrate matter, are validly brought to human understanding when divine *nous* receives the objects of perception.

**FORM MATTER BEING
Level 1 Articulation of Proposal (III) Begins**

Before completing this long discussion about form, matter and being which began on page 213, I first discuss two remaining faculties of the soul, *viz.*, imagination and desire. In so doing I sketch out in general terms, the manner in which the theoretical philosophy and practical philosophy of Table 1 on page 18 are linked and thus begins articulation of Proposal (III), Aristotle's identification of Ethics as act informed by practical wisdom under the aegis of scientific reasoning^{A2KTS}.

I first discuss imagination. Shields (2003, n.p.) provides a succinct discussion on Aristotle's definition of imagination and in writing this paragraph I am indebted to the clarifications his work afforded. Aristotle defines imagination as "that in virtue of which an image arises for us" *De Anima* III 428a - 428a5 (Aristotle, 1952b, p. 660; 1957a) and although he links imagination to perception *De Anima* III 429a (Aristotle,

1952b, p. 661; 1957a), he does not give imagination the same standing as mind or belief *De Anima* III 428a15 - 428b10 (Aristotle, 1952b, p. 660; 1957a). Rather, he finds it functioning in humans and in some other animals as an activity of soul which is implicated in dreams, memories, images and image recall, motivation and action *De Anima* III 428a - 429a10 (Aristotle, 1952b, p. 660 - 661; 1957a). Although imagination is an important human faculty it does not appear to be heavily implicated in Aristotle's explanation of being. Consequently, I do not discuss it further.

I now, second, discuss desire, that state Plato implicated in the structuring of the system of the planets *Timaeus* 30a-d (Plato, 1925h; 1952w, p. 448), which also catches Aristotle's attention. Because animals are sensate beings Aristotle allows that they are capable of desire which is also taken to be a manifestation and faculty of soul. The existence of desire is predicated on everyday examples of purposive or goal directed action whereby animals of all kinds move to obtain food, or in other ways to maintain life.

Aristotle finds no one cause, no one mental faculty sufficient to explain purposive action and/or the various motions which sometimes appear to accompany it. Rather such motion, and the purposive or goal directed action it appears to facilitate, is explained in terms of mind influenced by appetite *De Anima* III 432b14 - 433a5 (Aristotle, 1952b, p. 665; 1957a). It is against such an explanation that Aristotle states that it is clear that "such power in the soul as has been described, that is, that called appetite, originates movement" *De Anima* III 433a30 - 433b (Aristotle, 1952b, p. 666; 1957a), wish and desire being forms of appetite *De Anima* III 433a20 - 30 (Aristotle, 1952b, p. 666; 1957a). Elsewhere Aristotle qualifies this statement by noting that some people, he calls them continent people, desire a thing but do not move to attain it, and such restraint indicates that even desire alone is a questionable explanation of movement. He finds temporary respite from this impasse by arguing that motion, and its accompanying purposive action, are occasioned by desire and a state of mind called practical thought, henceforth practical wisdom,^{42KTE} acting together—*De Anima* III 433a5 - 20 (Aristotle, 1952b, p. 665; 1957a) but with desire providing the fuel —*De Anima* III 10 433a15 - 20 (Aristotle, 1952b, , p. 665; 1957a). Practical wisdom, a term I continue to use throughout this enquiry, is also known as

prudence, and it is a prominent English translation of the Greek φρόνησις or *phronesis*, of which more later.

Practical wisdom is, in *Nicomachean Ethics* III 433a15 – 20 (Aristotle, 1934; 1952g, p. 665) revealed to be an intellectual virtue of the calculative or practical soul^{AKTE}. The presence of practical wisdom in humans is the basis upon which Aristotelian practical or ethical philosophy is founded. *Nous*, from without, is implicated and, *inter alia*, existing physical objects are desired, and in this manner metaphysics is linked to physics and Ethics^{AKTE}. Movement, or absence of it, is a recurring theme in both theoretical and practical philosophy. Aristotle's system is thus demonstrated to be a unified whole and this claim is highlighted as yet another building block for the subsequent work of this chapter. I further discuss, *inter alia*, practical wisdom's central importance in Ethics beginning on page 236 but for clarification purposes, in the next eight paragraphs extending to page 236, I sum up Aristotle's position on form, matter and being

Four kinds of being exist: natural beings, mathematical beings, metaphysical beings, and artificial or manufactured beings.

Depending on whether or not they possess life, existing natural beings may be either organic, or inorganic, and they consist of form and matter. Soul, which is a special case of form, is the principle of life which differentiates the living beings from the non-living beings. Natural organic beings may be arranged upwards in an integrating hierarchy from vegetative through animal to intellectual-human, each lower level in the hierarchy being a subset of the level immediately above it. Nutrition is a specific faculty of soul which separates organic beings from inorganic beings, and amongst organic beings perception further separates the animal from the vegetable while the ability to reason further separates again the intellectual-human from the lower animals. The perceived matter of all actual natural beings is its enformed proximate matter and all such beings in their primary state exist in potential. The primary existence of being is potential. Form actualises, makes proximate matter a 'this' or a 'that', while matter allows numerical individuality of such 'thisness' and 'thatness'.

Metaphysical beings, described as pure act without potential, also exist in a hierarchy. There is a prime unmoved mover, a secondary unmoved mover, or movers, and *nous*, active human thought, active mind. Irrespective of their rarefied nature, one of them, *nous*, is in some yet unexplained way, able to partake of the human soul and in so doing allows human perception of, and knowledge about, independently existing natural beings.

Such cognition, *nous* occasioning active thought about existing bodies, occurs through a two-step process involving first the largely passive receipt of the forms by perception, and secondly, the active receipt of objects of thought, isomorphic copies of the forms, through reflection and reason. Perception of natural beings occurs at the level of their independently existing individuals while universals exist only in the mind. The prime unmoved mover, thought thinking itself, which Aristotle pronounces a god, which exists nowhere in actuality before thinking, which is fixed with structuring the world, but not creating it, and which as pure act without potential, is a first principle of being. The forms, transmitted through perception and reflection, are eternal, and are transmitted in accordance with the natural law ordained by final causes which, may, presumably answer the structural imperatives of the first principle of being. Desire is somehow implicated in the process by which the unmoved mover attracts objects, such that cosmology is somehow predicated on desire.

Mathematical beings like area and length are at rest. They are unchanging and in a sense eternal but they are inseparable from the changing natural material beings to which they pertain. They are a kind of half-way house between the physical and metaphysical beings. Manufactured beings come to be when artisans transmit form to matter: through crafted plot, words become a play, through carving to design, ivory is formed into a comb.

Scientific knowledge of beings is knowledge of the four causes of being^{42KTS}.

In humans, *nous*, as active thought proceeding under the influence of desire and the counsel of practical wisdom, produces purposive or goal directed activity and movement^{42KTE}. *Nous* thus also has an ethical dimension^{42KTE}. Existing beings are thus

linked metaphysically to Science through the four causes in natural law and to the

<p style="text-align: center;">Proposal (III)</p> <p>Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning</p> <p style="text-align: center;">Proposal (IV)</p> <p>Aristotle's founding of Science as a process of induction and deduction based on objective understandings about natural objects, and his development of a logic which prescribed a procedure for reasoning in Science</p>
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purposive action of ethical behaviour through practical wisdom in the everyday affairs of life^{A2KTS, A2KTE}.

As discussed earlier on page 206 Aristotle's definition of being is indispensable to his discussion on

Science and Ethics. Before proceeding to specific discussions of Science and Ethics I first sum up the Level 2 articulation of these terms contained in my discussion of form, matter and being. Thus: metaphysics, a theology, mathematics and physics, in so far as they are all implicated in understanding the nature of being, are named sciences. Science is one of two ways by which truth can be separated from falsity. Intuition, as Aristotle defines it, is the other way. Scientific understanding of being exists when the four causes of being are known. Ethics is active mind realising goal directed activity under the influence of desire and the counsel of practical reason.

As foreshadowed on page 234 I now turn, in the next section, to further discussion, among other things, of practical wisdom's central importance in Ethics. I proceed consecutively through specific discussions of Ethics and Science, before demonstrating in discussion of Proposal (V), how each informs the political philosophy of the *Polis*. In discussing Ethics I complete Level 1 articulation of Proposal (III) and in discussing Science I complete Level 1 articulation of Proposal (IV). This discussion of Ethics and Science occupies pages 236 to 263 of my enquiry. Level 2 articulation is clearly discernible within it and for this reason I cease employing superscripts to identify its coincident presence. The Level 2 articulation continues to be particularly important for subsequent Level 3 articulations of Thesis Proposition Statements (2) and (3).

ETHICS
Continuing Level 1 Articulation of Proposal (III)

Aristotle addresses the human ethical condition as though it were an extension of soul. He brings a very practical and teleological perspective to his analysis by questioning again, mankind's purpose, and by seeking to identify anew those human

virtues germane to the attainment of that purpose. In particular, Aristotle finds mankind's purpose, its *arete* in the sense earlier established in the case for Plato, to

<p style="text-align: center;">Thesis Proposition Statements (2) and (3)</p> <p>(2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.</p> <p>(3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.</p>

be happiness with virtue *Nicomachean Ethics* I 1097b - 1098a 20 (Aristotle, 1934; 1952g, pp. 342 - 43), or happiness with justice and virtue *Nicomachean Ethics* I 1098b30 - 1099a30 (Aristotle, 1934; 1952g, p.

344). This goal of mankind is the highest because it is desired for its own sake and other goods are desired for its sake and not vice versa *Nicomachean Ethics* I 1094a - 1094a25 (Aristotle, 1934; 1952g, p. 339).

Mankind's work is thus effected through three conditions: justice, happiness and virtue and I proceed to outline what Aristotle means by each of them.

Justice, Aristotle argues, means either general justice or particular justice. General justice is obedience to the law—virtue towards others under constitutions which respect natural rights and which serve the common good. Particular justice is that which is equal when measured against general formulae which define what it means for the State to be fair in the distribution of its resources and honours to citizens, and what it means for those citizens in turn to be fair in their exchanges with one another. The subdivisions of particular justice are distributive justice and commutative justice. Distributive justice relates to the distribution of benefits from the state to the individuals, based on merit. Commutative justice relates to equality of exchanges between citizens. Some exchanges of commutative justice are involuntary on the part of one of the parties, for example murder, rape, maiming are of this kind. In such cases commutative justice has to allow for rectification of inequalities, that is, the injustice has to occur before equality can, in some way, be restored if indeed it can ever be restored in such cases as murder and maiming. It is tempting to find in Aristotle's justice, an early development of what might be now understood as the domains of civil and criminal law.

Table 25 on page 239 provides more information about Aristotle's definition of justice. The laws of specific justice are themselves unjust if they are enacted under a

deviant constitution, such constitutions being those predicated on private benefits for rulers, whether democrats, oligarchs or aristocrats, rather than on benefit for the common good.

Aristotle also speaks of political justice which is part natural, “that which everywhere has the same force and does not exist by people’s thinking” *Nicomachean Ethics* V 1134b20 (Aristotle, 1934; 1952g, p. 382) and part legal, “that which is originally indifferent, but when it has been laid down is not indifferent, e.g. that a prisoner’s ransom shall be a mina” (ibid). Under political justice the constitution cannot be regarded as the arbiter of justice if it violates natural law and rights. Natural rights, unlike civil rights, are not conferred by the state. For example the state should not legislate that each soldier should fight with his right hand or that the citizen shall live on biologically insufficient amounts of water. The state cannot rescind natural rights which inhere in the individual. Just acts are those which “tend to produce and preserve happiness and its components for the political society” *Nicomachean Ethics* V 1130b15 – 20 (Aristotle, 1934; 1952g, p. 377). Lawful or just acts are thus those which are for the common good or the good of others: unjust acts do injury to others or despoil society. “Justice alone of the virtues ... is thought to be ‘another’s good’, because it is related to our neighbour” *Nicomachean Ethics* V 1130a (Aristotle, 1934; 1952g, p. 377) and of all the virtues justice contains a notion of duty.

In general terms:

it is plain that just action is intermediate between acting unjustly and being unjustly treated ... [so that] ... justice is a kind of mean, but not in the same way as the other virtues, but because it relates to an intermediate amount, while injustice relates to the extremes”. *Nicomachean Ethics* V 1133b30 - 1134a (Aristotle, 1934; 1952g, p. 381, my square brackets)

I comment further on the difference between Aristotle’s definition of justice and his definition of the moral virtues in a subsequent discussion about the moral virtues themselves.

A perusal of Table 25 reveals that the principles upon which justice rests are unambiguous. These principles—obeying the law and treating others fairly in the case of general justice; State awards based on merit in the case of distributive justice; and fairness based on either equality of conditions of exchange or equality through

Table 25: Kinds of Justice

DESCRIPTORS	CLASSIFICATIONS OF JUSTICE			
Name	General Justice		Particular (Specific) Justice	
General Definition	Fulfilling the whole of the law <i>Nicomachean Ethics</i> IV 1130a - 1139b30` (Aristotle, 1934; 1952g, p. 378) under correct constitutions, that is, constitutions which are disposed to the common, not the private good.		A special virtue alongside (similar but different to) the moral virtues: rectification according to certain kinds of proportion. "For it is by proportional requital that the city holds together" <i>Nicomachean Ethics</i> V 1132b 30 - 1133a (Aristotle, 1934; 1952g, p. 380)	
Sub Division 1	n. a.	<u>distributive justice</u> (fairness in <i>distribution</i>)	<u>commutative, corrective, remedial justice</u> (fairness in <i>exchange</i>)	
Definition	n. a.	Whole to part: justice in the domain of how the whole (the state) relates to the part (the citizen).	Part to part: justice in the domain of how part of the state, that is one citizen, interacts with another part of the state (another citizen) "which plays a rectifying part in transactions between man and man." <i>Nicomachean Ethics</i> 1130b30 - 1131a10 (Aristotle, 1934; 1952g, p. 378), justice which is corrective in the case of contractual wrongs arising out of fraud or force.	
Subdivision 2	n. a.	n.a. ⁽³⁾	<i>voluntary transactions</i>	<i>involuntary transactions</i>
Domain	n. a.	The distribution of honour, property, money or anything else which is divisible amongst those who share in the constitution <i>Nicomachean Ethics</i> V 1130b30 - 1131a (Aristotle, 1934; 1952g, p. 378).	Sale, purchase, loan for consumption, pledging, loan for use, depositing, letting when these are entered into voluntarily between parties.	Clandestine: theft, adultery, poisoning, procuring, enticement of slaves, assassination, false witness Violent: assault, rape, imprisonment, murder, robbery with violence, mutilation, abuse, insult
Criterion	Treating others as yourself, complete virtue in relation to your neighbour, virtue entire.	Fairness, just deserts based on merit! <i>Nicomachean Ethics</i> V 1131a35 (Aristotle, 1926; 1952g, p. 378)	Fairness, equality of conditions.	Restitution For involuntary transactions of a "civil" nature: being made quits, For involuntary transactions of a "criminal" nature: finding a requital (punishment) which fits the crime.
Mathematical Proportion	n. a.	Direct geometric proportion <i>Nicomachean Ethics</i> V 1131b10 - 15` (Aristotle, 1934; 1952g, p. 379). Citizens are not born or treated as equals and commodities are distributed between citizens in proportion to their, the citizen's, relative merits. If the proportion is violated injustice occurs because one has more and the other less than their just share. If A is ten times more meritorious than B then A should be awarded 10 times the honours or of the land distribution ⁽¹⁾ .	Arithmetic mean <i>Nicomachean Ethics</i> (Aristotle, 1934; 1952g, V 1131b30 - 1132a5, p. 379). Citizens <i>per se</i> are treated as equals and commercial exchange is just when there is mutual reciprocity in the values of the products exchanged. For example if in one hour A produces 6 pairs of sandals and B produces one bronze lamp then justice is violated if A and B do not exchange sandals and lamps such that A gets one lamp for every 6 pairs of sandals B gets ⁽²⁾ .	Arithmetic mean <i>Nicomachean Ethics</i> V 1132a25 - 1132b (Aristotle, 1934; 1952g, pp. 379 - 80).

Notes: (1) Aristotle accepts that merit is a subjective term: under oligarchy it may mean one thing and under democracy another and so on *Nicomachean Ethics* V 1131a35 - 30 (Aristotle, 1926; 1952g, p. 378): the principle is consistent. (2) There is no suggestion in the example used that Aristotle did or did not formally institute a labour theory of value. (3) n. a. = not applicable.

Source: Constructed by Ian Eddington from: Aristotle. (1952). *Nicomachean Ethics*. (I 1101b10 – 1103a10; V 1129b14 - 19, V 1129b25 – 1130a13 – b8, 1130b 17 - 29, 1130b30 - 34, 1131b27 - 33, 1132b11, 1132b29, 1133a5 - b29, 1133b16 - 23, 1133b30 – 1134a15, 1134a24 - 1134b17, 1135a14, 1136a10 – 1136b14, 1136b15 – 1137a 4, 1138b5, 1138a28 – 1138b4, 1138b5 – 13, 1144a11 - 20.; VIII 1155a22 - 28). 1158b12 - 33, 1253a14 – 15; VIII 1159a15 – 1160b23, 1161b11, 162a35-1163b25, 1287a10 – 23. In R. M. Hutchins (Ed.), *Aristotle II*. Chicago: William Benton; Ritchie, D. G. (1894). (pp. 185– 92). *Aristotle's Subdivisions of Particular Justice*. In *The Classical Review* Vol. 8, No 59. Cambridge: Cambridge University Press.

restitution respectively for voluntary and involuntary transactions under commutative justice—are simple to understand and in the case of particular justice even invoke mathematical principles of proportion. Even given these caveats of unambiguity and simplicity, application of the principles of justice—for example determining units of merit for use in distributive justice, or fixing the manner in which money might be used as a medium of exchange under voluntary commutative justice, or finding a punishment which correctly compensates the crime, in the case of involuntary commutative justice—was troublesome for Aristotle. It remains so in extant societies. How, for example, can one compensate a murdered person?

Irrespective of these problems the principles on which Aristotle bases his justice are unambiguous and provide workable criteria to determine whether or not states, and

<p>Proposal (III) Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning</p>
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distribution, exchange and restitution within them, are just. Aristotle's identification of the divisions of justice and their governing principles is relevant to the

ongoing articulation of Proposal (III): justice as virtue is a practical affair which inheres in act, and justice is violated when clearly expressed conditions which prescribe it are not fulfilled. Certainly the definition that just states serve the common good rather than the private good involves what post-moderns call a value statement, but once the definition is accepted there is room under that definition for an element of disinterested determination of which constitutions and states might be just.

In particular once the definitions of distributive and commutative justice are accepted there is room for disinterested determination of which awards of the State are to be judged good, which exchanges are equal and just, and which compensations justly rectify the aberrations of involuntary exchange.

I now turn to discussion of the second and third conditions affecting mankind's *ergon*, namely happiness and virtue.

Happiness, Aristotle argues, is "the best, noblest and most pleasant thing in the world" *Nicomachean Ethics*, I 1099a25 (Aristotle, 1934; 1952g, p. 344). But chance and good fortune can play a role: they who are ugly, ill born or solitary have

Table 26: Faculties and Virtues of the Soul

AREA OF OPERATION	THE SOUL AND ITS VIRTUES							
	Rational			Irrational				
Faculty of the Soul	Scientific		Calculative			Vegetative	Appetitive and Desiring	
Functions and Objects of the Faculties	That which contemplates “the kind of things whose originative causes are invariable” <i>Nicomachean Ethics</i> VI 1139a5 - 10 (Aristotle, 1934; 1952g, p. 387). Thus for Aristotle its objects are natural beings, mathematical beings and metaphysical beings, beings which in the earlier language of this chapter were identified as contingent beings. The contemplation of the scientific faculty calls forth theoretical philosophy.		The faculty that contemplates “variable things” <i>Nicomachean Ethics</i> VI 1139a5 - 10, (Aristotle, 1934; 1952g, p. 387). Its objects are the works of art and craft and the universals of mankind, family and state together with the disciplines they call up, arranged as follows:			That which accounts for nutrition and growth and which beyond this function “in no way shares in a rational principle” <i>Nicomachean Ethics</i> II 1102b30, (Aristotle, 1952g, p. 348) p. 348)(Aristotle, 1934).	The appetitive, desiring faculty which in a general sense is able to partake of reason positively (by being influenced by it) or negatively (by being hostile and going against it).	
			The Objects of the Calculative Faculty and their Derived Political and/or Moral Domains					
			mankind	family	State			
				economics	political Science			
		Architectonic ¹ (legislative)	administrative	deliberative	judicial			
Kind of Virtue	intellectual virtue		intellectual virtue			not applicable	moral virtue	
Specific Virtues	(1) scientific reason understood as the capacity for scientific demonstration (2) intuitive reason or <i>nous</i> understood as the capacity for grasping universals from experience of a number of individual occurrences. Combined, these two virtues result in theoretical or philosophical wisdom.		(1) art: “a state concerned with making, involving a true course of reasoning” <i>Nicomachean Ethics</i> VI 1140a20 (Aristotle, 1934; 1952g, p. 389). (2) practical wisdom: “ a true and reasoned state of capacity to act with regard to the things that are good or bad for man” <i>Nicomachean Ethics</i> VI 1140b5, (Aristotle, 1934; 1952g, p. 389). It is the capacity to discern between good and bad acts.			not applicable	The so-called moral or lower virtues, the virtues of character set out in Table 27. They are means of emotion and feeling located between vices of excess and deficit.	

Notes: (1): An architectonic Science is a Science which is the end of all other sciences; it is the Science for which all other sciences are done. It is the master Science and the remaining sciences are slave sciences. Theology is the architectonic Science of the theoretical intellectual virtues. Politics, especially its legislative aspects, is the architectonic Science of the practical intellectual virtues *Metaphysics* III 996a20 – 999a8 (Aristotle, 1952d, pp. 514 - 518; 1989) and *Nicomachean Ethics* I 1094a25 – 1094b10 (Aristotle, 1934; 1952g, p. 339). Architectonic Science is discussed further beginning on page 262.

Source: Constructed by Ian Eddington from Aristotle. (1952). *Nicomachean Ethics*. (I 1094a25 - 1094b10; II 1102b30; VI 1139a5; 1139a5 – 10, 1140b5, 1140a20). In R. M. Hutchins (Ed.), *Aristotle II*. Chicago: William Benton; Aristotle. (1952); *Metaphysics*. (III 996a20 – 999a8). In R. M. Hutchins (Ed.), *Aristotle I*. Chicago: William Benton; Aristotle. (1952). (Aristotle, 1934; 1952d, pp. 415 – 418; 1952g, pp. 339, 348, 387, 389; 1989).

generally less a chance at happiness than those who have good friends, political connections and wealth *Nicomachean Ethics* I 1099a30 - 1099b10, (Aristotle, 1934; 1952g, pp. 344 - 45) and “those who say that the victim on the rack or the man who falls into great misfortunes is happy if he is good are, whether they mean it or not, talking nonsense” *Nicomachean Ethics* VII 1153b20 (Aristotle, 1934; 1952g, p. 405). Justice and happiness are related in this manner: justice is done for the sake of happiness.

Virtue is very important for Aristotle who posits that mankind’s work, mankind’s quest for happiness with justice, is made possible because, by its disposition, the human soul develops and hones its own particular virtues for the attainment of that work. On the basis of a general understanding of the tripartite soul not unlike that developed by Plato, Aristotle divides the virtues of the soul into *intellectual* virtues or virtues of the rational soul and moral virtues or virtues of the irrational soul. Table 26 on page 241 provides further details. Also as in the case established earlier for Plato, the virtues are to be thought of generally in a Greek way as skills, and know how, and can do, for the attainment of mankind’s work and this in itself supports the Level 1 articulation of Proposal (III): virtue as goodness is a practical thing.

The virtues are thus technical attributes, good-at-what attributes in the sense of say a

<p style="text-align: center;">Proposal (III)</p> <p>Aristotle’s founding of an “objective” Ethics based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning.</p>
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sword maker being good or virtuous at forge work, or a map maker being good or virtuous at geography and drawing. The word virtue as it is used in the discussions which follow is thus

not an easy synonym for the word moral even though Aristotle’s so-called moral virtues, which are also known as the lower virtues and as virtues of character, might easily be confused with the absolute virtues of the Modern and Post-Modern Ages, honesty or patience, say, which by and large they are not, but to which they were to gradually give way. While generically Aristotelian virtues are skills and know how, their substance is broadly known.

The intellectual virtues of the rational soul are subdivided into virtues of the scientific soul and virtues of the calculative soul. The intellectual virtues of the scientific soul, scientific reason, and intuition, respectively, are excellences of mind

consisting of reason or intellect. When they act together they result in theoretical or speculative wisdom known as philosophical wisdom which is the skill peculiar to

Table 27: Ross' Compilation of Aristotle's Moral Virtues

Feeling (Passion)	Action	Excess	Mean (The Moral Virtues)	Defect
Fear Confidence	Lacuna ¹	Cowardice Rashness	Courage Courage	Unnamed Cowardice
Certain Pleasures of Touch	Lacuna ¹	Profligacy	Temperance	Insensibility
Pain Arising from Desire of Such Pleasures	Giving of Money Taking of Money	Prodigality Illiberality	Liberality Liberality	Illiberality Prodigality
	Giving of money on a large scale	Vulgarity	Magnificence	Meanness
	Claiming of honour on a large scale	Vanity	Self-respect	Humility
	Pursuit of honour on a small scale	Ambition	Lacuna ¹	Unambition
Anger	Lacuna ¹	Irascibility	Gentleness	Unirascibility
Social Intercourse	Telling truth about oneself	Boastfulness	Truthfulness	Self-depreciation
	Giving of pleasure by way of amusement in life generally	Buffoonery Obsequiousness	Wittiness Friendliness	Boorishness Sulkiness
Shame	Lacuna ¹	Bashfulness	Modesty	Shamelessness
Pains at Good or Bad Fortunes of Others	Lacuna ¹	Envy	Righteous Indignation	Malevolence

Notes: (1) Signifies a gap in the information I could glean from the sources used to construct the table.

Source: Modified by Ian Eddington from Copleston, F. (1966) *History of Philosophy*. Volume 1 (p. 341). London: Burns and Oats Limited; Ross, Sir W. D. (1930). *Aristotle*. (p. 203). London: Methuen.

theoretical philosophy and its objects of physics, metaphysics and mathematics. *Nous*, that metaphysical being, is directly involved. Table 26 on page 241 illustrates those relationships.

The intellectual virtues of the calculative rational soul illustrated in Table 26 are art, in the sense of the skill of the artisan, and practical wisdom, and they are excellences of mind for practical everyday living and the appropriate conduct of goal directed activity. Practical wisdom in particular is “a reasoned and true state of capacity to act with regard to human goods [in the everyday unfolding of life]” *Nicomachean Ethics* 1140b20 (Aristotle, 1934; 1952g, p. 389, my square brackets). Aristotle argues that discerning how to act in order to attain the best possible life implicates humans in Ethics as a practical affair, an affair of action *Nicomachean Ethics* (Aristotle, 1934; 1952g, II 1106b25, p. 352) which again reinforces the demonstration of Proposal

(III). Because practical wisdom appeals to theoretical wisdom as a kind of arbitrator

**And How Might One Jump from the Mindless
Biological Values of Homeostasis in the Last Sentence
Below to Articulation of the Interpreted Felt Lower
Moral Virtues of Everyday Life to Improve on the
Exquisite Aristotle**

To date, neuroscience has dealt with this set of questions by taking a curious shortcut. It has identified several chemical molecules that are related, in one way or another, to states of reward or punishment and thus, by extension, are associated with value. Some of the best-known molecules will sound familiar to many readers: dopamine, norepinephrine, serotonin, cortisol, oxytocin, vasopressin. Neuroscience has also identified a number of brain nuclei that manufacture such molecules and deliver them to other parts of the brain and the body. (Brain nuclei are collections of neurons located below the cerebral cortex in the brain stem, hypothalamus, and basal forebrain; they should not be confused with the nuclei inside eukaryotic cells, which are simple sacs where most of the cell's DNA is housed.) The complicated neural mechanics of "value" molecules is an important topic that many committed neuroscience researchers are attempting to unravel. What prompts the nuclei to release those molecules? Where in the brain and body are they released precisely? What does their release accomplish? Somehow discussions about the fascinating new facts come up short when one turns to the central question: Where is the engine for the value systems? What is the biological primitive of value? In other words, where is the impetus for this byzantine machinery? Why did it even begin? Why did it turn out to be this way? Without a doubt, the popular molecules and their nuclei of origin are important parts of the machinery of value. But they are not the answer to the questions posed above. I see value as indelibly tied to need, and need as tied to life. The valuations we establish in everyday social and cultural activities have a direct or indirect connection with homeostasis. That connection explains why human brain circuitry has been so extravagantly dedicated to the prediction and detection of gains and losses, not to mention the promotion of gains and the fear of losses. It explains, in other words, the human obsession with assignation of value. Value relates directly or indirectly to survival. In the case of humans in particular, value also relates to the quality of that survival in the form of well-being. The notion of survival—and, by extension, the notion of biological value—can be applied to varied biological entities, from molecules and genes to whole organisms. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain*. (pp. 47 - 48). Random House. Kindle Edition. (Damasio, 2010, pp. 47-48)

over its decision-making it also indirectly involves *nous*.

The moral virtues of the desiring and appetitive irrational soul outlined in Table 27 are discerned emotional states in the form of means between extremes of excess and deficit and they are germane to human character. They are a state or disposition of mind that might be thought of as reasoned emotion.

Thus the whole construct is wonderfully complex. The substance of the moral virtues by which humans interact with one another is emotion generated by the pleasure or pain of activity. The discerning of the appropriate disposition towards those emotions, which discerning makes the virtuous person proper, involves calculative rational soul acting under the patronage of scientific reason in particular, and philosophic wisdom in general, both of which cognitive activities themselves rely on the metaphysical and divine

substance *nous*.

In so far as I can discern, Aristotle provides further but tantalisingly incomplete information about the intellectual and moral virtues. I revisit the intellectual virtues of intuition and reasoned demonstration in a discussion about Science beginning on page 252. For the present I continue to discuss in turn the moral virtues of character and the intellectual calculative virtue of practical wisdom, both of which are central to Aristotle's explanation of Ethics.

I discuss the moral virtues of character first. Ross (1930, p. 203) has done the hard work of extracting and listing Aristotle's moral virtues and these are displayed in Table 27 on page 243. In that table, proceeding from left to right, the emotional state

Proposal (III) Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical wisdom, by a cognitive appeal to scientific reasoning.
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in the left hand column is matched with the actions that provoke it, and then in turn, in the means column, with a named

moral virtue. The table particularly reinforces the ongoing demonstration of Proposal (III), namely that moral virtues pertain to act.

Aristotle explains that humankind is born fitted with dispositions for moral virtue, one has a tendency towards rashness, another towards temperance and so on. Such virtue may be aided and abetted in childhood through culture, experience, and habituation but until it somehow partakes of reason it remains an inferior form of virtue which he calls natural virtue. In and of itself natural moral virtue may even be hurtful to its possessor *Nicomachean Ethics* VII 1144b10, (Aristotle, 1934; 1952g, p. 394). Under the influence of reason, such natural moral virtue becomes moral virtue in the strict sense, and without this more rigorous form of virtue, practical wisdom, of which more later, is not possible.

The moral virtues proper, in spite of being associated with passions like appetite, anger, joy, hate, pity and so on, which passions culminate in pleasure or pain, are not passions. Neither through their association with the appetitive and desiring faculty of the soul, which allows the experience of such feelings, are they desires. Rather the moral virtues are dispositions or states of character "in virtue of which we stand well or badly with reference to the passions" *Nicomachean Ethics* II 1105b25 - 30 (Aristotle, 1934; 1952g, p. 351). Choice is the factor which differentiates raw passion *per se* from moral virtue *per se* as a discerned state of passion. Whereas humans are involuntarily moved to feel passions, the moral virtues result in states which emerge as a result of choices made in determining the level of feeling or passion appropriate to the situation in progress.

As Table 27 on page 243 reveals, the adopted position, the moral virtue *per se*, is always a mean between vices of excess and deficiency. But the mean is not an arithmetical mean and, other than the general prescription that moral virtue requires

the adoption of a mean position through choice under *kalon*, that is, under nobleness, kindness and beauty, there is no hard and fast rule.

The position adopted will depend on the circumstances.

[Moral virtue] is this that is concerned with passions and actions, and in these there is excess, defect, and the intermediate. For instance, both fear and cowardice and appetite and anger and pity and in general pleasure and pain may be felt both too much and too little, and in both cases not well; but to feel them at the right times, with reference to the right objects, towards the right people, with the right motive, and in the right way, is what is both intermediate and best, and this is characteristic of virtue. Similarly with actions also there is excess, defect and the intermediate. Now virtue is concerned with passions and actions, in which excess is a form of failure, and so is defect, while the intermediate is praised and is a form of success; and being praised and being successful are both characteristics of virtue. Therefore virtue is a kind of mean, since, as we have seen, it aims at what is intermediate. *Nicomachean Ethics* II 1106b15 – 30 (Aristotle, 1934; 1952g, p. 352, my square brackets)

The previous quotation notwithstanding Aristotle does claim that there are moral absolutes:

But not every action nor passion admits of a mean; for some have names that already imply badness, e.g. spite, shamelessness, envy and in the case of actions, adultery, theft, murder; for all of these and suchlike things imply by their names, that they are themselves bad, and not the excesses and deficiencies in them. It is not possible, then, ever to be right with regard to them; one must always be wrong. *Nicomachean Ethics* II 1107a10 – 15 (Aristotle, 1934; 1952g, p. 352)

I would better understand Aristotle's inclusion of shamelessness with the moral absolutes, and Ross' inclusion of it as an extreme in the shame row of Table 27 on page 243. Moral virtue, which is done for the sake of human happiness, is also somehow its own reward and its final cause is its *kalon*, its nobleness or fineness or beauty. For example, courage "chooses or endures things, because it is noble to do so or because it is base not to do so" *Nicomachean Ethics* III 1116a10 - 15, (Aristotle, 1934; 1952g, p. 362) and virtuous persons choose to do virtuous acts "for their own sakes" *Nicomachean Ethics* II 1105a30 - 1105b (Aristotle, 1934; 1952g, p. 351), "as the rule directs, for honour's sake; for this is the end of virtue" *Nicomachean Ethics* III 1115b10 - 15 (Aristotle, 1934; 1952g, p. 361). Again, the magnificent man is liberal and acts for honour's sake and "he will consider how the result can be made most beautiful, and most becoming rather than for how much it can be produced, and how it can be produced most cheaply" *Nicomachean Ethics* IV 1122b5 – 10

(Aristotle, 1934; 1952m, p. 369). Honourable persons are of course just: consequently justice, virtue and happiness are inextricably interwoven in this amalgam that Aristotle brings to meaning and usage of the key term Ethics.

To adopt a virtuous mean is, by its very nature, to make choices appropriate to given situations. And even though the moral virtues of character are differentiated from the intellectual virtues outlined in Table 26 on page 241 by the very claim that they, the moral virtues, are virtues of a faculty of soul that has no rational principle of its own, a rational principle is nevertheless involved in the choice process and it is called practical wisdom which, as earlier explained, is an intellectual virtue of the calculative soul.

Virtue, then, is a state of character concerned with choice, lying in a mean, i.e. the mean relative to us, this being determined by the rational principle, and by that principle by which the man of practical wisdom would determine it". *Nicomachean Ethics* II 1107a - 1107a 5 (Aristotle, 1934; 1952g, p. 352).

Aristotle also offers general comment about moral virtue. First, moral virtue is difficult because it involves pleasure and pain which result from action. "We must take as a sign of states of character the [5] pleasure or pain that ensues from acts" *Nicomachean Ethics* II 1104b5, (Aristotle, 1934; 1952g, p. 350, translator's square brackets). Secondly, moral virtue is different because the so-called right rule is a relative thing which emerges from discernment of the relevant circumstances: "... the accounts [of matters of conduct] we demand must be in accordance with the subject matter: matters concerned with conduct and questions of what is good for us have no fixity" *Nicomachean Ethics* II 1104a - 1104a5 (Aristotle, 1934; 1952g, p. 349, my brackets). It is thus:

possible to fail in many ways (for evil belongs to the class of the unlimited as the Pythagoreans conjectured, and good [30] to that of the limited), while to succeed is possible only in one way (for which reason also one is easy and the other difficult—to miss the mark easy, to hit it difficult). *Nicomachean Ethics* II 1106b30 (Aristotle, 1934; 1952g, p. 352)

Thirdly Aristotle characterises conditions of moral failure amongst humans by identifying three kinds of moral states that are to be avoided namely, vice, incontinence and brutishness—and by identifying their preferred contraries which he names virtue, continence, and superhuman or godlike virtue *Nicomachean Ethics* VII

1145a - 1145a 25`, (Aristotle, 1934; 1952g, p. 395). He discusses continence as endurance, and incontinence as softness or effeminacy, informing at the outset that “we must treat each of the two neither as identical with virtue or wickedness, nor as a different genus” *Nicomachean Ethics* VII 1145b (Aristotle, 1934; 1952g, p. 395). I think of them as classes, or even types of character, rather than as virtue states, but still would grasp the distinction better.

Whereas the continent person when experiencing passions that conflict with their practical calculations of soul does not yield to those passions, the incontinent one does. Weakness and impetuosity are characteristics of incontinence *Nicomachean Ethics* VII 1015b15 – 20 (Aristotle, 1934; 1952g, p. 401). Under weakness the incontinent person correctly calculates that an action is bad yet acts under the influence of passion. The impetuous person acts as it were without thinking and may or may not be wise after the event. Interestingly Damasio *qua* neuroscientist and defining emotions electrochemically *qua* homeostatic control of drives and motivations in a mindless rewards and punishments electro-chemistry reports, among many other things, a basis for something like emotionally impetuous action in the mindless structure and functions of the central nervous system (Damasio, 1995, pp. 165 – 204, 245 - 252) and suggests that the benefits of such action can be enhanced or diminished depending on whether or not something like reflection is subsequently involved in a conscious mind consideration of emotions and actions. Pleasure and anger of the kind being generally discussed are implicated in incontinent character, and weakness and/or impetuosity can be caused by either of these passions. The most chronic form of incontinence is caused by the appetite for pleasure *Nicomachean Ethics* VII 1149a10 – 25 (Aristotle, 1934; 1952g, p. 399).

Fourthly, Aristotle uses his findings about pleasure, pain and continence to define other character traits or types. For example, the temperate man is something else again:

... for both the continent man and the temperate man are such as to do nothing contrary to the rule 1152^a for the sake of the bodily pleasures, ... the former has and the latter has not bad appetites, and the latter is such as not to feel pleasure contrary to the rule, while the former is such as to feel pleasure but not to be led by it. *Nicomachean Ethics* VII 1151b30 - 1152a5 (Aristotle, 1934; 1952g, p. 402)

I am not sure where one might find such temperate mankind today.

There is a self-indulgent man “and the incontinent and self-indulgent man are also like another; they are different [5], but both pursue bodily pleasure—the latter, however, also thinking that he ought to do so, while the former does not think this” *Nicomachean Ethics* VII 1152a5 (Aristotle, 1934; 1952g, pp. 402 - 403, translator's square brackets).

Cleverness is consistent with incontinence but practical wisdom is not *Nicomachean Ethics* VII 1152a5-15(Aristotle, 1934; 1952g, pp. 403).

There is a faculty called cleverness; and this is such as to be able to do things that tend towards the mark we have set before ourselves, and to hit it. Now if the mark be noble, the cleverness is laudable, but if the mark be bad the cleverness is mere smartness; hence we call men of practical wisdom clever or smart. Practical wisdom is not the faculty, but it does not exist without this faculty. *Nicomachean Ethics* VI 1144a25 – 30 (Aristotle, 1934; 1952g, p. 394)

In particular:

...there is however nothing to prevent [10] a clever man from being incontinent; this is why it is sometimes actually thought that some people have practical wisdom but are incontinent, viz, because cleverness and practical wisdom differ in the way we have described in our first discussions [that is, in the manner outlined in the last quote]. *Nicomachean Ethics* VII 1152a10 – 15 (Aristotle, 1934; 1952g, p. 403, my second square brackets)

Prudence as earlier mentioned on page 234 is another name for practical wisdom.

Although pleasure is all consuming for human beings, and is essential to human happiness, it is not *per se* the good of humanity. This is because pleasures compete with one another and crowd one another out. Rather, in essence, pleasure is something which accompanies human activity—*Nicomachean Ethics* X 1174b2 - 1175a (Aristotle, 1934; 1952g, p. 429), and is something which “completes the activity”—*Nicomachean Ethics* X 1174b30 - 1175a, (Aristotle, 1934; 1952g, p. 429) so that humans need not contemplate the pleasures themselves to order and rank them. The right ranking of pleasures will be that which accompanies the right ranking of actions, and the man of practical wisdom is the measure of the right ranking of actions.

Before further discussing the role of practical wisdom in virtue, I provide, in this

Proposal (III)
Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical wisdom, by a cognitive appeal to scientific reasoning.

paragraph, both a brief recapitulation of the progress in articulation of Proposal (III), and a guide to the direction the continuing discussion of practical wisdom narrative will

take. I have, in respect of Proposal (III), demonstrated that Ethics in Aristotle is a practical affair and that it involves both emotion and reason. I now work towards closing the demonstration of Proposal (III) by further exploring the manner in which Aristotle has practical wisdom rely on theoretical wisdom, which itself, involves scientific reasoning. I thereby demonstrate another sense in which Ethics can be said to be objective. This further discussion of practical wisdom contains ongoing Level 1 and Level 2 articulation.

So, what is this condition called practical wisdom and how does it involve itself in facilitating states of moral virtue?

As the earlier quotation on page 247 intimated, and Table 26 on page 241 illustrates, practical wisdom is the rational principle of the calculative soul and it is a necessary condition in the process through which natural moral virtue might become moral virtue in the strict sense. Its influence differentiates clever action from virtuous action:

Therefore, as in the part of us which forms opinions there are two types, cleverness and practical wisdom, so too in the moral part there are two types, natural virtue and virtue in the strict sense, and of these the latter involves practical wisdom. *Nicomachean Ethics* VI 1144b10 - 20 (Aristotle, 1934; 1952g, p. 394)

Practical wisdom effects this differentiation between clever action and virtuous action by providing the right rule.

... all men, when they define virtue, after naming the state of character and its objects, add, 'that [state of character] which is in accordance with the right rule'; now the right rule is that which is in accordance with practical wisdom. *Nicomachean Ethics* VI 1144b20 - 25 (Aristotle, 1934; 1952g, p. 394, my square brackets)

and

... we must go a little further. For it is not merely the state in accordance with the right rule, but the state that implies the *presence* of the right rule that is, virtue; and practical

wisdom is the right rule about such matters. *Nicomachean Ethics* VII 1144b25 – 30 (Aristotle, 1934; 1952g, p. 394)

And here it is in a nutshell:

It is clear, then, from what has been said, that it is not possible to be good in the strict sense without practical wisdom, nor practically wise without moral virtue. *Nicomachean Ethics* VI 1144b30, (Aristotle, 1934, 1952g)

No circularity is implied by this last quote because “the one [moral virtue] determines the end and the other [practical wisdom] makes us do the things that lead to the end” (ibid., 1145a - 1145a 5, p. 394, my square brackets).

In particular, practical wisdom “is not supreme over philosophical wisdom, i.e. over the superior part of us” *Nicomachean Ethics* VII 1145a5 – 10 (Aristotle, 1934; 1952g, p. 394). Rather “it [practical wisdom] does not use it [philosophical wisdom] but provides orders for its coming into being; it offers orders, then, for its sake, but not to it” (ibid., p. 394 my square brackets). When practical wisdom appeals to philosophical wisdom, when it offers orders not to it but for its sake, it appeals in part to scientific reasoning and, in this sense also, Aristotle’s *Ethics* is objective in the sense expressed in Proposal (III). Aristotle’s *Ethics* is “objective” in another sense, too. Happiness serves justice and justice occurs when action can be partly defined by, and be seen to conform to, ideas of mathematical proportion. There are no ifs and buts about justice. While virtue involves choice, justice involves duty, and notwithstanding duty being a value, duty is non-negotiable.

I have now completed the Level 1 articulation of Proposal (III) in so far as it can be completed without further investigation of Aristotelian Science. Much of Proposal

<p>Proposal (III) Aristotle’s founding of an “objective” <i>Ethics</i> based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning.</p>
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(III)’s Level 2 articulation is also complete. Before continuing to discuss Aristotle’s meaning of Science I summarise the Level 2 articulation of the key term *Ethics*. To wit: mankind’s *ergon*, happiness with justice, or happiness with justice and honour, under the patronage of *kalon*, the noble and beautiful, is achieved through virtues appropriate for that work. These virtues or skills are the intellectual virtues of scientific and practical wisdom and the moral virtues which are discerned emotional states which inform correct

actions and just desire. The moral virtues are means and justice in general is defined in terms of just deserts based on human merit and equality in exchange.

The summary content of the previous paragraph notwithstanding, Proposal III's

<p style="text-align: center;">Proposal (IV) Aristotle's founding of Science as a process of induction and deduction based on objective understandings about natural objects, and his development of a logic which prescribed a procedure for reasoning in Science.</p>
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import can be further enhanced, and Level 2 articulation of Ethics further advanced, through a study of philosophical wisdom, to which

practical wisdom defers, because philosophical wisdom is made up of Science or reasoned demonstration, and intuition. I thus now continue as foreshadowed on page 236 to discuss Aristotle's Science. I proceed by discussing the nature of intuition and scientific reason, and in doing so, I complete Level 1 and 2 articulation of Proposals (III) and (IV). This discussion occupies pages 252 to 263. I then return to the question of how the intellectual virtues, philosophical wisdom and practical wisdom, and the moral virtues, are linked—a question germane to the political philosophy of the *Polis*.

SCIENCE

**Level 1 Articulation of Proposal (III) Continues
Level 1 Articulation of Proposal (IV) Begins**

The syllogism is central to Aristotle's definition of Science and the logic through which Science may occasion objective understanding. Technical dimensions inform the structure of the syllogism. For example, the three indented lines below constitute an Aristotelian syllogism.

- All animals are mortal. (1)
- All men are animals. (2)
- All men are mortal. (3)

In these lines "certain things being laid down, something other than these necessarily comes about through them" *Topics* I 100a25 (Aristotle, 1952r, p. 143; 1960b). These three lines taken together reveal the process of deduction formalised by Aristotle. The certain-things-having-been-laid-down are those contained in lines (1) and (2) and the something-other-than-those which necessarily results is contained in line (3). The knowledge flow from those things laid down to that something other which necessarily results is also called inference. Each of lines (1) and (2) is an asserted

premise and line (3) is a deduced conclusion. In line (1) animals and mortal are terms. In line (2) men and animals are terms. The term animals is common to premises (1) and (2) and is called the middle term. The terms of (3), the conclusion, are men and mortal. The term mortal which is the predicate of the conclusion is called the major term and the term men, which is the subject of the conclusion, is called the minor term. Because premise (1) contains the major term, mortal, it is called the major premise. Because premise (2) contains the minor term, animals, it is called the minor premise.

The syllogism “is a ‘demonstration’ when the premises from which the reasoning starts are true and primary, or are such that our knowledge of them has originally come through premises which are primary and true” *Topics* I 100a25-30 (Aristotle, 1952r, p. 143; 1960b). “Things are ‘true’ and ‘primary’ [18] which are believed on the strength not of anything else but of themselves; for in regard to the first principles of Science it is improper to ask any further for the why and the wherefore of them” *Topics* I 100b18 - 20 (Aristotle, 1952r, p. 143; 1960b). As I subsequently reveal in the discussion of pages 256 to 262, the sentence immediately above is not so trite as it might, on its face, appear to be. It is very demanding when taken in a strict Aristotelian sense.

In general, if inference is to occur, then, first, terms which can be of individuals, for example, dog or hat, or of universals, animal or reptile, must be the subjects or predicates of premises; secondly, every premise must affirm or deny the predicate of its subject; thirdly, terms that are predicates must be universals; and fourthly, the syntax of premises and conclusion sentences must be of the kind outlined. Complex and compound conjunction additions are not permitted.

Such are the technical specifications of the syllogism. I turn to the epistemological dimension.

In a nutshell, the terms of the premises and conclusion are the individuals and the universals of the categories earlier outlined in Table 15 on page 207. As revealed in that discussion, while perception and cognition are of the individuals, which consist of substance, Science deals with the universals, which are of the mind, so that it is

not by coincidence that the major term of the conclusion of the syllogism is a universal. Aristotle's position is that first, individual beings exist, then perception of, and thought about those beings follows, and then language follows that thought. The terms of language are terms which signify both individuals and universals so that Science, because it trades in universals, is of the mind. What is more to the point, the linkage of syllogism terms to the categories, and categories to substances, immediately links Science, understood as induction and deduction, to metaphysics, understood as the contemplation of substance in its various forms. Deduction, as earlier explained on pages 252 to 253 is central to Aristotle's theory of inference. I subsequently reveal, beginning on page 261, that induction is also implicated in Aristotle's scientific method. In the syllogism used above, the conclusion, that something-other-than-these, that something which results-of-necessity, is a reasoned fact, a scientific fact, a that which cannot be "other than it is" *Posterior Analytics* I 73a20 – 25 (Aristotle, 1952p, p. 100; 1960a).

For Aristotle "the conviction of pure science must be unshakable" *Posterior Analytics* I 72b - 72b5 (Aristotle, 1952p, p. 99; 1960a).

In particular:

We suppose ourselves to possess unqualified scientific knowledge of a thing ... when we think that we know the cause on which the fact depends, as the cause of that fact and of no other, and further, that the fact can be no other than it is. *Posterior Analytics* I 71b5 - 15, (Aristotle, 1952p, pp. 97 - 99; 1960a)

Furthermore, Aristotle informs that every conceivable proposition or problem that can be dealt with through syllogistic induction inheres in four general orders of predication that can be found in the categories namely, definition, property, as in speech is a property of man, genus, and accident.

For if any one were to survey propositions and problems one by one, it would be seen that each was formed either from the definition of something, or from its property, or from its genus, or from its accident. *Topics* I 103b5 (Aristotle, 1952r, p. 146; 1960b)

and

The classes of predicates in which the four orders are found ... are ten in number: Essence, Quantity, Quality, Relation, Place, Time, Position, State, Activity, and Passivity. For accident and genus and property and definition of anything will always be in one of these categories. *Topics* I 103b20 – 25 (Aristotle, 1952r, p. 147; 1960b)

Aristotle’s explanation of each of the four general orders of predication is contained in Table 28.

Table 28: Definitions of Four Classes from Which all Propositions and Problems Emerge

Class	Definition
definition	“A ‘definition’ [of a term] is a phrase signifying a thing’s essence <i>Topics</i> I 101b35 - 102a (Aristotle, 1952r, p. 144, my square brackets; 1960b). “Definition is mostly concerned with questions of sameness or difference” <i>Topics</i> I 102a5 – 10 (Aristotle, 1952r, p. 144; 1960b). Difference demolishes definition, sameness may not be definition. Definition involves essential predication. Thus the statement man is an animal is not a definition of man because animal can, for example, be predicated of fish, or ox, or monkey and of other species too. Man is a featherless biped <i>Statesman</i> 266e (Plato, 1921a; 1952t, p. 585) would come closer to the mark in a strict logical sense but Aristotle defines mankind quite differently.
property	“A property is a predicate which does not indicate the essence of a thing, but yet belongs to that thing alone and is predicated convertibly on it ... [but] no one calls anything a ‘property’ which may possibly belong to something else” <i>Topics</i> I 102a15 - 25, (Aristotle, 1952r, p. 145, my square brackets; 1960b). It is a property of man that he can learn grammar. Sleep on the other hand is not convertibly a property of man because it is shared with other animals. It is not an absolute (convertible) property but a relative or temporary property.
genus	“A genus is what is predicated in the category of essence of a number of things exhibiting differences of kind” <i>Topics</i> I 102a30 - 35, (Aristotle, 1952r, p. 145; 1960b). Animal is, in the example of the previous row, the genus of fish, ox, and monkey. Essence is that which defines “all such things as would be appropriate to mention in reply to the question “What is the object before you?” (ibid.).
accident	An accident is something which, although it is neither definition, nor property, nor genus, may yet belong or not belong to the self-same thing. The redness, blackness or greyness of soil are accidents. Accidents may become temporary or relative properties but never absolute properties.
Source: Constructed by Ian Eddington from <i>Topics</i> . (I 101b35 - 102a, p. 144, 102a5 - 10, p. 144, 103a15 - 30, p. 145, 102a15 - 35, p. 145, 101b35 – 102b25, pp. 144-145). In R. M. Hutchins (Ed.), <i>Aristotle I</i> . Chicago: William Benton; Plato. (1952). <i>Statesman</i> . (266e, p. 585). In R. M. Hutchins (Ed.), <i>Plato</i> . Chicago: William Benton.	

In respect of the classes outlined in Table 28 Aristotle links difference to genus *Topics* I 101b15 - 20 (Aristotle, 1952r, p. 144; 1960b). Subsequently commentators have tended to admit difference as a fifth member of Aristotle’s four-class group. Species is not included in the four classes because species is a defined entity. As Table 28 reveals, definition is concerned with essence, that elusive state of substance investigated in the earlier discussion about substance. The species is the repository of essence and the species is found by naming the genus to which a thing belongs and isolating the controvertible properties of the thing not shared by other things of the genus. In this manner species within the same genus are separated out. The predication in a definition must be essential predication, that is, the predicate of a definition must affirm or deny its subject. Although essential predication is necessary for definition it is not, *per se*, sufficient. For example, the statement that man is an

animal contains an essential predication but it does not define man. In general, when a predicate essentially confirms a number of different subjects—men are animals, fish are animals, sheep are animals—the predicate is the genus of those subjects. When a predicate confirms only one subject—spiders are air breathing eight legged arthropods—it is the species.

It is immediately clear that the terms used in the premises, which of necessity are prior to the conclusion, must be clearly defined and understood, and the premises factual, if the deduction is to be trusted.

But how is the factual status of the premises confirmed? Aristotle claims that intuition is a higher order of knowledge than Science understood as inference and induction, and that intuition, through experience, informs true premise. He states that there is a body of indemonstrable fact, prior to demonstration. His demarcation of demonstrated knowledge from intuited knowledge, knowledge which is true, primary, immediate, better known, and prior to demonstrated knowledge, rests on two pillars. The first pillar is his explanation of how each kind of knowledge comes into being. The second pillar is his formal definition and fine articulation of each kind of knowledge within the structure of his epistemology. I discuss these pillars further by examining Aristotle's answer to the question next proposed.

How then does this body of intuited knowledge occur? Aristotle's explanation proceeds as follows.

First he asks:

...whether it [intuition, primary knowledge] is of the same kind as the apprehension of the conclusions [demonstration] but also whether there is or is not scientific knowledge [demonstration] of both [premises and conclusions]; or scientific knowledge of the latter and of the former a different kind of knowledge, and whether the developed states of knowledge [primary knowledge] are not innate but come to be in us, or are innate but at first unnoticed. *Posterior Analytics* II 99b20 - 30 (Aristotle, 1952p, pp. 136, my square brackets; 1960a)

He then answers that primary knowledge could not be possessed from birth because it is absurd that we should “possess apprehensions more accurate than demonstration and fail to notice them” *Posterior Analytics* II 99b25 – 30 (Aristotle, 1952p, p. 136;

1960a), and that if we acquire primary knowledge, if it comes to be in us and we did not previously possess that primary knowledge, there could be no comprehension of it without “a basis of pre-existent knowledge” *Posterior Analytics* II 99b25 - 35, (Aristotle, 1952p, p. 136; 1960a). He then goes to details about the nature of, and the process leading to, intuited knowledge. First the higher forms of knowledge are not innate. Rather they are the outcome of experience, which consists of perception and memory. Perception in its own right is occasioned by a congenital discriminative capacity which is called sense perception, and memory, in its own right, is occasioned by systematisation of perceptions:

So it emerges that neither can we possess them (intuition, primary knowledge) from birth nor can they come to be in us if we are without knowledge of them to the extent of having no such developed state at all. Therefore we must possess a capacity of some sort, but not such as to rank higher in accuracy than those developed states. And this at least is an obvious characteristic of all animals, for they possess a congenital discriminative capacity which is called sense perception. But though sense perception is innate in all animals, in some the sense impression comes to persist, in others it does not. So animals in which this persistence does not come to be have no knowledge at all outside the act of perceiving, or no knowledge of objects of which no impression persists; animals in which it does come into being have perception and can continue to retain the sense impression in the soul. And when such persistence is frequently repeated a further distinction at once arises between those which out of the persistence of such sense impressions develop a power of systematising them and those which do not. So out of sense perception comes to be what we call memory, and out of frequently repeated memories of the same thing develops experience; for a number of memories constitute a single experience. From experience again [comes intuitive knowledge]—i.e. from the universal now established in its entirety within the soul, the one beside the many which is a single identity within them all—originate the skill of the craftsman and the knowledge of the man of science, skill in the sphere of coming to be and science in the sphere of being.

We conclude that these states of knowledge are neither innate in a determinate form, nor developed from other higher states of knowledge, but from sense perception. It is like a rout in a battle stopped by first one man making a stand and then another, until the original formation has been restored. The soul is so constituted as to be capable of this process. *Posterior Analytics* II 99b30 - 100a15 (Aristotle, 1952p, pp.136, my brackets; 1960a)

Secondly, he argues that intuitive knowledge is established by induction:

When one of a number of logically indiscriminable particulars has made a stand, the earliest universal is present in the soul; for though the act of sense perception is of the particular, its content is universal—is man for example not that man Callias. A fresh stand is made among these rudimentary universals, and the process does not cease until the indivisible concepts, the true universals, are established: e.g. such and such a species of animal is a step towards the genus animal, by which the same process is a step towards a further generalisation. Thus it is clear that we must get to know the

primary premises by induction; for the method by which even sense perception implants the universal is inductive. *Posterior Analytics* II 100a15 - 100b5 (Aristotle, 1952p, p. 136; 1960a)

Thirdly, he argues that intuition, which grasps the primary premises, is the higher form of knowledge: scientific knowledge comes next in turn because, through inference, it carries the intuitive grasp of the premises to the universal body of fact:

Now of the thinking states by which we grasp truth, some are unfailingly true, others admit of error—opinion, for instance, and calculation, whereas scientific knowing and intuition are always true: further, no other kind of thought except intuition is more accurate than scientific knowledge, whereas primary premises are more knowable than demonstrations, and all scientific knowledge is discursive. From these considerations it follows that there will be no scientific knowledge of the primary premises, and since except intuition nothing can be truer than scientific knowledge, it will be intuition that apprehends the primary premises—a result which also follows from the fact that demonstration cannot be the originative source of demonstration, nor consequently, scientific knowledge of scientific knowledge. If therefore it is the only other kind of true thinking except scientific knowing, intuition will be the originative source of scientific knowledge. And the originative source of science grasps the original basic premise, while science as a whole is similarly related as originative source to the whole body of fact. *Posterior Analytics* II 100b5 - 100b15 (Aristotle, 1952p, pp. 136 - 137; 1960a)

Even though the premises are grasped by intuition, and scientific facts are inferred from those premises, there are methodological constraints. As the quotation next below reveals.

... the premises of demonstrated knowledge must be true, primary, immediate, better known than and prior to the conclusion which is further related to them as effect to cause. Unless these conditions are satisfied the basic truths will not be 'appropriate' to the conclusion. Syllogism there indeed may be without these conditions, but such syllogism, not being productive of scientific knowledge, will not be demonstration. *Posterior Analytics* I 71b20 – 25 (Aristotle, 1952p, p. 98; 1960a)

In addition to the technical rules for the syllogism, outlined earlier on pages 252 to 253, Aristotle does not provide an easy decision rule for determining the appropriateness of premises but his further articulation of Science as demonstration does reinforce the soundness of his theory of inference. In particular, the manner in which Aristotle introduces the principle of cause into the syllogism makes the logic of the syllogism, and its attendant inference, compatible with his definition of Science as that-which-can-be-no-other and of knowledge of the cause.

Now since the required ground of our knowledge—i.e. of our conviction—of a fact is the possession of such a syllogism as we call demonstration, and the ground of the

sylllogism is the facts constituting its premises, we must not only know the primary premises—some if not all of them—beforehand but know them better than the conclusion: for the cause of an attribute inhering in a subject always itself inheres in the subject more firmly than that attribute; e.g. the cause of our loving anything is dearer to us than the object of our love. So since the primary premises are the cause of our (scientific) knowledge—i.e. of our conviction—it follows that we know them better—that is, are more convinced of them—than their consequences, precisely because of our knowledge of the latter is the effect of our knowledge of the premises. *Posterior Analytics* I 72a25 - 35 (Aristotle, 1952p, pp. 98 - 99; 1960a)

Aristotle's use of the word attribute is a key to further understanding of his position. We have already seen from our discussion of the categories that individuals are known through their attributes which are given to us by the accidents which inhere in their substance. And we also know from our earlier discussion about metaphysics that those same individuals of the categories are composites of form and matter, matter occasioning the numerical individuality of the thing, form bringing that essence which makes each numerical individual a member of a class of similar things, and accidents which differentiate the numerical individuals of a class, each from the other. And as we have seen, the terms of the premises and conclusion of the syllogism are made up of individuals Aristotle discusses in his *Categories* (Aristotle, 1938a, 1952a) and *Metaphysics* (Aristotle, 1934, 1952d), and their universals. Thus the key to understanding the truth status and appropriateness of intuited premises lies in Aristotle's explanation of how the essential attributes of form allow the discovery of classes upon which the truth content of the terms of the premises, and the premises themselves, rest. And this brings Aristotle, and us, to the problem of definition of terms.

In particular, essential attributes of a thing specified as a term in a premise must first belong to their subject as elements of its essential nature, for example, as in point to line, animal to man, two right angles to triangle, and secondly, must be contained in their subjects by virtue of the subjects themselves belonging to the attribute's defining formula. Normally, an essential attribute is an attribute not predicated on a subject other than itself, although, when a thing is not predicated on a subject other than itself, but is consequentially connected, it is admitted as an essential attribute. For example, while death is an essential attribute of animal, *per se*, it is also, for animal, an essential attribute of throat cutting. Essential attributes differ from

attributes which inhere in a subject by coincidence or accident. For example, white is a coincidence of animal.

Attributes are true-in-every-instance-of-their-subjects when they are truly predictable in all instances of the subject. A commensurately-universal-attribute is one which is true in every instance of its subject, which is essential to its subject, and therefore which inheres necessarily in its subject, and is the first subject to which the attribute can be found to belong. Thus the equality of its angles to two right angles is not a commensurately universal attribute of figure, or of isosceles, but rather of triangle which is prior to isosceles, and figure. The primary subject to which an attribute belongs and therefore in which it inheres commensurately and universally is found through the elimination of inferior differentiae and it is the first differentiae which destroys the attribute that decides the primary subject. In the example above, isosceles, or figure, will not eliminate or destroy two right angles but triangle will. Attributes related to subjects in other than the ways specified are accidental or coincidental.

Thus when differences of accident and coincidence are eliminated and where terms of premises are correctly inducted classes of commensurately universal attributes, and the premises are appropriate to the conclusion, it is safe to proceed to demonstration via the syllogism. And the demonstration of the syllogism is either the proof that a predicate belongs to its first subject, that is, commensurately and universally, or that it belongs to other subjects to which it attaches, such demonstration being of a secondary unessential sense. Herein lies the Aristotelian hypothesis. Such hypotheses “postulate facts on the being of which depends the being of the fact inferred” *Posterior Analysis* I 76b35 – 40 (Aristotle, 1952p, p. 105; 1960a).

There is so much contained in this simple description of the hypothesis. First, it is predicated on the three general principles of all reasoning. These principles are the principle of non-contradiction which states that it is impossible to be or not to be the same thing at the same time under the same conditions *Metaphysics* IV 1005b35 - 1006a5 (Aristotle, 1952d, p. 525; 1989), the principle of the excluded middle which states that contradictories cannot be at the same time true of the same thing so that

there cannot be an intermediate or middle between contradictories *Metaphysics* IV 1011b20 – 25, IV 1011a35 (Aristotle, 1952d, p. 531; 1989), and the principle of identity which states that a thing is itself and is inseparable from itself *Metaphysics* VII 1041a15 – 20 (Aristotle, 1952d, p. 565; 1989).

Secondly, it encapsulates the whole of the inferential part of Aristotle's scientific method. This method involves induction of the principles which underlie the observed phenomena. This part of his method further requires that these induced principles be expressed in language terms isomorphic with reality, and employed as premises for inference of scientific or causal statements about those premises.

Thirdly, it encapsulates the first principles and definitions of the particular Science involved in the demonstration at hand. These principles and definitions are expressed in terms used to describe individuals, species and genus. Choosing appropriate premises was the virtue or skill of the taxonomist who must be so exact as to allow false premises to be detected and eradicated from the syllogism *Posterior Analytics* 72b – 72b5, 75b 20 – 76a30 (Aristotle, 1952p, 72b, pp. 99, 104; 1960a). Aristotle also allows two cases in which premises not 'appropriate' to the subject can nevertheless allow scientific demonstration—theorems in harmonics demonstrable by arithmetic, and optics demonstrable by geometry.

As the quotation following next reveals, the whole process is not necessarily easy.

It is hard to be sure whether one knows or not; for it is hard to be sure whether one's knowledge is based on the basic truths appropriate to each attribute—the differentia of true knowledge. We think we have scientific knowledge if we have reasoned from true and primary premises. But that is not so: the conclusion must be homogeneous with the basic facts of science. *Posterior Analytics* I 76a25 – 30 (Aristotle, 1952p, p. 104; 1960a)

Demonstrative knowledge, being knowledge of a necessary nexus *Posterior Analytics* I 75a10 – 15 (Aristotle, 1952p, p.103; 1960a), is obtained through a necessary middle term of the syllogism. This middle term “must be consequentially connected with the minor [term], and the major [term consequentially connected] with the middle [term]” *Posterior Analytics* I 75a35 – 40 (Aristotle, 1952p, p. 103, my square brackets; 1960a) and be a term in which the attribute being demonstrated inheres. Under these conditions, the inference of a nexus between premise and

conclusion is scientific knowledge. This realisation in all its simplicity is one of Aristotle's major contributions and given that it comes close in time to Plato and before him to the age of magic, and given the intricacies that lie behind it, and in spite of the manner in which some Post-Modern commentators dismiss it, I find Aristotle's system in general, and the crucial role of the syllogism within it, simply stunning.

I have now completed the Level 1 articulation of Proposal (IV) in so far as it can be completed without reference to its entanglement with the other proposals. Before continuing I sum up the Level 2 articulation of Science so far contained in the discussion of Proposal (IV). Science, that knowledge which Aristotle has already argued separates the true from the false and brings humans to knowledge of the four causes of being, is inferior only to intuitive knowledge, for example horses eat grass. Its method is inference consisting of induction employed in syllogistic reasoning by which Science carries the intuitive grasp of premises to the universal body of fact. More widely defined Aristotelian Science also embraces deduction. Science deals in universals and is of the mind. It is just this depiction of Science that Aristotle brings to Level 2 articulation of the key term *Science*. I have still to discuss Aristotle's view

<p>Proposal (IV) Aristotle's founding of Science as a process of induction and deduction based on objective understandings about natural objects, and his development of a logic which prescribed a procedure for reasoning in Science.</p>

about which of the particular sciences, for example, physics, mathematics, or biology, is the architectonic (αρχιτεκτονικός) or master Science served by all other sciences, and to which those other sciences are slaves. His case for theology as the architectonic Science is presented at *Metaphysics* III 996b10 – 25 (Aristotle, 1952d, p. 515; 1989). His case for politics as the architectonic Science of the social sciences is presented at *Politics* I 1094b - 1094b10 within 1094a - 1092b10 (Aristotle, 1944; 1952r, p. 339). I have yet to discuss Aristotle's views about which objects are most worthy of the contemplative reflection of philosophical wisdom.

Having now differentiated between intuitive knowledge and scientific knowledge I am able, as foreshadowed on page 214 to proceed to close the Level 1 articulation of Proposals III and IV by further articulation of the manner in which intuitive

knowledge and scientific knowledge are implicated in philosophical or theoretical wisdom, and how, through practical wisdom they are linked to the moral virtues.

Nous, which comes from without, which is the substance of the unmoved mover, and which informs no part of the body, partakes of the intellectual domain of the soul. In sparking intuition, *nous* is first implicated in the generation of the highest form of factual knowledge, self-evident or intuitive truth—things exist, birth is followed by death, water quenches. As earlier explained on page 257 such truths are established through a process of induction occasioned by sense perception and memory which account for experience. Intuitive fact so established, when it defines terms of premises correctly formulated and appropriately commensurate with the terms of conclusions, serves as the foundation for scientific reason, that process of inference which results in scientific fact, and knowledge of the universals which constitute the body of Science. When acting in unison as philosophical wisdom, intuition and scientific reason may contemplate the unmoved mover, and from such contemplation, which is the highest cognitive state available, theology, a Science, emerges. Philosophical wisdom may contemplate mathematics, or it may contemplate the physical realm, from which contemplation the universal body of Science emerges.

Intuition and scientific reason, when they arbitrate over appeals thrown before them by practical wisdom, that agent of the calculative soul charged with determining everyday activity appropriate for the virtuous life, thus lie at the heart of the human ethical dimension and at the same time inform practical wisdom in its capacity as intellectual referent for the moral virtues. And from practical wisdom's repeated appeals to philosophical wisdom emerge, *inter alia*, economics, known then as household management, and political philosophy.

I have now completed Level 1 articulation of Proposals (III) and (IV) in so far as they can be completed without reference to their connection to Proposal (V). I begin discussion of Proposal (V). on the next page.

Level 1 Articulation of Proposal (V) Opened and Closed

I proceed to discuss Aristotle's political philosophy and during the discussion I

Proposal (V)
Aristotle's skilful bringing of such Science and Ethics to his political philosophy, and his argument in that philosophy that the *Polis* or gathering of humans, being based on natural law imperatives, was essentially stable and good.

complete Level 1 articulation of Proposal (V), and its attendant Level 2 articulation of the term *Polis*. In discussing Aristotle's political philosophy and the central position Science and

Ethics occupy within it, I also close Level 1 articulation of all Proposals (I) through (IV).

Aristotle's lectures on political Science, which we know today as the books called the *Nicomachean Ethics* (Aristotle, 1934, 1952g) and *Politics* (Aristotle, 1944, 1952r), were prepared for, and attended by, citizens in preparation for the practical art of statesmanship (Burnet, 1913, pp. 10 - 11) in a polity in which they, the citizens, participate in government, and rule one another in turn. These facts in themselves announce Aristotle's politics as an active practical Science. As earlier discussed on page 237, the *Nicomachean Ethics* (Aristotle, 1934, 1952g) focuses on the individual and how they may become virtuous, just and happy. I also reveal below that the *Politics* (Aristotle, 1944, 1952r) focuses, *inter alia*, on the state and how a virtuous, just and happy state may be brought into existence. Aristotle posits, on the basis of scale, and on final and material cause, that the happiness, virtue and justice of the state is a higher order of importance than that of the individual.

Out of the relationships between man and woman, and master and slave, family arises, and it is a natural order for sustaining life, since for this purpose neither man nor woman is whole or complete in themselves *Politics* I 1252a25 – 30 (Aristotle, 1944; 1952r, p. 445). Assemblies of families constitute a village which provides "something more than supply of daily needs" *Politics* I 1252b15 (Aristotle, 1944; 1952r, p. 445). When a number of villages join together such that as a group they approach self-sufficiency, the state is formed and the state is better able to meet the temporal needs of the gathering of people, the exoteric P(p)olis. The state is the natural end of the natural emergence of family and village and because "what each thing is when fully developed we call its nature" *Politics* I 1252b30 – 1252a (Aristotle, 1944; 1952r, p. 446), and because "self-sufficing is the end and the best"

Politics I 1252a (Aristotle, 1944; 1952r, p. 446), the state is in this sense the final cause of the good or virtuous life. “A consideration of the prominent types of life shows that people of superior refinement and of active disposition identify happiness with honour. For this is roughly speaking the end of the political life” *Nicomachean Ethics* I 1095b20 – 25 (Aristotle, 1934; 1952g, pp. 340 - 341). Eternal forms inhere in final causes and it is in this sense that the state, as the final cause of the good life, is stable—a conclusion germane to the demonstration of discussion Proposal (V).

Because the state is a creation of nature, it is naturally prior to man.

The proof that the state is a creation of nature and prior to the individual is that the individual, when isolated, is not self-sufficing and therefore he is like a part in relation to the whole. But he who is unable to live in society, or who has no need because he is sufficient for himself, must be either a beast or a god: he has no part of a state. A social instinct is implanted in all men by nature, and yet he who first founded the state was the greatest of benefactors. *Politics* I 1253a25 - 35` (Aristotle, 1944; 1952r, p. 446)

The exoteric state emerges from natural law imperatives of the gender divide, and from the nourishment and security opportunity inherent in human settlement and place. Thus in a second sense at the level of material cause, the state is natural and stable—a second demonstration of the claim made in discussion Proposal (V). There is no contradiction in the state’s being prior to man and also being founded by a human, when someone or perhaps some group formed a constitution, because whereas the natural state is the final cause, after founding, the ongoing nurture, law making and administration are efficient causes (F. D. Miller, 2007, p. 15). The idea or essence which informs the gathering, when expressed as a constitution, and subsequently transferred to the efficient cause for action, may be thought of as the formal cause (F. D. Miller, 2007, p. 14). The form of the constitution would be coeval with the binding sentiment that occasions the cognitive gathering of the esoteric *Polis*. According to Aristotle, to have a just state which brings happiness to many is more important than to have one or a few happy citizens. The esoteric *Polis* is the cognitive gathering predicated on social instinct implanted in mankind by nature. It is a gathering which is also predicated on a balanced soul contemplating happiness with justice.

Aristotle is certainly under no illusion about what a problem it is for mankind to be imbued with a seeking for justice, and about the consequences abandonment of that seeking might bring:

For man, when perfected, is the best of animals, but, when separated from law and justice he is the worst of all: since armed injustice is the more dangerous, and he is equipped at birth with arms, meant to be used with intelligence and virtue, which he may use for the worse ends. Wherefore, if he have not virtue, he is the most unholy and the most savage of animals, and the most full of lust and gluttony. But justice is the bond of men in states, for the administration of justice, which is the determination of what is just, is the principle of order in political society. *Politics* I 1253a30 - 1253b (Aristotle, 1944; 1952r, p. 446)

The work of promoting justice will not be easy: the young balk at the hardy life, and strong law should fix their “nurture and occupation” *Nicomachean Ethics* X 1079b35 (Aristotle, 1934; 1952g, p. 434). Reinforcing habituation is required even in adulthood. Such laws should “generally speaking cover the whole of life; for most people obey necessity rather than argument, and punishments rather than the sense of what is noble” *Nicomachean Ethics* X 1180a - 1180a5 (Aristotle, 1934; 1952g, p. 434).

Furthermore, “punishments and penalties should be imposed on those who disobey and are of inferior nature, while the incurably bad should be completely banished” *Nicomachean Ethics* X 1180a5 – 10 (Aristotle, 1934; 1952g, p. 434). Again, the punishment should fit the crime *Nicomachean Ethics* X 1180a10 – 15 (Aristotle, 1934; 1952g, p. 434).

Aristotle identifies the “points the statesman should keep in view when he frames his law” *Politics* VII 1333a35 - 40, (Aristotle, 1944; 1952r, p. 538):

...he should consider the parts of the soul and their functions, and above all the better and the end; he should also remember the [40] diversities of human lives and actions. For men must be able to engage in business 1333b and go to war, but leisure and peace are better; they must do what is necessary and indeed what is useful, but what is honourable is better. On such principles children and persons of every age which requires education should [5] be trained. *Politics* VII 1333a35 - 1333b5 (Aristotle, 1944; 1952r, p. 538)

In addition, when it comes to the question of what *Polis* is the best kind of *Polis* either in the esoteric and ideal, or the exoteric and practical realms, Aristotle’s

findings, for all the enduring and relevant advice they contain, also provide instructive insight into the then Athenian society in which they were grounded.

Aristotle held that the actual “constitution or government [is] an arrangement of the inhabitants of the state” *Politics* III 1274b35 – 40 (Aristotle, 1944; 1952r, pp. 471, my square brackets), its formal cause, as Miller earlier explained on page 265, and in Aristotle’s Athens it was only the citizens who might participate in governing—slaves, resident aliens, children “too young to be on the register” *Politics* III 1275a10 – 15 (Aristotle, 1944; 1952r, pp. 471 - 472) old men “relieved of their duties” (ibid), and accidental citizens, those who enjoy the benefits of citizenship through patronage, may not govern. In the strict sense, “he [literally that is, not she] who has the power to take part in the deliberative or judicial administration of any state is said by us to be a citizen of the state” *Politics* III 1275b15 – 20 (Aristotle, 1944; 1952r, p. 472, my square brackets). The exoteric state “is a body of citizens sufficing for the purposes of life” *Politics* III 1275b20 (Aristotle, 1944; 1952r, p. 472). The population of citizens, slaves, artisans, women, and protected visitors, and the “size and character [the natural resources] of the country”—*Politics* VII 1326a5 – 10 (Aristotle, 1944; 1952r, p. 530, my square brackets) are manifestations of the exoteric state.

Within such classical Greek understandings, and a prospect of Greek city-stateness increasingly under the influence of victorious Macedonian Kings, the Stagirite, Aristotle, found the courage to persevere with, and answer that key question—what does it mean to be well governed? While at the outset Aristotle is critical of Plato’s so-called utopian republic *Politics* II 1260b30 – 1264b24 (Aristotle, 1944; 1952r, pp. 455 - 460) and he is particularly scathing of shared wives and children, he does define an ideally best *Polis*. In esoteric form it is a state in which the individual virtues of each and every citizen coincide with, and inform, a constitution predicated on happiness with honour under the patronage of the noble *Nicomachean Ethics* I 1095b20 - 25 (Aristotle, 1934; 1952g, p. 340), *Politics* VII 1325b - 1326a5 (Aristotle, 1944; 1952r, pp. 529 - 530). In esoteric form, the *Polis* is a gathering predicated on a balanced soul contemplating happiness with justice.

In the exoteric form of such a state individuals, citizens and the constitution are of one accord and the three paths to goodness and virtue, nature, habit and reason, are in harmony, such harmony being the outcome of legislation and education *Politics* VII 1332a40 - 1332b10 (Aristotle, 1952r, p. 537). Such a state, even were it possible to achieve, is not a matter of chance and the legislator's task is to "provide [for]" *Politics* VII 1332a25 – 30 (Aristotle, 1944; 1952r, pp. 536 – 537, my square brackets) its coming to be. Worldly details are offered about various aspects the best state, for example, its size of population and area, its geography and defensibility, its education system, and the number and presence of non-citizens. Aristotle's starting point is that the perfect state "cannot exist without a due supply of the means of life" *Politics* VII 1325b35 – 40 (Aristotle, 1944; 1952r, p. 530) and neither can it be predicated on anything "impossible" (ibid).

Unfortunately, the state practically achieved will be a kind of second best even though the wish was that "our state be constituted in such a manner as to be blessed with the goods of which fortune disposes (for [30] we acknowledge her power)" *Politics* VII 1332a 25 – 30 (Aristotle, 1944; 1952r, p. 537). The natural law imperatives of Moira, or fate, present in totem ritual and space, and in Platonic times, continue their lingering presence in Aristotle's *Polis* but under the guise of fortune.

Ever the realist, Aristotle searches for the second best state by starting from the reality which surrounds him. He surveys the range of options, justifies his choice of second best, and as earlier explained, provides guidance to politicians charged with governance and practical affairs of state. Aristotle's views on imperfect humanity in general, and his general definition of justice in particular, play a crucial role in his final choice of the so-called second best form of government. He classifies the six possible forms of government according to rule-by-one, few or many and whether rule is for the common interest, in which case it is correct rule, or whether rule is for the private interest of the rulers and consequently perverse rule *Politics* III 1278b5 - 1279a20 (Aristotle, 1944; 1952r, pp. 475 – 476). These six forms of government are illustrated in Table 29.

Aristotle finally opts for polity, rule by the many for the common interest, the many being citizens in possession of arms who are capable of both obeying the law and

ruling by it, which law in the first place gives office based on merit or deserts *Politics* III 1288a10 – 15 (Aristotle, 1944; 1952r, p. 486). Aristotle reaches his final

Table 29: Six Forms of Government		
# Ruling	Common Interest (Correct)	Private Interest of the Rulers (Perverse)
one	kingship	Tyranny
few	aristocracy	Oligarchy
many	constitutional government (polity)	democracy of the needy
Source: Constructed by Ian Eddington from Aristotle. (1952). <i>Politics</i> . (3 7, pp. 476 – 477). In R. M. Hutchins <i>Aristotle II</i> . Chicago: William Benton.		

choice through compromise predicated first on the disqualification of kingship, his preferred choice, because of the impossibility of finding the perfect ruler and second, on the disqualification of aristocracy, rule by a few good men, his second choice, because not enough men of excellence are to be found even for this form of government. Under polity, which combines the best parts of democracy and oligarchy, a kind of middle class rules because it separates the very rich from the very poor. The law giver and administrator must be ever watchful for the state’s preservation because it will fall if citizens of superior quality wanting the regime become outnumbered by citizens of inferior quality not wanting it *Politics* IV 1296b15 (Aristotle, 1944; 1952r, p. 496). Quality is measured by freedom, wealth, education, and good birth.

Aristotelian political Science which treats of “fine and just actions” *Nicomachean Ethics* I 1094b15 (Aristotle, 1934; 1952g, p. 339), and in which legislators “stimulate men to virtue and urge them forward by the motive of the noble” *Nicomachean Ethics* X 1180a5 (Aristotle, 1934; 1952g, p. 434) and which aims at making the citizens “good and capable of noble acts” *Nicomachean Ethics* I 1099b30 – 1100a (Aristotle, 1934; 1952g, p. 345) is the architectonic Science of all the practical Sciences. It is the Science:

... that ordains which of the sciences should be studied in a state, and which each class of citizens should learn and up to what point they should learn them; and we see even the most highly esteemed of capacities to fall under this, e.g. strategy, economics, rhetoric; now, since politics uses the rest of the sciences, and since, again, it legislates as to what we are to do and what we are to abstain from, the end of this science must include those of the others, so that this end must be the good for man. ... These, then, are the ends at which our inquiry aims, since it is political science, in one sense of that term. *Nicomachean Ethics* I 1094a25 - 1094b10 (Aristotle, 1934; 1952g, p. 339)

The good person, and therefore the happy person, and more particularly the good ruler, will:

... be happy throughout his life; for always, or by preference to everything else, he will be engaged in virtuous action and contemplation, and he will bear the chances of life most nobly and altogether decorously, if he is truly good and four square beyond reproach. *Nicomachean Ethics* I 1100b15 – 25 (Aristotle, 1934; 1952g, p. 346)

What then is the esoteric *Polis*? It is the cognitive gathering predicated on the social instinct implanted in mankind by nature. Its necessary condition is a balanced harmonious soul in contemplation of happiness with justice.

I am now able, through summary, to complete the Level 1 articulation of Proposal (V), which completion is the key that at once closes the Level 1 articulation of Proposals (1) through (IV) and opens the way to completion of Level 2 and 3 articulation, and the conclusion of the chapter.

Level 1 Articulation of Proposal (V) Completed
Level 1 Articulation of Proposals (I) through (V) Closed

In the next five paragraphs, I provide an integrating summary closure of Proposals (I)

through (V).

Proposal (I)
Aristotle's finding that substantial natural beings compounded of <i>form</i> and <i>matter</i> exist, and that such existence is brought to human understanding because form, when it is transmitted by a prior member of the species, brings definition to substrate matter.
Proposal (II)
Aristotle's finding that metaphysical beings exist, and his explanation of how, through their extension in <i>nous</i> , they play a role in human understanding.
Proposal (III)
Aristotle's founding of an "objective" Ethics based on practical action indirectly informed, through practical reasoning, by a cognitive appeal to scientific reasoning
Proposal (V)
Aristotle's skilful bringing of such Science and Ethics to his political philosophy, and his argument in that philosophy that the <i>Polis</i> or gathering of humans, being based on natural law imperatives, was essentially stable and good.

In so much as man is a political animal, that is, he will esoterically and exoterically gather in a *Polis*, his chief political activity is the exercise of practical wisdom, a rational process which employs *nous* but which engages with the ongoing vicissitudes of life in the *Polis*. There

is also another deployment of the divine *nous* which, through its virtue of philosophical wisdom understood as intuition plus Science, contemplates the unchanging. Such rational contemplation also occurs when the mind is in act at the theoretical level in reflection about physics, mathematics and metaphysics and in search of understanding of beings that rank higher than mankind. Such movement occurs when the mind contemplates the

unchanging. All rational contemplation, *theoria*, activity of the mind, moves mankind closer to the divine.

Of the various scientific disciplines generated through *theoria* politics is architectonic to the practical sciences and metaphysics is architectonic to all sciences theoretical and practical. Mankind unfortunately cannot live continuously, or even in temporary fullness in a divine state, but can only approach it.

It is clear then, that both Science, earlier shown to be an act of mind proceeding to an end and not a passive meditation at all, and Ethics, earlier shown to be a correct discernment of the best practical means to the achievement of an end, inform the *Polis*. Science and intuition, as the two kinds of true knowledge, inform prudence or practical wisdom, and practical wisdom in turn answers calls made upon it by the raw emotions of the moral virtues. The chief purpose of the practical life is to pave the way for the higher order theoretical and contemplative life which occasions mankind's *ergon*—his work of realising the good life.

I have now completed Level 1 articulation of Aristotle's system in general, and his political philosophy in particular. In the next paragraphs, I proceed to close the Level 2 and Level 3 articulation first, by gathering up the key terms nuance inherent in the Level 1 articulation, and second, by discussing the manner in which that nuance informs development and understanding of the Thesis Proposition Statements.

Level 2 Articulation Closed

While Aristotle's forms, like the Platonic forms, are eternal, they have been brought down to earth and, through their role in the cause of nature, they inhere in it. Like Plato, Aristotle confines change to the sub-lunar world and in that world the bringing of form to matter accounts for change, for coming to be, being, and ceasing to be. Besides his theories of art and Ethics, Aristotle identified three areas of enquiry as rightful candidates for the study of knowledge largely for its own sake: physics, mathematics and metaphysics. Science concerns itself with isolating that which is unchanging in each of these fields.

In esoteric definition Science occurs when we know the four causes of being. Its method is the syllogistic demonstration of universal truths from intuited singulars, truth being that which can be no other. Science's domain is *nous*, and that part of the rational soul in which philosophical wisdom contemplates natural physical beings, mathematics, and the gods. Its constraints are the difficulty inherent in the selection of correct premises by induction and intuition. Because there are three classes of beings, metaphysical beings, organic beings and non-organic beings, and a diversity of beings within those classes, Science will beget numerous exoteric divisions of enquiry, the architectonic Science being theology, and the most noble among the practical Sciences being politics.

Ethics occurs esoterically when practical wisdom discerns between good and bad acts, or when in art, understood as skill of the artisan, that artisan acts from true reason of the skill needs of the job. Such is its method. Its cognitive domain is the calculative faculty of the rational soul in contemplation of the variable components of its objects, art, mankind, family and state. In this domain it engages with the lower moral virtues under the patronage of philosophical wisdom, and substantiates itself in mankind's highest purpose for work, his *arete*, or end, or final cause of happiness with virtue and justice, which *arete* cannot be obtained without the presence of practical wisdom and the right rule. Its cognitive constraint is human frailty and loss of will under desire and pleasure. Ethics is essential for politics, which in its legislative dimension, becomes the architectonic Science of all the practical Sciences.

The method of the esoteric *Polis* is cognitive gathering emerging from its final cause, the virtuous self-sufficient life. Its domain is the social instinct implanted in mankind by nature, which social instinct substantiates a political philosophy which explains the natural state as stable and good. Its constraint is the will's fall to desire and the passions.

Table 30 on page 273, assembled from the chapter content, captures my understanding of Aristotle's influence on the meaning of the key terms of this enquiry.

It is clear in Aristotle that the esoteric and exoteric are not separated by the barrier of Platonic form so that esoteric Science can more easily slip seamlessly into its exoteric existence as a reasoned body of practical expectations about the behaviour of real existing beings. So too can esoteric Ethics slip seamlessly into its exoteric

Table 30: Key Terms Nuance—Aristotle (BC 384 - 322)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>		
	Method	Sphere of Operations	Constraints
<u>Under Aristotle</u>			
Science	The syllogistic demonstration of universal truth from intuited singulars.	The faculty of the rational soul occasioned through the presence of <i>nous</i> when philosophical wisdom contemplates natural physical beings, mathematics and the gods, and also when it informs practical wisdom.	The difficulty of selecting correct premises through intuition and induction.
Ethics	Practical wisdom in discernment between good and bad acts or when, in art, practical wisdom informs true reasoning of the skills needed for the job at hand.	The calculative faculty of the rational soul and abode of practical wisdom; a condition and state of virtue which exists under the patronage of philosophical wisdom when practical wisdom engages with the lower moral virtues in sublimation of mankind's <i>arete</i> of happiness with virtue.	Human frailty inherent in the loss of will under desire and pleasure or the irascible.
<i>Polis</i>	The final cause of the gathering and natural state of happiness with honour.	That condition prior to mankind and that social instinct implanted in mankind and its flowering into the natural stable and good of the cognitive <i>Polis</i> .	The fall of reason and will to desire and the passions.

existence as a component of general, specific and political justice and the practical activity of decision making in everyday life. The exoteric *Polis*, the gathering of the natural state, exists as a second best solution, discernible by virtue of such existences as the laws, policing and punishment, education, and habituation it calls up.

Level 3 Articulation Opened and Closed

Table 31 on page 274 contains an integrating summary interpretation of the impact of the Table 30 key terms nuance on the three Thesis Proposition Statements.

CONCLUSION

In a sense, Aristotle made humankind more directly responsible for its own learning and for its own ethical behaviour. Gone was the partaking of the forms and their subsequent noetic recognition and in its place in the sub-lunar habitat was the hard grind of reason predicated on inference from carefully selected premises about existing real objects. Gone with noesis was the heavenly ethical utopia of the ideal *Polis* and in its place was a natural *Polis* which, when expressed exoterically, occasioned a state in which, every waking moment, mankind must continuously discern their own moral virtue according to circumstances. Even in the presence of all the problems faced by the intellectual virtues tasked with these responsibilities,

Table 31: Progressive Articulation of Thesis Proposition Statements—Aristotle (BC 384 – 322)

PART ONE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of Polis situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of Polis is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato's Political Philosophy	There is no nuance in the term Modern Age. <i>Polis</i> is an ideal, just and happy gathering or a city of ideas in which classical Greek values prevail and in which truth informs reason. Platonic <i>nous</i> is established as a divine element in mankind. Virtue qua state of mind is some kind of knowledge. Technical virtue as good-at-what is differentiated from moral virtue as absolute goodness <i>per se</i> . To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one's own and not another's business, and temperance as self-control, discerning between the harmful and the unharmful.
		Chapter 2 Key Terms Usage and Enquiry Methodology	The Pre-Modern and Modern Age attributions remain unchanged. A methodology for esoteric definition of Science, Ethics and <i>Polis</i> established and applied. Under this methodology Plato's <i>Polis</i> is found to be the cognitive gathering in the republic of ideal and absolute forms. Platonic <i>nous</i> established as the divine element in mankind.
		Chapter 3 Science, Ethics and <i>Polis</i> in the Political Philosophy of Aristotle (BC 384-322)	The Pre-Modern and Modern Age attributions remain unchanged. Aristotelian <i>nous</i> established as a metaphysical being and the divine element of human reason. Human divinity understood as the movement towards but not full attainment of the pure act of the impersonal unmoved mover through <i>theoria</i> . <i>Polis</i> established as a stable gathering predicated on a social instinct implanted in mankind and the final cause of mankind's <i>arete</i> . To be virtuous is to act under a condition in which practical wisdom, under philosophical wisdom's patronage, is active in realms of the so-called lower moral virtues, truthfulness, and the like in search for, and sublimation of, mankind's <i>arête</i> of happiness with justice. It is practical reason's discernment between good and bad acts.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science, and Ethics, and their Presence in Plato's Political Philosophy	There is no nuance in the term Modern Age. Articulation of Metaphysics is not yet begun. Science is knowledge of the unchanging or that which can be no other received through beholding of the one and the forms. Ethics is reasoned moral activity inherent in <i>nous</i> ' discernment of the harmful from the unharmful. To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one's own and not another's business, and temperance as self-control, discerning between the harmful and the unharmful.
		Chapter 2 Key Terms Usage and Enquiry Methodology	The Pre-Modern and Modern Age attributions remain unchanged. Platonic Science is the final partaking of the forms which occasion understanding by reminiscence. Platonic practical Ethics is <i>nous</i> discerning between harmful and unharmful pleasure occasioned by the four classic Greek virtues wisdom, justice, valour and temperance which inhere both in the human soul and the ideal <i>Polis</i> .
		Chapter 3 Science, Ethics and <i>Polis</i> in the Political Philosophy of Aristotle (BC 384-322)	The Pre-Modern and Modern Age attributions remain unchanged. Science is the syllogistically reasoned demonstration of fact understood as truth or that which can be no other. It is knowledge of the four causes of being. Similarly: Aristotelian practical Ethics is established to be practical wisdom's discernment, under theoretical wisdom's patronage, between good and bad acts as these are referred to it by the lower moral virtues. For art in act, practical Ethics is true reasoning of the correct rule. Aristotelian metaphysics is established as the architectonic Science begotten when theoretical wisdom contemplates the transcendent.

Table 31 (Continued)

PART ONE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 1 Movement from Religion to Philosophy, Emergence of Science and Ethics, and their Presence in Plato's Political Philosophy	There is no nuance in the term Modern Age. Articulation of Metaphysics is not yet begun. Science is knowledge of the unchanging or that which can be no other received through beholding of the one and the forms. Ethics is reasoned moral activity inherent in <i>nous</i> ' discernment of the harmful from the unharmed. To be virtuous in a practical sense is to be in act on behalf of <i>nous</i> , always in obedience to its own particular virtue, its <i>taxis</i> and <i>cosmos</i> of obedience to the law, justice as minding one's own and not another's business, and temperance as self-control, discerning between the harmful and the unharmed.
		Chapter 2 Key Terms Usage and Enquiry Methodology	There is no nuance in the term Modern Age. Platonic practical Ethics is <i>nous</i> discerning between harmful and unharmed pleasure under the aegis of four classic Greek virtues wisdom, justice, valour and temperance which inhere both in the human soul and the ideal <i>Polis</i> .
		Chapter 3 Science, Ethics and <i>Polis</i> in the Political Philosophy of Aristotle (BC 384-322)	There is no nuance in the term Modern Age. Aristotelian practical Ethics is established to be practical wisdom's discernment, under theoretical wisdom's patronage, between good and bad acts as these are referred to it by the lower moral virtues. For art in act, practical Ethics is true reasoning of the correct rule.
4	<p style="text-align: center;">Integrating Summary of Part One</p> <p>By building on the legacy of Presocratic writers and Plato, Aristotle established a political philosophy predicated on a naturally stable <i>Polis</i>, in which the intellectual virtues of theoretical and practical wisdom arbitrate in discerning correct reason and right desire in matters of moral conduct referred to them by the irrational soul. In this esoteric <i>Polis</i> mankind realises its <i>ergon</i> of happiness with justice and honour under patronage of the beautiful. Justice is predicated either on merit or on equality of exchange. Science, as knowledge of the four causes of being, knowledge of that which can be no other, proceeds through its method of syllogistic reasoning from intuitively induced singular terms to deduced universal terms. Science as the universal body of true knowledge about the sub-lunar world results when philosophical wisdom contemplates existing beings. Science as metaphysics, a theology, occurs when theoretical philosophy contemplates the transcendent.</p>		

the natural state of the now more earthy and actual Aristotelian *Polis*, by virtue of mankind's predisposition and social instinct to gather, was stable and inherently good. Mankind, with a little help from culture and habituation, education, and the law and punishment, could more fully realise its *ergon* and *arete*.

Aristotle describes Science to be that which searches as best it can across the three dimensions of theoretical philosophy, and even within the calculative and critical domains too, to know the unchanging, the-that-which-can-be-no-other. He pronounces metaphysics a theology distinct from totem ritual, religion and votive rites, and names it the architectonic Science of theoretical philosophy, with physics, broadly defined, then mathematics respectively next in nobility. All of these three sciences are compatible components of theoretical philosophy. Within its practical domain philosophy encompasses Ethics and a range of so-called practical sciences of which political Science is architectonic. Science informs Ethics in a stable *Polis* predicated on a natural instinct implanted in mankind.

As further chapters of this enquiry demonstrate, Aristotle's explanation of the good life was to remain influential until the arrival of a so-called Modern Age.

Part Two

From Aristotle (BC 384 – 322) to Jean Buridan (AD c.1300 – c.1358): Science, Ethics and *Polis* and Transition from Philosophy to Theology

Chapter 4

Science, Ethics and *Polis* and the Fall of Rational Metaphysics to Christian Theology

INTRODUCTION

General Work of the Chapter Outlined

Chapter 3 revealed Aristotle's teaching that mankind is possessed of a tripartite soul in which intellectual virtues of theoretical and practical wisdom not only serve its scientific and calculative domains, but also arbitrate over questions of moral virtue addressed to them by an irrational domain and its appetitive needs. Ethics in this construct is a practical affair and mankind, possessed of divine reason, exists in a universe of independent beings accessible through that reason. The one, the first principle of being, is not a personal god nor does the one create the materials of which the world was assembled. Scientific knowledge, second only to intuitive knowledge, is obtained through reasoned demonstration. Such depiction, by way of general statement, is the starting point of this chapter.

In the integrating postulation of this enquiry Aristotle's heritage is a mixture of essential preoccupations underlying a transition from religion to philosophy. These preoccupations, mentioned earlier on page 24, are *physis*, the nature of nature, represented by physics and related so-called Sciences; god, as thought thinking itself,



Source: (Gozzoli, 1464-65). (artist). Detail from *Augustine Departing for Milan*. (fresco). Psidal Chapel, Sant'Agostino, San Gimignano: Web Gallery of Art.

represented by metaphysics considered to be a Science and a theology; and soul part biological, part divine.

Aristotle's construct of *physis*, god and soul was to fracture over the next millennia and first fault lines appeared as a result of intermingling of Greek rational heritage with Jewish revelation doctrine. These fault lines widened under impact of a developing Christianity. By the time of Augustine (AD 354 - 430), Aristotelian rational Ethics had been sidelined by absolute Ethics of revealed faith, Christ as divine *Logos*—God's revelation of His creation of the world and all beings within it—had become favoured above *nous* as *logos* and Aristotle's categorical explanation

of such being, and a personal loving Christian God had largely superseded Aristotle’s impersonal one. A Jewish God of wrath had for some become a Christian God of love. The depiction of this paragraph, arrived at through engagement with translations of original and/or redacted writings checked and balanced against twentieth and twenty-first century research, is, by way of general statement, the finishing point of this chapter.

I link the starting point to the finishing point by tracing a changing relationship between Science and Ethics from Aristotle’s esoteric but earthy *Polis* to Augustine’s Christian and spiritual *Polis*. I attend to the chapter’s general purpose and work in three sections. In Section I, after first addressing elements of Semitic Mythology and Persian thought considered germane to development of Judaism, I trace a largely

Table 32: First Explanation of Names Used in the Text

Term	Usage
Hebrew and Jewish	Distinctions in meaning can be made between the words Hebrew and Jewish but for the purposes of this enquiry the two words are considered synonymous in that they are used in a simple sense to differentiate the views revealed in Alexandria through translation of the <i>Septuagint</i> from those found amongst Greeks.
<i>Septuagint</i>	The <i>Septuagint</i> is a version of the <i>Jewish Bible</i> in development, a version which was translated into common Greek circa BC 285 - 247 (Abrahams, 1902, p. 321; DeSilva, 2004, p. 42). It was used by Jews in the Alexandrian diaspora and includes books not present in the <i>Jewish Bible</i> in use today. The full authorised version of the <i>King James Bible (Holy Bible, 2009b)</i> contains these books, with the exception of <i>Psalm 151</i> , in its <i>Apocrypha</i> . These books are <i>Judith</i> , <i>The Wisdom of Solomon</i> , <i>Tobit</i> , <i>Sirach (or Ecclesiasticus)</i> , <i>Baruch</i> , <i>First and Second Maccabees</i> , the two books of <i>Esdras</i> , various additions to the <i>Book of Esther (10: 4 - 10)</i> , the <i>Book of Daniel (3: 2 4- 90; 13; 14)</i> , and the <i>Prayer of Manasseh</i> and they range in age from the fourth century BC to so-called <i>New Testament</i> times. The <i>Septuagint</i> is the version of the Jewish bible referred to in the so-called <i>New Testament</i> and by the Apostolic Fathers (Baltzly, 2009, n. p.). Codification of the so-called <i>New Testament</i> is conjectured occurring circa (AD 49 – 150) and there is no escaping the fact that Greek was the language used (R. Brown, 1997, p. xxxv).
Apostolic Fathers	Church Fathers is a term reserved for theologians and teachers whose work served as precedent for a then developing Church. Apostolic fathers are those Church Fathers who lived within one or two generations of the Apostles: for example Clement of Rome (c. AD 96), and Ignatius of Antioch (c. AD 35 - 110).
Early Greek Fathers	Greek, the language of the <i>New Testament</i> , was used by the early Christian Fathers until the time of Tertullian (AD 160 - 220) who, circa AD 200 wrote a work in Latin. After this time Latin gradually became the language of the Western Church Fathers. But in Byzantium the Eastern Church Fathers continued to write in Greek. In other places some writers (St. Ephrem, AD 306 - 373) wrote in Semitic vernaculars such as Aramaic and Syriac-Aramaic. Greek Fathers is the general name used for those who wrote in Greek. The so-called Early Christian Fathers were writers implicated in establishing early church dogma.
Source: Compiled by Ian Eddington from Baltzby, D. (2009). <i>Stoicism</i> . (n. p.). Metaphysics Research Institute, Stanford University: Stanford; Aquilina, M. (1999). <i>The Fathers of the Church</i> . (pp. 1 - 17). Huntington, Illinois: Our Sunday Visitor, Inc.; Brown, R (1997). <i>An Introduction to the New Testament</i> . (p. xxxv). Doubleday: New York. (Aquilina, 1999; Baltzly, 2009; R. Brown, 1997)	

Alexandrian emergence and intermingling of Hebrew and Greek traditions, also acknowledging Jewish-Greek intermingling in Judea and Palestine. Section 1, which engages with commentary and exegesis by twentieth and twenty-first century scholars and with works cited or not cited by those scholars, reaches to a range of specialisations—history, church history, archeology, religious studies, philosophy, and literary analysis—in its task of tracing Judeo-Greek intermingling to the time of

Philo and the advent of Christ. In Section 2, which traces Jewish-Greek intermingling from Philo and the advent of Christ to Augustine (AD 345 – 430) during a time of Christianity in development, I discuss how Aristotelian rational moral virtues fell to absolute virtues of faith, and how philosophy, theology and Science might be said to have become alienated each from the other. Engagement with Johannine-Pauline Christology, Hellenisation theory, critical commentary again by twentieth and twenty-first century scholars and works cited or not cited by them, and with general exegesis and analysis of scriptures constitutes the methodology of Section 2. Section 3 is a brief check and balance of the validity of the chapter's use of Christology, Hellenisation Theory and exegesis of scripture conventions, given dating and author uncertainties of books of the Christian biblical canon, and possible redaction of some books by others than their original writers.

Discussion of Section 1 occupies pages 306 to 307, that of Section 2, pages 307 to



Source: (di Cristoforo Fini, 1428-30). (artist). *St. Catherine Alexandria Disputes with the Pagan Philosophers before the Emperor*. (fresco). Barda Castiglioni Chapel of San Clemente in Rome: Web Gallery of Art. Masolino da Panicale is a nickname of Tommaso di Cristoforo Fini (c. 1383 – c. 1447).

338 and that of Section 3 pages 340 to 357. Tables like Table 32 progressively outline conventional and widespread meanings of terms employed in enquiry discussion, some of those terms themselves not being entirely free from contestation. However these terms serve only general and descriptive marker purposes.

Specific Work of the Chapter Outlined

The specific purpose and work of the chapter is to trace changes in meanings of the enquiry's key terms Science, Ethics and *Polis*, over the seven and a half centuries from Aristotle (BC 384 – 322) to Augustine (AD 354 – 430), and to bring those changed meanings to articulation of the Thesis Proposition Statements. This specific work runs throughout Sections 1, 2 and 3. The task is complex and for ease of understanding I begin with a bare and simple four-article statement of the integrating argument from which key terms nuance is subsequently extracted. The four article statement is constructed on an understanding that authorship of scriptures attributed to John (AD c.6 – 100), Paul, (AD c. 5 – 67) and others is contested and that such contestation is inherent in names usage employed throughout this enquiry. For example a phrase according to Paul means

according to the author or authors of the writing attributed to Paul including possible redaction as well. Such a convention is in widespread use and the focus in this enquiry is first and foremost on meaning perceived in the writing and the date of the writing and/or redaction rather than on still important questions about original and/or redacting authorship and the like.

Integrating Argument of the Chapter Stated in Four Articles

Article (I)

(Ia) In general, prior to intermingling of Greek and Hebrew ideas in Alexandria, detectible in works by Philo (BC 20 – AD 50) written some two centuries after translation of the *Septuagint* into Greek likely circa BC 283/5 - 246/7 during the reign of Ptolemy Philadelphus, the Greek god was impersonal, moral virtues were reasoned, god did not create the materials out of which the world was assembled, and god, thought thinking itself, was present in the form of *nous* as an essential part of mankind's soul and nature.

(Ib) Under a Hebrew explanation, God created the universe, revealed His presence, provided for His people, gave the law and made prophesy. This personal God was transcendent and His work on earth was done through the agency of angels. There was no sense in which fate had power over this Hebrew God and no sense in which the Hebrew God of the *Septuagint*, the *Jewish Bible* in development, was a nature god in the Greek way.

Article (II)

Through cultural intermingling, scholarly activity, and translation work that accompanied Egypt's transition from Greek to Roman rule, Greek *logos* or *nous* was identified with the Hebrew *Memra* understood as God's creation, revelation and providence expressed in a personified form as the Word of the Lord, and subsequently, as the Wisdom of the Lord.

Article (III)

Through the advent of Christ, God became more transcendent, the historical Christ found no evil in nature, and subsequently the sin of man's fall became redeemable through Christ's death and resurrection. The apostle John identified Christ incarnate with the *L(l)ogos* and later, the Jewish Roman citizen and missionary, Paul, developed and consolidated the identity of Christ as *Logos*. Even so, evil and sin

remained clearly present after Christ's resurrection and Paul discerned sin in the flesh of mankind.

Article (IV)

Early Greek Fathers reinforced the idea of Christ as *Logos*, in part to counteract a return of Greek rationalism. During this period and ending with Augustine (AD 345 – 430) a number of developments occurred.

(IVa) The *Logos* was placed in the rational domain of the Greek soul, and sin in the irrational domain, thereby beginning a colonisation of Greek rational and practical virtue by Christian absolute virtue, and Greek moral virtue by a moral good-bad divide of sin.

(IVb) Sin, which was found in the will of man and not in nature, was also found to have tainted nature thereby making nature's evil a moral evil redeemable through Christ as *Logos*, rather than to be addressed in a Greek way through reason as *logos*.

(IVc) Aristotle's four-causes explanation of being, and through that being, mankind's rational access to Science and Ethics, was, along with the philosophy on which it was partly based, ejected in favour of a moral teleology with God in Christ as the cause of all in all—a full colonisation, by a Christian moral virtue, of both the Greek explanation of being and its attendant scientific and metaphysical soul.

(IVd) Following Tertullian (AD 160 - 220) and adoption of Latin by Christian fathers *Logos* understood as *nous* was translated as Word. Use of the word *nous* was prohibited in the Nicene Symbol (AD 325). Later, following condemnation of the Stoic duality doctrine of *Logos-as-thought-or-potential* and *Logos-as-action-or-God's-thought-in-action* at the Synod of Sirmium (AD 451), the word *Logos* fell into disuse as Latinisation progressed. God the Father, as-*Memra*-as-Word, and Christ the son, as-*Logos*-as-Word, were one in creation, in nature, and in the moral soul of man. Greek rational virtues had been temporarily replaced by Christian virtues of faith. Again, Aristotelian scientific understanding of cause and being had become, relatively speaking, temporarily irrelevant.

Full discussion of Articles (I) through (IV) begins in Section 1 below with its focus

Background Comment on the Use of Hellenisation and Pauline-Johannine Christology as Partial Scaffolding for Elucidation of Articles (I) through (IV)

In part of this chapter I employ, *inter alia*, received theory of both Hellenization, (Barclay, 1996; Casey, 1964/2009; Danielou, 1964; Dunn 2006; J. Dunn, 2012; R. M. Grant, 1966; Guitton, 1963; Harnack, 1961, 1978; Hengel, 1974; A. J. Holmes, 2001; MacMullan, 1984; Metzger, 1989; G. F. Moore, 1997; Plantigna, 2001; Rothschild & Schröter, 2013; Stark, 1996; van Groningen, 1967; R. M. Wilson, 1959) and Johannine and Pauline Christology (R. Brown, 1994, 1997; Brueggemann, 2008; Burns, 1911; J. Crossan, 1991, 1994; Ehrman, 2007; Fee, 2013; Inge, 1917a; Karkkainen, 2003; J. F. McGrath, 2001; Nietzsche, 1924; Pollard, 2005; T. Rees, 1917; van Kooten, 2003) in enunciation of Articles I through IV. In these fields of enquiry so-called received theory is not to be taken as ‘the’ received theory, or ‘a’ received theory, but rather at the very least in the case of Hellenisation, an acceptance that through earlier and ongoing intermingling of Greek and Jewish thought, Greek influences are carried into early Christianity in development. Likewise, Judaic and Greek influences are present in Johannine and Pauline Christology and subsequently during Christianity in development to the time of Augustine (AD 345 – 430) within a broad framework of Hellenisation so understood.

A revived interest in Gnosticism following discovery of the Nag Hammadi codices in 1945 has produced a large body of literature providing new insight, challenging questioning, and attendant rejoinder about matters Judeo-Greek which in turn has led to further articulation of Hellenisation and Johannine-Pauline Christology—a small sample now cited (Braake, 2012; J. D. Crossan, 2008; Desjardins, 1994; Gieschen, 1998; Goldingay, 2010; Hill, 2004; Hurtado, 2005; K. King, 2003, 2005, 2010; Koester, 1997; Mayer, 2005a, 2005b, 2011; M. Meyer, 2012; Pagels, 1989a, 1989b, 1992; J. M. Robinson & Smith, 1997; Schäfer, 2012; Szulc, 2001; Wilken, 2003; M. A. Williams, 1999). Such literature addresses a plethora of wonderings. For example, interesting socio-political explanations are introduced, and contentions raised about such issues as: which voice is dominant, was Christianity Hellenised or Hellenism Christianised, was Mary Magdalene Christ’s mouth-kissing consort, Christ as Adam, whether Thomas was really a doubter or Judas really a betrayer, Paul’s belief in Christ as the one true God of Israel, that the LXX remained Paul’s consistent source, Christ as personified Wisdom, Paul the monotheist as proto-trinitarian, whether the Qumran community were Essenes, whether John the Baptist and/or Christ spent parts of their lives in the Qumran community, whether or not the Gnostics were the unified sect earlier scholars accepted them to be, and whether or not there was as much antagonism between Gnostics and so-called early Christian fathers as earlier scholars had contended, whether the Gnostics splintered from Christianity or whether Christianity was selectively assembled from vetted gnostic belief, or from push-pull-each-way-and-all from a turbulent or cooperative many, whether Gnosticism is a dubious category that should be dismantled, along with such terms as orthodox, heretical, proto-orthodox, proto-gnostic and many more as well, whether the gap between the Synoptic Gospels and the Gnostic Gospels is wide or otherwise, whether or not the *Gospel of Thomas* is a collection of Jesus’ sayings which dates from as early as AD 60 and whether Matthew and Mark used it as a source, and whether or not it is the very basis of the Q source sayings, whether in the face of argued widespread redaction and recension, certainty is a casualty, whether Abraham ever lived at all, and the list goes on.

When checked and balanced against research about Johannine-Pauline Christology and Gnosticism since Nag Hammadi, Hellenisation, under caveat, remains valid for enquiry purposes, of which more later beginning on page 340.

on Persian thought, Semitic mythology and intermingling of the Hebrew and Greek traditions, as intimated earlier on page 280.

SECTION 1: ELEMENTS OF PERSIAN THOUGHT, SEMITIC MYTHOLOGY AND INTERMINGLING OF HEBREW AND GREEK TRADITIONS

Integrating Discussion of Articles (I) Through (IV) Running Throughout the Chapter Begins.

A short statement by Rees frames the whole discussion of Section 1 and informs its structure and procedural logic.

To wit: according to Rees, Christ’s advent was coeval with an ongoing announcement of a transcendent Jewish God who made the universe and it occurred against “a heritage of ideas about the world consisting of a background of Semitic mythology, the revelation of the OT [*Old Testament*] with Jewish developments of it, certain elements from Persian thought, and ultimately the whole framework of Greek philosophy” (T. Rees, 1917, p. 210, my square brackets). Rees’ general statement echoes in views expressed by Meeks (2002, p. xvii), who acknowledges a similarly wide

range of influences in his discussion of the rise of Christianity, by Smith (2003b, pp. 27 - 143), who detects Western Semitic influences and a likely pre-Yahweh Jewish polytheism, and by Brueggemann (2008, pp. 5 - 6) in a more general context.

Discussion of intermingling of Greek and Jewish ideas thought to have occurred in Egypt as well as in other parts of the then Greek empire begins on page 291 following a background discussion of Rees' elements of Persian thought, Semitic mythology and their possible influence on Judaism, which occupies pages 284 to 291.

Persian Thought, Semitic Mythology and Their Possible Influence on Judaism

The Jewish component of Rees' 'heritage of ideas about the world' may have emerged from Semitic mythology but to have been differentiated from that mythology through its characteristic monotheistic revelation of one all-powerful God named Yahweh (Holy Bible, 2010, Exodus 20: 1 - 2). Differentiation of a Jewish monotheistic heritage from Semitic mythology is supported by Armstrong (1994, pp. 11 -14) who finds Yahweh a pagan god of polytheistic Canaan transported to Israel through migrations of cult followers and displacing other gods to become the only and one God of Israel.

Some scholars share a view, centred on a hint of redaction detected through exegesis of *Deuteronomy* 32: 8-9, and *Psalms* 82: 8, that the God Yahweh of the *Septuagint* emerged from a pre-exilic Divine Council of Gods worshiped before establishment of the Kingdom of Israel. Under such scholarship Yahweh was, prior to the exile of Jews to Babylon, one god (אלהים), whether chief or otherwise, of a pantheon of gods who, after the exile—other gods having become servant angels (מלאכים) during and after the exile—emerged as the one and only God over all nations. So portrayed, Yahweh-El of Genesis becomes Yahweh of *Exodus* with *Deuteronomy* 32: 8 – 9 and *Psalms* 82 taken together revealing evidence of both pre-exilic theology and post-exilic redacted theology (Heiser, 2006, p. 1; M. S. Smith, 2003b, p. 49).

Smith (2003a, pp. 39 - 42) conjectures Yahweh emerging from a Baal cycle of gods urging that the God Yahweh of the *Septuagint* at *Deuteronomy* 32: 6 is a god of the southern desert whose prior name Yahweh-El at *Exodus* 34: 6 results from an earlier

merger with, rather than displacement of, El—which god El may well have occupied one position in a Mother, Father, Son triad at the top of a Ugaritic pantheon.

Israel’s entry into Canaan may thus have occasioned, or have been facilitated by, such a merger. Ugarit, the mound Ras Shamra, accidentally unearthed in 1928 by a farmer and investigated in that same year by Albanèse (1929, pp. 16 - 21), and by Schaeffer in the following year and written up later (1939, *passim*), has an archaeological reach to late Neolithic times—fifth millennium BC—being called Ugarit since the beginning of the second millennium BC (Schaeffer, 1939, pp. 2, 8).

Background Information – Dead Sea Scrolls

The *Dead Sea Scrolls*, discovered from 1946 to 1956/7, consist of some 100,000 fragments, mostly on animal skin parchment, representing some 1400 literary works ranging from a complete *Great Isaiah Scroll* to those in limited fragment remains. Found to the West of the Dead Sea near Qumran and North and South of it (Qumran), the Qumran cache dates from BC 250 to circa AD 65, and some from other locations to circa AD 135. Next to the scrolls, the earliest known manuscripts, in part or in whole, of the Hebrew Bible, date from AD 800 – 1008. Scroll languages include Hebrew, Aramaic, Greek and Nabataean, and to date include some of the earliest known texts of the now *Hebrew Bible*.

Schaeffer notes an “intimate relationship existing between the Ras Shamra tablets and the literature of the Old Testament” (*ibid.*, p. 77).

Day (2002, pp. 22 - 25) also allows that Yahweh and Yahweh-El of the *Septuagint* are the same God but, on the

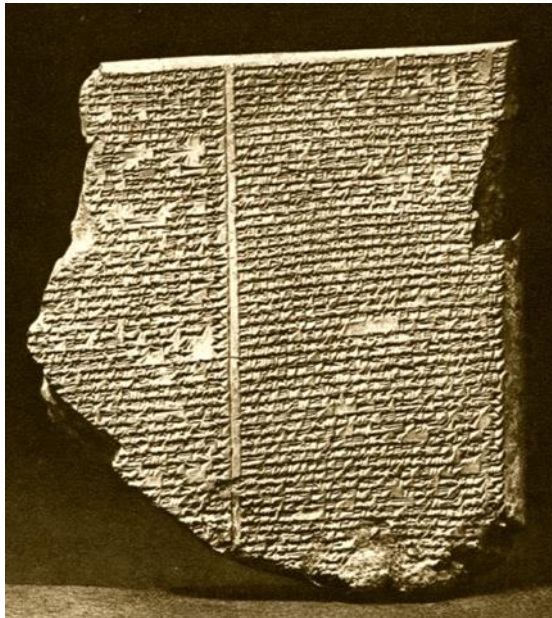
basis of an LXX *Deuteronomy* and a Dead Sea Scroll *Deuteronomy*, urges their transition to monotheism from their separate existence in a Divine Council of Gods where Yahweh may have been one of the sons of El. Cross & Freedman (1975, p. 45) and Parker (1995, pp. 548- 553) also urge Yahweh’s emergence from a polytheistic pantheon.

The explicatory square bracketed insertions [Elyon^{1, 2}] and [Yahweh’s] in the *Deuteronomy* row of Table 33, and [Yahweh] and [Elyon as chief or presiding god referring to El] in the *Psalms* 82 row of that same table are central to exposition of a dispute about Yahweh’s pre-exilic inferior god status or otherwise. The argument is constructed around a question of whether El and Yahweh, in both *Deuteronomy* 32: 8 – 9 and in *Psalms* 82, are the same or separate gods. My square bracket insertions help explicate the position taken by scholars holding that *Deuteronomy* 32 Verses 8 – 9, considered scribed earlier than *Psalms* 82, provide a referent allowing a contention that *Psalms* 82 contains traces of redaction of a pre-exilic understanding that El and Yahweh were separate gods. Polytheism is not in question. The argument hinges on whether the Most High [Elyon] of verse 8 of *Deuteronomy* 32 must be El rather than [Yahweh], the LORD of verse 9 (Heiser, 2006, p. 6). Parker (1995, p. 536) and

Babylonian creation myth recorded by Sumerians in the *Enuma Elish* (W. L. King, 1999), with ideas found in the *Septuagint* in development.

Commonality of ideas has been detected and scholarly exegesis and contestation

The Gilgamesh Tablet



Source: Picture of a fragment of a clay tablet, The *Gilgamesh Tablet* or *Flood Tablet*, or *Tablet 11*, being the upper right corner, 2 columns of inscription on either side, 49 and 51 lines + 45 and 49 lines. Neo-Assyrian. (BC 7th century). Cropped by Ian Eddington from the web pages of the British Museum, London.

about possible sharing mechanisms, and provenance as well, is ongoing there also being interest in a wide variety of social, theological and historical questions—Assmann, Beaulieu, and Collins respectively in (Johnston, 2007, pp. 17 – 31, 165 – 172, 181 - 187; M. S. Smith, 2010, pp. 91 – 340). Armstrong (1994, p. 13) says that by the eighth century BC the Israelis had begun to establish a distinct creation myth of their own—the *Septuagint* version of the creation by then already being but a perfunctory retelling of that in the *Enuma Elish*.

Scholarly comparisons of the flood sequences in Tablet 11 of the *Epic of Gilgamesh* (Kendall, 2012, pp. 190 - 211; Sandars, 1972, pp. 108 - 113)—a work anonymously pressed in Akkadian cuneiform some 2700 - 2500 years BC and unearthed in 1829 in excavations near or at Nineveh—with the flood sequences in *Genesis* 6 – 9 (Holy Bible, 2009b) also explore a possibility of Persian influence in *Genesis*, or an earlier common source for the two (George, 2003, p. 70; O'Brien, 1986, p. 61; Rendsburgh, 2007, p. 117; Wexler, 2005, p. 338). Seduri's advice to Gilgamesh to eat, drink and be merry in Tablet 10 is also compared with *Ecclesiastes* 9: 7 – 9 (Fant & Reddish, 2008, pp. 21 – 22) there being questions as to whether or not writers of *Ecclesiastes* copied *Gilgamesh* (van der Torn, 2000, p. 22). Henze (1999, p. 98) suggests that mocking description of Nebuchadnezzar's madness in *Daniel* 4 draws from the description of Enkidu in *Gilgamesh*. West summarises scholarship attributing influence of *Gilgamesh* on Homer (M. L. West, 2003, pp. 334 - 402).

Armstrong (1994, pp. 3 - 78), *inter alia*, traces god's polytheist emergence from human ideas beginning some 12,000 years BC to a monotheistic form circa BC 600.

In synopsis, Armstrong claims that polytheism, clearly evident in the Mesopotamian



Source: Cropped by Ian Eddington from William Blake's *Elohim Creating Adam*. (1795/1805). (colour print, ink and watercolour on paper). London: Tate Britain. (W. Blake, 1795/1805). Blake holds the Hebrew god to be a false god, mankind's fall not happening in the Garden of Eden but rather in mankind's ripping from the spiritual realm into materiality.

Enuma Elish (W. L. King, 1999) composed circa BC 1750, is taken as the norm in Mesopotamia. In Canaanite religion gleaned from cuneiform tablets of Ugarit, the Ugaritic stories stated to have been in the telling since some 12000 years BC, a pantheon of gods is revealed, headed by El Elyon, father of the

gods, Asherah his wife, and Baal a storm god, the Kingdom of Israel and its God Yahweh not yet being evident. Over the 500 years following the *Enuma Elish*, a discernible culture of Israel begins to emerge, traceable through writings of sources J and E who, between BC 950 – 850, write independent accounts of the history of Israel evident in *Genesis 2* and *3* of the *Septuagint*. In *Genesis 12* Abraham is said to worship El Shaddai, one of the names of the Canaanite god El Elyon who in *Genesis 18* talks with him. In *Genesis 28: 11-19* Jacob, a descendant of Abraham, climbs a dream ladder to talk with El Elyon. Jacob is said to make El Elyon his choice of god, his 'elohim', from the many and, on such reasoning, Abraham, Isaac and Jacob are said to be pagan polytheists like their contemporary Canaanites and Babylonians. El Elyon fades in *Exodus* where Yahweh, during the times of sources J and E, is said to have led the Jews from slavery in Egypt, being named Israel's war god at *Exodus 15: 3*. Yet polytheism is still evident at *Exodus 15: 11* and *18: 11*. After freedom from Egyptian exile—as earlier mentioned, archaeological evidence of a deliverance from Egypt is reported relatively meager to our times (Denver, 2002, p. 99; Meyers, 2005, p. 5)—during a time of threat to Israel from Assyria in BC 750, the prophets Isaiah, Amos and Hosea agitate against Israel's return to the worship of false gods and

invoke Yahweh’s protection, consolidating his position even in the face of Israel’s

Explanation of Sources JEDP ⁽¹⁾		
Wellhausen or Documentary Hypothesis Letter ⁽²⁾	Wellhausen or Documentary Hypothesis Classification	Brief Explanation ⁽³⁾
J	J equals Jahwist, conjectured written circa BC 950 in the Kingdom of Judah.	The J source is the oldest its writers active before the split of the Kingdom of Israel into a northern Israel and a southern Judah. J provides half of <i>Genesis</i> and <i>Exodus</i> and some of <i>Numbers</i> and has a focus on Judah
E	E equals Elohist, conjectured written circa BC 850 in the Kingdom of Israel.	This source focusses on the Kingdom of Israel and uses the generic name Elohim rather than the more personal Yahweh (YHWH) prior to <i>Exodus</i> 3 and also makes Yahweh more remote and less personal. E Provides a third of <i>Genesis</i> , half of <i>Exodus</i> , and parts of <i>Numbers</i> . E has Elohim reveal himself as Yahweh during the happening of the burning bush and is prophetic, god fearing, ‘nationalistic’ and emphasises Israel’s covenant with God.
D	D equals Deuteronomist, conjectured written circa BC 600 in Jerusalem in a time of religious reform.	Restricted to <i>Deuteronomy</i> in the <i>Pentateuch</i> and with contributions to <i>Joshua</i> , <i>Judges</i> and <i>Kings</i> . D’s main focus is on the downfall of Israel and Judah through neglect of God’s covenant and subsequent deliverance through repentance.
P (originally Q)	P equals Priestly, conjectured written BC 500 by exiled Jewish priests in Babylon.	This source uses Elohim as a primeval name for god and Yahweh after this name is revealed to Moses. The P conjecture that Yahweh, who created the world and mankind, is removed and unmerciful. P contributes about a fifth of <i>Genesis</i> and significant parts of <i>Exodus</i> and <i>Numbers</i> , and most of <i>Leviticus</i> , <i>Joshua</i> , <i>Judges</i> and <i>Kings</i> .
Notes: (1) Incremental ongoing definitional changes to J, D, E, and P continue to bring complexity to the use of the nomenclature. (2) Wellhausen gives the chronological order as JEDP. (3) Writing style is also used to differentiate the four sources.		
Source: Compiled by Ian Eddington from Wellhausen, J. (2003). <i>Prolegomena to the History of Israel</i> Translated by J. Sutherland Black and A. Menzies. (Ch. 1, n. p.). Project Gutenberg E-Book # 4732; Horton, F. L., Hoglund, K G. and Foskett, F. S. (2003). <i>A Basic Vocabulary of Biblical Studies for Beginning Students: A Work in Progress</i> . (n. p). Wake Forest University; Friedman, R. E. (2005). <i>The Bible with Sources Revealed: A New View of the Five Books of Moses</i> . (passim). HarperOne Reprint Edition E-Book; Cassuto, U. (2006). <i>The Documentary Hypothesis and the Composition of the Pentateuch</i> . (pp. 3 – 17). Jerusalem and New York: Shalem Press. (Cassuto, 2008; Friedman, 2005; Horton, Hoglund, & Foskett, 2011; Wellhausen, 2003).		

prophesied fall.

Yahweh’s consolidation is further conjectured during unfolding of the boy King Josiah’s strict BC 641 – 609 Yahwist rule over Judah with a so-called discovery, during temple reconstruction circa BC 622, of a claimed-lost version of *Deuteronomy* attributed to Moses.

The D source now emerges to establish Yahweh as God of Israel and worship of other gods is forbidden. D source redactions follow with the rewriting of parts of the historical books *Joshua*, *Judges*, *Samuel* and *King(s)*, and of J and E’s *Exodus*.

Subsequent editors of the *Pentateuch* bring further D interpretations to J and E’s *Deuteronomy*, yet in the

time of King Josiah, polytheist passages such as *Deuteronomy* 5: 7 remain. In the reign Nebuchadnezzar II BC 605 – 562 during a time of his threat to Jerusalem, a prophet, Jeremiah, further consolidates Yahweh’s primacy by decrying Israel’s devotion to other gods and advocating a now-too-late devotion to Yahweh as a solution to Her problems. Jerusalem’s subsequent fall and exile of Her people to

Babylon did not occasion the demise of Yahweh. An *Isaiah 2* was written and appended to the first *Isaiah* wherein, now at *Isaiah 44: 6*, monotheism arrived

Hellenisation Referents		
Timeline	Historical Events	Referents in the Form of Qumran and New Testament Writings
BC 332 - 323	Greek-ideas influence occasioned in Judea during occupation by Alexander the Great's armies.	
BC 312-64	Seleucid Dynasty—so-called Hellenistic Greek Kings of Asia—rule over Mesopotamia and Northern Syria and/or other parts of Alexander's Eastern empire depending on varying spoils of wars, areas variously held include present day Afghanistan, Iran, Iraq, Syria, Lebanon, parts of Turkey, Armenia, Turkmenistan, Uzbekistan, and Tajikistan.	Oldest Qumran fragment of <i>Book of Isaiah (1Q Isaiah^d)</i> dated to BC 250. Carbon dates vary: (BC 230-253, BC 230-248, BC 50-AD 130). It contains the telling of the arrival of a Messiah.
BC 250-167	So-called forced Hellenisation as a by-product of a century of wars between the Greek Egyptian Ptolomies and the Saleucids. Judea annexed in BC 197 with <i>polis</i> ⁽¹⁾ status for Jerusalem in BC 175	<i>4Q22 paleoExodus^m</i> Carbon dates vary: BC 203-AD 83, BC 113-AD70
c. BC 164	Judah Maccabee of <i>Maccabees I</i> and II of the <i>Septuagint</i> and Christian Bible, a member of the Hasomean family, retakes Jerusalem and cleanses the Second Temple of Saleucid shrine evidence.	
BC 167-137	Period of Hasmonean rule which includes a period of civil unrest and disputation (BC 140 – 67) between Hasmoneans and Pharisees disputing both their interpretation of Jewish law and their right to rule. Opponents of the Hasmoneans take refuge in the Judean desert, some possibly at communal-living structured Qumran	<i>11Q19 Temple Scroll</i> . Carbon date: BC 166-AD 67
BC 67-37	Rome conquers Judea in BC 67 and after a period of Hasmonean pseudo-kingship Herod I, after exile in Rome, returns to conquer Jerusalem and rule over it.	<i>4Q521 Messianic Apocalypse</i> . Carbon date: BC 49-AD 116
BC 30	The Roman Octavius deposes the Greek Cleopatra VII.	Egypt annexed to the Roman Empire
c. BC 4-AD 30	Time of Jesus Christ	<i>4Q171 Psalms Commentary^a</i> . Carbon date AD 3-26
This box is continued on the next page.		

through Yahweh's being pronounced the first, last and only God of Israel. Source P redaction begins in further consolidation of this one and only god Yahweh. *Genesis 1*, not previously in existence, is crafted as a monotheistic version of the Babylonian creation myth.

Exodus, now 6: 2, is revised to incorporate Abraham's god El Shaddai, and Moses's God Yahweh, as one and the same, El Elyon being itself propitiated an alternate name for Yahweh. *Leviticus* is edited and in *Isaiah 2*, now at *Isaiah 51: 9 - 10*, Babylonian myth is revised so that Yahweh not Marduk of the *Enuma Elish* slays the dragon Tiamat. Marduk and the gods no longer make the world. The God of Judaism, and

later, Christianity and Islam, has arrived and the *Torah* is temporarily propitiated as though it were ever thus. The redaction discussed by Armstrong is redaction impacting on the Hebrew works in development, which redaction helped craft for Judaism a ready-made fierce and only God, soon to be met in translation by Egyptian Greek-speaking Jews and Greeks alike.

Armstrong employs the TEDP classification system of the so-called Wellhausen or Documentary Hypothesis, which system, explained in an accompanying box on page

Hellenisation Referents (Continued)		
Timeline	Historical Events	Referents in the Form of Qumran and New Testament Writings
AD 30-150	Jewish revolt of AD 66 is short lived with the consequent AD 70 conquest of Jerusalem and burning of the Second Temple in AD 70 by the Romans and the fall of Masada in AD 73.	Paul's <i>Letter to the Romans</i> , dated AD c.51–57, <i>Gospel of Matthew</i> most likely date c. AD 70-80, <i>Gospel of Mark</i> dated c. AD 68–73, <i>Gospel of Luke</i> under contestation; sometime during AD c. 60–100, <i>Gospel of John</i> C. AD 90-100 <i>4Q521 Messianic Apocalypse</i> . Carbon date: BC 49-AD 116
Notes: (1) Polis here is used in simple signification of city as an administrative unit.		
Source: Compiled by Ian Eddington from: Coogan, M. (2001). Oxford History of the Biblical World. New York: Oxford University Press; Hoover, O. (2007). Revised Chronology for the Late Seleucids at Antioch (121/0-64 BC). (pp. 280 – 301). <i>Historia</i> 65, 3; Schofield, A. and Vanderkam, J. (2005). Were the Hasmonians Zadokites? In <i>Journal of Biblical Literature</i> , Vol. 24, No. 1. (pp. 73-87); Duling, D. (2010). The Gospel of Matthew. (pp. 288-89). In Aune, D. <i>The Blackwell Companion to the New Testament</i> . Chichester: Wiley-Blackwell.		

289, although contested (Blenkensopp, 2000; Friedman, 1989; Nicholson, 1998; G. J. Wenham, 1996, 2008; Whybray, 1987), continues to be used in modified form for want of a replacement for it. Scholarly debate about the question of Yahweh's journey from a possible pre-exilic polytheism to a post-exilic monotheism appears now to be damping down into a received

but contested genre of study standing in the fog of a plethora of specific-interest but related questioning enquires generated in the wake of Qumran, ongoing archaeological work, and critical exegesis based on textual interpretation and religious and cultural perspectives, of which more later.

Enquiry discussion now turns from discussion of Rees's background of possible Jewish development of Semitic mythology and elements of Persian thought to focus more directly on his earlier cited intermingling of Jewish developments of the *Old Testament* revelation with the whole framework of Greek philosophy.

In respect of the content of Article (Ia), earlier chapters of this enquiry reveal that the Greek component of Rees' heritage of ideas consists, among other things, of a Stoic *logos* as will-of-god-and-moral-end; an Aristotelian *logos* as *nous*, that divine extension of the impersonal god; and Greek Science and mathematics. I very seldom used the word *logos* in earlier chapters but as Table 4 on page 46 reveals, Greek *logos*, at least *qua phusis* can be traced back to Heraclitus (BC 535- 475) who named fire as a divine spirit breathed in by, and subsequently present in, every human. So understood, *logos* as divine soul of the world, one and homogeneous in all humans, might, after the Stoics, be identified a divine will of god and nature, and also the

source of the laws that govern both the regular cycles nature displays and the laws of all human being (Fernandez, 2005, p. 169; Inge, 1917a, p. 134).

**Background to a Slow Jewish-Greek Social Intermingling
Preceding a So-called Platonic Linking, by Philo, of Hebrew and
Greek Ideas**

While claims are made that there is scant archaeological evidence to support the story of Exodus (Denver, 2002, p. 99; Meyers, 2005, p. 5) and a view is put that, except for the ancient Israel of biblical story, and academic construct predicated on it, archaeologists would not be searching for an ancient Israel at all (P. R. Davies, 2006, pp. 11 - 46), Jews are reported to have lived and worked in Egypt soon after the death of Alexander the Great (BC 323), some 120,000 said to have been brought there as slaves by returning armies (Josephus, 2006, Bk. XII, Chs. 1-2, p. 485).

According to Runia:

“In the first decades after the death of Alexander the Great, when the Ptolemaic dynasty came to power in Egypt, a large number of Jews emigrated from Palestine to Egypt. Jews settled there as mercenaries, labourers, farmers, merchants; sometime they were brought along or purchased as slaves. It did not take long before a considerable number of Jews settled down in the Egyptian capital, which at that time had only recently been founded by Alexander the Great in 331 B.C. In time this community became the most important and influential in the entire Jewish diaspora. In Alexandria the Jews formed, after the Greek-Macedonian citizen body and the native Egyptian populace, the most important ethnic minority group. They gained the right to form their own politeuma, i.e. they possessed limited rights of self-administration.

It is particularly striking how quickly Greek became the primary language of the Alexandrian Jewish community. From the second century B.C. onwards there were probably few Jews there who could still speak or read Hebrew. ... It was therefore an event of enormous importance for the Jewish community in Alexandria that the Hebrew Bible was translated into Greek.

In the so-called *Letter of Aristeas* [(Pseudepigrapha attributed to Aristeas, 2014; Thackeray, 1918)] and in one of Philo’s writings we read an account of how King Ptolemy Philadelphus, who reigned from 283 to 246, invited the High Priest in Jerusalem to send a delegation of wise men who could translate the Jewish Law, and how through providential intervention all 72 translators achieved an identical result. Not all aspects of this story, we may presume, are equally legendary. It is clear that we have here a kind of ‘foundation-myth’ of the Alexandrian Jewish community. From now on the Jews could live in accordance with their *patria egi*; by means of the authorized translation these had, as it were, received a divine *imprimatur*” (Runia, 1995, pp. 2 - 3, my square brackets).

This box is continued on the next page.

In particular, *logos* as immanent reason of the world is not said to be the will of a transcendent god (Inge, 1917a, p. 135; Pannenberg, 1977, pp. 161, 394), a position not far removed from Aristotle or another’s impersonal god discussed earlier on page 225 *Magna Moralia* II 1208b25 – 35 (Aristotle, 1935b; Aristotle or another, 1915, n. p.). As Table 4 on page 46 also reveals, by BC 450 Anaxagoras had likely defined *logos* as *nous* and placed it midway between god and the world as a divine intelligence and regulating principle of the world (Dunbar, 2010, pp. 5, 10 - 12; Inge, 1917a, p. 134). This placement did little to hinder Plato’s later explanation, circa BC 360, of the world as a living rational organism resulting from union of mind as reason, and necessity *Timaeus* 48a (Plato, 1925h; 1952w, p. 455), and

it suited the sensible and super-sensible divide inherent in Plato’s system of reminiscence and noetic recognition.

The early Stoa (BC 344 - 206) further qualified in Table 34 urged, like Heraclitus, that fire was the primordial substance and material principle of the divine (Drozdek, 2003, pp. 75 - 76; Garcilazo, 2007, p. 19). Fire was the seminal *logos*, *nous* or reason, which manifests itself in nature and which is present in all human beings.

The world was also a living being because the spirit of the *logos* inheres in all material things. But whether the Stoa also identified the *logos* with god *per se*, rather

**Background to the Slow Jewish-Greek Social Intermingling Preceding a So-called Platonic Linking, by Philo, of Hebrew and Greek Ideas
(Continued from the Previous Page)**

Greek language fragments from *Exodus* (7Q1, Exod. 28.4 - 7), *Leviticus* (4Q119, Lev. 26. 2-16), *Deuteronomy* (4Q122, Deut. 114) and the *Letter of Jeremiah* (7Q2) found amongst the Dead Sea Scrolls dating to the second century BC reveal signs of revision (Dines, 2004, p. 4). Some LXX fragments are amongst those showing revision which, in addition to indicating a possible rapid spread of early translations across Greek speaking communities, also obfuscates determination of wording of first *Septuagint* Hebrew-Greek translation. Greek Fragments of *Genesis* (Rahlfs number 942), *Deuteronomy* (Rahlfs numbers 963, 957, 847, 848) and *Job* (P. Oxyrh. 3522) from Egypt date from the second and/or first centuries BC, one *Deuteronomy* fragment being found with excerpts from Homer in sections of mummy cartonnage (Dines, 2004, p. 5). Most Greek-language fragments from Egypt are said to date from the third to the first centuries BC (*ibid.*, p. ix). Rahlfs numbers are from the 2004 revised edition (Rahlfs, 2004).

According to van der Horst (2013, p. 1) Kuhn (2012) conjectures, in Chapter 2 of his *Die Jüdisch-hellenistischen Epiker Theodot und Philon*, Greek influence in fragments of the Alexandrian Jewish poets Theodotus (BC c. 100) and Philo (BC c. 170). Theodotus appears influenced by the *Septuagint* and related exaggerated stories, and Homer (BC 7th or 8th centuries). Likewise, Philo (BC c. 170), influenced by the same Hebrew writings, appears also influenced by Lycophron (alive in the time of Ptolemy Philadelphus BC 285-247). McNamara (1983, pp. 226 - 227) identifies the epic poet Philo as *Φίλων ο πρεσβυτερος* (Philo the Elder) referred to by Josephus (AD 37-100) and Clement of Alexandria (AD 150- 15). Only twenty-four obscure lines of Philo's work exist. Evidence of 3rd and 2nd century Judeo-Greek ideas sharing, whether such speculated engagement might have been an initiative of Greek speaking Jewish circles in Egypt on the one hand, or of Greek and/or Macedonian circles on the other, is difficult to find. Of course the previous conjecture about Judeo-Greek ideas-sharing associated with the *Septuagint* is conjecture about happenings before the times of Christ and Philo of Alexandria (BC 20-AD 50) and his sometimes-called Judeo-Christian synthesis. As discussed elsewhere in the enquiry Christ, an Essene, is a member of a Jewish sect. Charlesworth, (1983, pp. 775-843) *inter alia*, assembles multiple author persuasion of 3rd and 2nd century adoption of Greek ideas by Jews in self-explanation through literature but the evidence is severely compromised in many ways. On the say-so of the Jewish Alexandrian philosopher Aristobulus (BC 3rd or 2nd century) and the Syrian Greek philosopher Numenius of Apamea (AD 2nd century), quoted by Eusebius of Caesarea (AD 263- 39), in *Praeparatio Evangelica* (1903, pp. 208 - 209, 260, 326 - 328), that Greeks such as Plato got their ideas from Hebrews among others in the first place, although of interest, are not discussed in detail in this enquiry. In Books 11 to 13 (*ibid.*, pp. 251-351) Eusebius (AD 263- 39) makes a case that Greek philosophy is based on ancient Hebrew wisdom. While the fragments Eusebius (AD 263-339) attributes to Aristobulus (BC 3rd or 2nd century) allow the latter's engagement with Greek ideas, and speculative long-bowing between Aristobulus and Philo (BC 25-AD 50), Aristobulus' dates are contested and his quoted claim that others, prior to Demetrius Phalereus (BC c. 350-280) and the "supremacy of Alexander and the Persians" (*ibid.*, p. 326) have "transcribed the exodus even of the Hebrews, our fellow countrymen from Egypt ... and the exposition of the whole Law" (*ibid.*, p. 326) is not substantiated. Again, evidence is severely compromised. Accompanying surmise that Plato and Pythagoras might have thus availed themselves of Jewish percepts rests on such slender evidence. Likewise it is difficult to know the extent, if any, of scholarly exegesis and translation by Greeks and/or Jews alike of various Jewish books reportedly purchased by Callimachus (BC 3rd century) for the library at Alexandria. Bagnall (2002, pp. 348 - 362) questions what he calls scholarly 'dreams' about the library. It is conceivable that ideas synthesis of a necessarily pragmatic kind may well have occurred relatively quickly amongst members of different Greek and Jewish groups involved, on a day to day basis, in such matters as tax collecting, military strategy, diplomacy, and commercial exchange.

than with god's will as law, is uncertain (Drozdek, 2003, p. 75; Inge, 1917a, p. 134).

Very likely, *logos* so defined, reflects god's will and Inge contends that the Stoic god also directs a rational and moral end. Inge (1917a, pp. 134 - 135) cites the content of the *Hymn of Cleanthes* as evidence, Cleanthes (BC 331 - 232) being a disciple of the early Stoic, Zeno (Jervis, 1996, p. 146). Asmis, in her exegesis of the same hymn, conjectures a stoic god that can enable humans to change from bad to good (Asmis, 2007, pp. 413, 429). Thom identifies the final prayer in the *Hymn to Cleanthes* as a prayer to a transcendent god over and above the person praying (Thom, 2005, pp. 26 - 27). This god is one who can restore universal rational order (*ibid.*, 22 - 23) so that

Thom has extended a received idea of an early-Stoa god as one of rational wisdom in the face of Heraclitian understandings of a combination of opposites of good and bad

in the human condition. Under Thom’s exegesis god is moved an increment further

Article (IV)

Early Greek Fathers reinforced the idea of Christ as *Logos*, in part to counteract a return of Greek rationalism. During this period and ending with Augustine (AD 345 – 430) a number of developments occurred.

(IVa) The *Logos* was placed in the rational domain of the Greek soul, and sin in the irrational domain, thereby beginning a colonisation of Greek rational and practical virtue by Christian absolute virtue, and Greek moral virtue by a moral good-bad divide of sin.

(IVb) Sin, which was found in the will of man and not in nature, was also found to have tainted nature thereby making nature’s evil a moral evil redeemable through Christ as *Logos*, rather than to be addressed in a Greek way through reason as *logos*.

(IVc) Aristotle’s four-causes explanation of being, and through that being, mankind’s rational access to Science and Ethics, was, along with the philosophy on which it was partly based, ejected in favour of a moral teleology with God in Christ as the cause of all in all—a full colonisation, by a Christian moral virtue, of both the Greek explanation of being and its attendant scientific and metaphysical soul.

(IVd) Following Tertullian (AD 160 - 220) and adoption of Latin by Christian fathers *Logos* understood as *nous* was translated as Word. Use of the word *nous* was prohibited in the Nicaean Symbol (AD 325). Later, following condemnation of the Stoic duality doctrine of *Logos-as-thought-or-potential* and *Logos-as-action-or-God’s-thought-in-action* at the Synod of Sirmium (AD 451), the word *Logos* fell into disuse as Latinisation progressed. God the Father, as-*Memra*-as-Word, and Christ the son, as-*Logos*-as-Word, were one in creation, in nature, and in the moral soul of man. Greek rational virtues had been temporarily replaced by Christian virtues of faith. Again, Aristotelian scientific understanding of cause and being had become, relatively speaking, temporarily irrelevant.

towards transcendence. Inspection of Cleanthes’ hymn reveals that god, as the Greek Zeus, is “the origin of nature governing the universe by law” [and it is] “right for mortals to address thee” [and to follow] “wherever thou wilt, obeying thy law” [for] “nor without thee, Oh Deity dost anything happen in the world” [and only the] “wicked” seek to disobey your laws” (Cleanthes, 2009, my square brackets). Subsequent parts of the poem reveal wicked persons as those not hearing the divine law and straying away from the good through temptations of avarice, glory and sensual joys and pleasures. Aristotle’s technical rational moral virtue is possibly already under challenge from an absolute moral virtue of good or evil, a consideration relevant to Article (IV).

In addition, for the early Stoa, thought, when uttered, turned from passive to active

Article (II)

Through cultural intermingling, scholarly activity, and translation work that accompanied Egypt’s transition from Greek to Roman rule, Greek *logos* or *nous* was identified with the Hebrew *Memra* understood as God’s creation, revelation and providence expressed in a personified form as the Word of the Lord, and subsequently, as the Wisdom of the Lord.

thereby occasioning a differentiation between a potential *logos* understood as un-manifested reason, and active *logos* understood as god’s thought expressed in action (Oakeley, 2007, p. 199). Inge

(1917a, p.134) claims that such a division made it easier for later Jewish translators to link *logos*, through one of its secondary meanings, *logos*, a speech or discourse, to the Word of the Hebrew God Yahweh, a development relative to Article (II).

Inge (1917a, p. 135), and more recent scholars (Hillar, 1998, pp.7 - 8 of 16; R. Williamson, 1989a, pp. 103 - 105), find the stoic *Logos-as-thought–Logos-as-word-*

action divide present in the writings of the Hellenised Jew, Philo (BC 20 – AD 50). Inge also finds the thought-action divide in the Greek Christian Fathers who differentiate between *Logos* as thought and *Logos* as God's word in action (Inge, 1917a, p. 134). He claims that such differentiation is really none other than the distinction Aristotle made in his *logos*-outside-the-soul and *logos*-inside-the-soul divide *Posterior Analytics* I 76b25 (Aristotle, 1952p, p. 105; 1960a) also *logos* in and out. Aristotle is just so powerful and in view of what is to come, it is apposite to recall his feet-on-the-ground approach to human understanding:

Necessary self-grounded fact, and which we must necessarily believe, is distinct both from the hypotheses of a science and from illegitimate postulate—I say 'must believe', because all syllogism, and therefore *a fortiori*, demonstration, is addressed not to the [25] spoken word [*logos* outside the soul: Ο ἔξω λόγος], but to the discourse within the soul [*logos* inside the soul: Ο ἐν τῇ ψυχῇ], and though we can always raise objections to the spoken word, to the inward discourse we cannot always object. *Posterior Analytics* I 76b20 – 30 (Aristotle, 1952p, p. 105, my square brackets except for [25]; 1960a)

Here Aristotle is as solid as ever: intuitive self-evident truths upon which rational demonstration is predicated, and, under certain conditions, that rational demonstration in its own right, are truths of the internal *logos* which begins with the unshakable and indemonstrable conviction that beings exist. Thought follows perception of beings and words follow thoughts, and no amount of poetic metaphor can coax beings into or out of existence and nor can physical beings be thought into or out of existence. Rather, thought is predicated on them. As explained in Chapter 2, Aristotle made *nous* that divine something from without and gave it an essential and indispensable role in both the intellectual and moral virtues, in scientific reasoning, and the highest levels of contemplation. These developments are relevant to explanations of Articles (I) and (IV).

This Greek thought, with its god derived *a posteriori* from perceived permanent movements of the planets and the earth, and from observations on earth of earth's own apparently permanent natural cycles, represents a first step in this chapter's journey from reasoned virtue to revelation or faith virtue. The outline of the Greek heritage given in some of the previous paragraphs of this chapter, when considered as a coda to Chapters 1 and 3, helps elucidate the first part of Article (I) by specifying the nature of Greek thought before the Alexandrian intermingling. Such Greek thought was to be challenged by Jewish and Christian developments which, in

turn, it affected in substantial ways. I address this claim further as the chapter's speculative commentary unfolds, linking through the next paragraph, to commencement of discussion of Greek-Jewish intermingling.

Article (I)

(Ia) In general, prior to intermingling of Greek and Hebrew ideas in Alexandria, detectible in works by Philo (BC 20 – AD 50) written some two centuries after translation of the *Septuagint* into Greek likely circa BC 283/5 - 246/7 during the reign of Ptolemy Philadelphus, the Greek god was impersonal, moral virtues were reasoned, god did not create the materials out of which he world was assembled, and god, thought thinking itself, was present in the form of *nous* as an essential part of mankind's soul and nature.

(Ib) Under a Hebrew explanation, God created the universe, revealed His presence, provided for His people, gave the law and made prophesy. This personal God was transcendent and His work on earth was done through the agency of angels. There was no sense in which fate had power over this Hebrew God and no sense in which the Hebrew God of the *Septuagint*, the *Jewish Bible* in development, was a nature god in the Greek way.

Article (IV)

(IV) Early Greek Fathers reinforced the idea of Christ as *Logos*, in part to counteract a return of Greek rationalism. During this period and ending with Augustine (AD 345 – 430) a number of developments occurred.

(IVa) The *Logos* was placed in the rational domain of the Greek soul, and sin in the irrational domain, thereby beginning a colonisation of Greek rational and practical virtue by Christian absolute virtue, and Greek moral virtue by a moral good-bad divide of sin.

(IVb) Sin, which was found in the will of man and not in nature, was also found to have tainted nature thereby making nature's evil a moral evil redeemable through Christ as *Logos*, rather than to be addressed in a Greek way through reason as *logos*.

(IVc) Aristotle's four-causes explanation of being, and through that being, mankind's rational access to Science and Ethics, was, along with the philosophy on which it was partly based, ejected in favour of a moral teleology with God in Christ as the cause of all in all—a full colonisation, by a Christian moral virtue, of both the Greek explanation of being and its attendant scientific and metaphysical soul.

(IVd) Following Tertullian (AD 160 - 220) and adoption of Latin by Christian fathers *Logos* understood as *nous* was translated as Word. Use of the word *nous* was prohibited in the Nicæan Symbol (AD 325). Later, following condemnation of the Stoic duality doctrine of *Logos-as-thought-or-potential* and *Logos-as-action-or-God's-thought-in-action* at the Synod of Sirmium (AD 451), the word *Logos* fell into disuse as Latinisation progressed. God the Father, as-*Memra-as-Word*, and Christ the son, as-*Logos-as-Word*, were one in creation, in nature, and in the moral soul of man. Greek rational virtues had been temporarily replaced by Christian virtues of faith. Again, Aristotelian scientific understanding of cause and being had become, relatively speaking, temporarily irrelevant.

As earlier discussed on pages 284 to 291 the Jewish heritage of ideas about the world emerged from Semitic mythology but became differentiated from it through its characteristic monotheistic revelation of one all-powerful God named Yahweh (Holy Bible, 2010, Exodus 20:1 - 2). This transcendent and all powerful personal Hebrew God of creation, providence and law was soon to challenge the nature gods in general, and the rationally derived Greek god in particular, and thus began an early colonisation of Greek Science and philosophy by faith Ethics. Rees (1917, p. 210), like Majka (2010, p. 396), finds this Hebrew God further separated from the world of nature than were the Greek gods and illustrates his point by referring to a quotation from the *Book of Jubilees*, dated by Box (1917, p. xii) as having been available close to, but after BC 250. Ongoing scholarship (Himmelfarb, 2006, pp. 80 - 83; Nickelsburg, 2005, pp. 73 - 74;

Vanderkam, 2008, pp. 405 - 431) places *The Book of Jubilees* within a range of possible dates from pre-Hasmonean times, that is, prior to BC 164 to pre-Qumran,

that is prior to BC 125 – 100, the date range attributed to the oldest Qumran fragment, 4Q216.

The numbers in the boxed text quoted from the *Book of Jubilees* refer the reader to footnotes and text references in the Charles translation of that book. They inform that

Section from *The Book of Jubilees*
2.1 For on the first day He created the heavens which are above and the earth and the waters and all the spirits which serve before Him—the angels 2 of the presence, and the angels of sanctification, 3 and the angels [of the spirit of fire and the angels] of the spirit of the winds, 4 and the angels of the spirit of the clouds, and of darkness, and of snow and of hail and of hoar frost, 5 and the angels of the voices 6 and of the thunder and of the lightning, 7 and the angels of the spirits of cold and of heat, and of winter and of spring and of autumn and of summer, 8 and of all the spirits of His creatures which are in the heavens and on the earth, (He created) the abysses and the darkness, eventide (and night), and the light, dawn and day, which He hath prepared in the knowledge of His heart. Box, C. H. (Ed.). (1917). *The Book of the Jubilees or the Little Genesis Translated from the Ethiopic Text.* (p. 41). R. H. Charles (Translator). New York: The Macmillan Company. (Anonymous, 1917, p. 41, translator's square brackets).

the angels which preside over nature were a lower order, third in line after the angels of the presence, God's media of communication, and the angels of the sanctification, who sing praises to God.

Commenting on an earlier edition of the quotation under discussion, Rees (1917, pp. 210 - 11) suggests that God had been further removed from nature and made more abstract and rare and transcendent, a contention supported by more recent scholarship (E.

Ferguson, 2003, p. 538). As discussed earlier, beginning on page 223, the Aristotelian god was rationalised from perceived permanent movements and cycles of existing apparently eternal physical beings.

Now from the Hebrews comes a God and first cause whose second causes are angels of various ranks, some of which angels control the processes of nature. Here from the Hebrews is also a God who is separate from nature but sovereign over it as a result of personified angels, a condition germane to the enunciation of the first part of Article (I). This God, unlike in the cases of the Greek Demiurge or the secondary unmoved movers, created all of nature along with all the substance of the universe as well. The *Book of Jubilees* purports itself “to be a revelation given by God to Moses through the medium of an angel” (Box & Oesterley, 2009, p.vii; Ruiten, 2012, p. 8). It is slightly apocalyptic and, as Table 32 reveals, is no part of the *Pentateuch*. Rees finds the *Book of Jubilees* to be a halfway house and mixture of deism and animism (1917, p. 211). Recent scholarship which upholds both the transcendence and pantheistic dimensions of god-en-arrivant literary exegesis associates the *Book of Jubilees* with parabiblical or rewritten Bible genres of redaction without necessarily specifying its

particular subcategory from a range available, and investigates commonalities *Jubilees* 11:14 – 23:8 shares with *Genesis* 11:26 – 25:10 in respect of the Abraham

Table 34: Third Explanation of Names Used in the Text

<i>Pentateuch</i>	The <i>Pentateuch</i> consists of the first five books of Moses and is sometimes referred to as the <i>Torah</i>
<i>Tanakh</i>	The <i>Tanakh</i> is a compilation of <i>Torah</i> , <i>Nevi'im</i> and <i>Ketuvim</i>
<i>Torah</i> , <i>Nevi'im</i> and <i>Ketuvim</i>	The <i>Torah</i> consists of <i>Genesis</i> , <i>Exodus</i> , <i>Leviticus</i> , <i>Numbers</i> and <i>Deuteronomy</i> ; the <i>Nevi'im</i> consists of <i>Joshua</i> , <i>Judges</i> , <i>Samuel (I & II)</i> , <i>Kings (I & II)</i> , <i>Isaiah</i> , <i>Jeremiah</i> , <i>Ezekiel</i> , <i>The Twelve Prophets: Hosea, Joel, Amos, Obadiah, Jonah, Mica, Nahum, Habakkuk, Zephaniah, Haggai, Zechariah, Malachi</i> ; the <i>Ketuvim</i> consists of the so-called books of truth: <i>Psalms</i> , <i>Proverbs</i> , <i>Job</i> ; <i>The Five Scrolls: Song of Songs</i> , <i>Ruth</i> , <i>Lamentations</i> , <i>Ecclesiastes</i> , <i>Ester</i> and the remainder of the so-called writings: <i>Daniel</i> , <i>Ezra-Nehemiah</i> , and <i>Chronicles I & II</i> .
Source: Compiled by Ian Eddington from Ehrman, B. (2007). <i>The New Testament: A Historical Introduction to the Early Christian Writings</i> (4 ed.). (pp. 4 - 5). New York: Oxford University Press; King James Version of the <i>Holy Bible</i> . (2009): (Old Testament and Apocrypha): Electronic Text Centre, University of Virginia Library; Berlin, A., & Brettler, M. Z. (Eds.). (2004). <i>Jewish Study Bible</i> . (pp. xiii, 1, and the Table of Contents which is not paginated). Oxford: Oxford University Press.	

Cycle, stating that the *Book of Jubilees* presupposes the existence of Genesis stories, there being no settled version of the so-called *Hebrew Bible* at the time (Ruiten, 2012, p. 5). Vanderkam (2008, p. 405)—his insights are gleaned from Qumran fragments thought to be from Hebrew versions of

Jubilees—calls the book a retelling of the stories from *Genesis* 1 through *Exodus* 24. Heathen gods of nature though no longer hold much sway. Vanderkam does not resolve the issue of date but suggests BC 125 – 100 as significant. Rees (1917, p. 211) also states that the *Septuagint* repudiates the view that the gods, existing as objects of nature as in the earlier cosmological traditions, rule the world, and affirms that nature, as God’s design, is obedient to His will. In this system Wisdom personified, “for she is a breath of the power of God and an emanation of the pure glory of the Almighty” (*Septuagint*, 2009, *Wisdom* 7: 25), is mediator in both God’s creation and in the providence nature provides God’s people (*Septuagint*, 2009, *Wisdom* 7: 22, 13: 1 - 9, 16: 17 - 24, 19: 6).

Unlike the earlier cosmological and teleological accounts which proceed from the world to god, the account in *The Book of Wisdom* proceeds from God into the world. The *Book of Wisdom* is also known as the *Wisdom of Solomon*, or *Wisdom*, and it is one of the later books of the *Septuagint*.

This Hebrew God in transcendent rule over nature was to be no easy opponent for Aristotelian rationalism. By virtue of the legendary Jewish translators of the *Septuagint* during and after the reign of Ptolemy Philadelphus (BC 283 - 246) (Abrahams, 1902, p. 321; Dines, 2004, pp. 1 - 2), this Hebrew God now spoke in

Koine Greek, to Egyptian Greeks and Hellenised Jews alike. By announcing His presence in this way the translators sowed and/or cultivated seeds of transcendence throughout Alexandria and beyond. Their translation activity helped prepare ground

Table 35: Historical Context of the Translation of the *Septuagint* from Hebrew to Greek

<p>Historical Context of the Translation of the <i>Septuagint</i> into Greek</p> <p>The Jewish canon, some of which is commonly called the <i>Hebrew Scriptures</i>, or the <i>Jewish Bible</i>, or the <i>Hebrew Bible</i>, but inappropriately from a Jewish perspective called the <i>Old Testament</i>, is known as the <i>Tanakh</i>. The <i>Tanakh</i> is a compilation of the <i>Torah</i>, writings which address law and instruction, the <i>Nevi'im</i>, writings containing prophesy, and the <i>Ketuvim</i>, the books of truth and the remainder of the writings. Codification of the Jewish canon is said to have occurred between BC 450 and AD 200 with finalisation circa BC 200 – AD 200, the <i>Torah</i> having been closed by 400 BC, the <i>Nevi'im</i> by 200 BC and the <i>Ketuvim</i> by AD 200. What in the Christian West is called the <i>Old Testament</i> with Jewish developments of it began its so-called Western journey during the Macedonian-Greek era in Egypt.</p> <p>The Macedonian-Greek era in Egypt began with the conquest of Egypt by Alexander the Great (BC 356 – 323) who ruled from Memphis. After his death Egypt was ruled from Alexandria by the Greek Ptolemaic dynasty from circa BC 320 to BC 30 beginning with a period of rule by Ptolemy Soter I (circa BC 367 - circa 283) and then co-rule with his son Ptolemy Philadelphus (BC 309 - 246) and ending with the death of Cleopatra VII (BC 69 - 30). After Cleopatra's demise Egypt became a Roman province.</p> <p>During the so-called Greek period, Alexandria consisted of Greek, Jewish and Egyptian quarters and the rulers employed multilingual officials for administrative purposes. Beginning with Ptolemy Philadelphus' patronage of learning—establishment of a great library at Alexandria is attributed to him—Alexandria also became a haven for scholars and a centre for active learning. The translation into Greek of the <i>Hebrew Bible</i>—a then popular version of it becoming subsequently known sometimes as the <i>Septuagint</i> (2009), and sometimes as the <i>LXX</i>, a rounded figure to honour the seventy two Jewish translators—began in the reign of Ptolemy Philadelphus (BC 283-246) when he is said to have commissioned a translation of the <i>Torah</i> for the library at Alexandria (DeSilva, 2004, p. 42).</p> <p>Source: Compiled by Ian Eddington from. <i>An Introduction to the New Testament: Contexts, Methods and Ministry Formation</i>. (p. 420). Nottingham: InterVarsity Press. (DeSilva, 2004).</p>
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for colonisation of Aristotelian natural law, and justice of place associated with it, by revealed truth and faith ethics. The historical context in which this translation occurred is instructive for the argument of this chapter and is summarised briefly in Table 36 on page 308. This newly announced God is not a nature god in the Greek sense, or for that matter in the pre-Abraham sense (K. Armstrong, 1994, pp. 6 - 11; R. Wright, 2010, p. 99).

Coeval with the Alexandrian translation activity and continuing with ongoing translation and codification of the Jewish canon, God's state of rarefaction and transcendence (Holy Bible, 2009a, Genesis 1 - 2, Psalms 23 and 104) was taken beyond levels reached through Greek rationality. Again, this newly announced God, completely free from fate, controls nature and is in no way controlled by it. Again and again in the

scriptures, this God is not a nature god in the teleological and cosmological tradition. The scriptures are taken to proclaim that this God actually made the world out of nothing.

In particular, there being no exact equivalent for the word *logos* in other languages, the translators of the *Septuagint* make *Logos* the equivalent of “the Hebrew Memra and its poetic synonyms, which mean primarily the spoken *word* [italics added] of

the Deity” (Inge, 1917a, p. 134, my square brackets). As outlined on page 300, in the early books of the *Jewish Bible* Memra was the protecting care of God for His chosen people which care revealed itself through creation, providence and revelation, and sometimes also through law and prophesy (ibid., p.135). The translation of Memra as spoken word constitutes a slight but important change because it involves personification “of the self-revealing activity of Yahweh” (ibid., p. 135) occasioned by attempts to define the Wisdom of the Lord. This personification “is *poetical* [italics added] rather than metaphysical except in writers under the Greek influence” (Inge, 1917a, p. 135, my square brackets), examples of it being found in *Psalm 33: 4*, *Psalm 147: 15*, *Isaiah 5: 10 - 13*, and *Jeremiah 23: 29* (Holy Bible, 2009a). Boyarin (2001, pp. 243 - 261; 2004, 25 - 26) suggests that the *Logos*-Wisdom usage emerged under a dwindling polytheistic Judaism precisely to enable the transcendence of God and that it was later to lead to the invention of the Jewish heresy of two-gods-in-heaven. Goodenough (1969, p. 139) had drawn attention to the possible efficacy of *logos* as a link between materiality and transcendence.

In the biblical citations provided in the previous paragraph, the Lord “sheweth his

<p style="text-align: center;">Article (I)</p> <p>(Ia) In general, prior to intermingling of Greek and Hebrew ideas in Alexandria, detectible in works by Philo (BC 20 – AD 50) written some two centuries after translation of the <i>Septuagint</i> into Greek likely circa BC 283/5 - 246/7 during the reign of Ptolemy Philadelphus, the Greek god was impersonal, moral virtues were reasoned, god did not create the materials out of which he world was assembled, and god, thought thinking itself, was present in the form of <i>nous</i> as an essential part of mankind’s soul and nature.</p> <p>(Ib) Under a Hebrew explanation, God created the universe, revealed His presence, provided for His people, gave the law and made prophesy. This personal God was transcendent and His work on earth was done through the agency of angels. There was no sense in which fate had power over this Hebrew God and no sense in which the Hebrew God of the <i>Septuagint</i>, the <i>Jewish Bible</i> in development, was a nature god in the Greek way.</p> <p style="text-align: center;">Article (II)</p> <p>Through cultural intermingling, scholarly activity, and translation work that accompanied Egypt’s transition from Greek to Roman rule, Greek <i>logos</i> or <i>nous</i> was identified with the Hebrew <i>Memra</i> understood as God’s creation, revelation and providence expressed in a personified form as the Word of the Lord, and subsequently, as the Wisdom of the Lord.</p>	<p>word” (Holy Bible, 2009a, Psalm 147) to melt the ice and snow, a word that “goeth forth out of my mouth” (Holy Bible, 2009a, Isaiah 55: 11) to command the rain and the snow and the budding of plants, a word “like a fire” [and] “like a hammer that breaketh the rock” (Holy Bible, Jeremiah 23: 29, my square brackets). Such translation, which has an eye towards personifying God’s Wisdom <i>per se</i>, Wisdom being found in words, is a movement away from the original usage of <i>Memra</i> as creation, provision and revelation and also a departure from the idea of <i>Logos-as-nous</i>. Questions raised about differences in meaning between <i>Logos-as-nous-as-word</i> and <i>Logos-as-Memra-as-word-of-Yahweh</i> catalysed scholars in Hellenised Jewish</p>
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Alexandria to attempt, among other things, to fuse these two distinct meanings. This

understanding is germane to clarification of the second paragraph of Article (I) and all of Article (II).

As a result of Jewish-Greek intermingling, the word Wisdom, in the later books of the *Septuagint*, tends to replace *Memra*, translated as word, and this brings the Hebrew closer to the Greek. As earlier revealed on pages 107 to 107 under Plato wisdom was a universal virtue or technical good of humankind manifested as ability to discern between harmful and unarmful pleasures and it was operationalised through *nous*. Also, as revealed on pages 241 to 244 under Aristotle *nous*, which nourishes philosophical wisdom's metaphysical contemplation and practical wisdom's discernment of right action, is a little bit of the divine in humankind. Now with the Hebrews, Wisdom becomes a personal God's hidden purpose for man *Job* 38: 36 (Holy Bible, 2009a) and a prime virtue (Holy Bible, 2009a, Proverbs 4: 7 – 13) closer to Yahweh. On one occasion this vengeful, wrathful, terrifying and fire-tongued Yahweh is even named a personal loving God (Holy Bible, 2009a, Jeremiah 31: 3), something Aristotle's god could never be, a condition germane to Articles (I) and (II).

Ecclesiastes, *Ecclesiasticus* and the *Wisdom of Solomon* (Holy Bible, 2009b) are said to reveal Jewish thought under the influence of Greek philosophy (E. Ferguson, 2003, p. 368; Mahaffy, 2004, p. 483). For example Tyler detects Stoic and Epicurean influences in *Ecclesiastes* (Tyler, 1874, pp. 12-12, 34-35) as does Plumptre (1888) who also dismisses Solomon's authorship and dates the work as not before BC 200 (*ibid.*, pp. 29, 33 respectively). Barton (1908), differentiates between scholars allocating *Ecclesiastes* to Persian times from those allocating it to Greek times as late as BC 100 (*ibid.*, 22), and in his history of interpretation section (*ibid.*, pp. 18 – 31) cites Zirkel detecting Greek influence in *Ecclesiastes* in 1792 (*ibid.* p. 23). Barton (*ibid.*, p. 21) also reveals Martin Luther (AD 1483 – 1546) and Grotius (AD 1583 – 1645) rejecting Solomon's authorship. Luther's rejection, in different words than those quoted by Barton, appears in *The Table Talk of Martin Luther* (Luther, 1872, p. 11), and that of Grotius, according to Ginsberg (1861, p. 145), on page 258 of Volume 1 of *Hugonis Grotii Opera*, 4 vols. Londini, 167. Bartholomew (2009, p. 44) gives *Annatationes in Vetus Testamentum* I: 434 – 435 as the reference. Maurer (2008, p. 206) reports that since Barton, a growing consensus of opinion dates

Ecclesiastes to the second half of the third century BC. Brown (2011) acknowledges Persian and Hellenistic influences in this “canonical misfit” (ibid., p. 136) and, on thought, content, style and compositional grounds, dates the composition as fourth or third century BC (ibid. p. 8). Rudiman (2001, p. 13) concludes that the author of *Ecclesiastes* was a sage writing in the third quarter of the third century BC, who was profoundly influenced by Stoic ideas. Brown (2011, p. 8) accepts a Hellenistic presence in *Ecclesiastes* and Gilbert (2009, p. 125) says that Stoic themes after the manner of Zeno (BC 490 - 430), together with traces of Epicurus BC 341 - 270) as well, are manifested in the book, the influence unlikely occurring before Alexander’s conquest of Palestine in BC 333. Bartholomew (2009, pp. 54 - 59), after a full discussion based on social setting, concludes that the author of *Ecclesiastes* was “a believing Israelite who had become aware of, and attracted by, tenets of Greek thought that were in the air” (ibid., p. 58) and questions whether language style, expression or regional colloquialism and idiom usage are useful in determining dates for *Ecclesiastes*.

As for *Ecclesiasticus*, Stone (1984, p. 290) dates it to the first third of the second century BC and detects in it tension between old Hebrew ways and Epicureanism. Collins (1997, pp. 85 - 87) detects a Stoic influence—shades of the doctrine of opposite pairs after Chrysippus (BC 280 – 207), shades of the doctrine of complementary opposites after Pythagoras (born BC 570/571) and Heraclitus (BC 535 – 475), and shades of the doctrine of everything created for a purpose after Chrysippus (BC 280 – 207)—and also notes a rehabilitation of solar chariot metaphor standard in Greece after its banishment in Josiah’s reform outlined in 2 *Kings* 23: 11 (ibid., p. 87). *Ecclesiasticus*, he says, is a hodge-podge tradition which bears at least a general similarity to the Stoics (ibid., p. 95).

The *Wisdom of Solomon* is said to be flavoured with “Stoical and Platonic ideas” (Inge, 1917a, p. 135) even if, as Barton (2007, p. 625) suggests, sophistication is lacking. Harrington (1999, pp. 55 - 56) allows its construction during the second to the first centuries BC most likely at Alexandria. DeSilva (2002, pp. 132 - 133) dates it sometime between BC 220 and BC 100. Zeller (2006, p. 115) detects Stoic sorites (polysyllogism) in it and both Harrington (1999, pp. 55 - 56) and Soggin (1989, pp. 444 - 445) conjecture Greek as its original language. Reese (1999, p. 820) names its

style protreptic, a type of rhetorical exhortation in Greek philosophy, and West (1981, pp. 464 - 465), who detects elements of Hellenistic dualism in it, also allows its personification of Wisdom. Here, like the Word before it, and *nous* before that in the case of the one, Wisdom in turn issues from a G(g)od, a divine essence pervading all things yet taking on no impurity from such engagement with matter and “in the human spirit she is the teacher not only of every virtue and of all theological knowledge, but of all the human arts and sciences” (Inge, 1917a, p. 135).

Here Wisdom is closely identified with both *Logos* as *nous* and *Logos* as the Spirit of God. The *Wisdom of Solomon* might be considered a transition from the Jewish creation doctrine of the *Septuagint* to the synthesis of Jewish and Greek ideas subsequently produced by Philo of Alexandria (BC 20 – AD 50), a second pertinent finding for clarification of Article (II). Wisdom so understood has little in common with Aristotle’s wisdom as intellectual virtue.

Philo’s synthesis of Greek and Jewish ideas is well documented. Philo (BC 20 – AD

<p>Article (II)</p> <p>Through cultural intermingling, scholarly activity, and translation work that accompanied Egypt’s transition from Greek to Roman rule, Greek <i>logos</i> or <i>nous</i> was identified with the Hebrew <i>Memra</i> understood as God’s creation, revelation and providence expressed in a personified form as the Word of the Lord, and subsequently, as the Wisdom of the Lord.</p>
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50) further synthesised the transcendence and personalisation of God found in the Hebrew writings by following “in the main the teachings of the Greek Science of his time but [expressing] it in allegories of OT language” (T. Rees, 1917, p. 211, my square brackets).

Corbett (1994, pp. 205 - 222) finds the rational approach paramount in Philo. Aune, in his analysis of *apatheia* understood as absence of feelings or emotions under guidance by *Torah* as a means of mastering the passions, finds the influence of Greek philosophy present in Philo, and in 4 *Maccabees* (1994, pp. 125 - 158). Runia (1995, p. 152) questions Philo being known to the Christians before Clement of Rome (died c. AD 99). Bennema (2001, pp. 63 - 64, p. 73) finds Philo arguing God’s presence in lower levels of being and also finds strands of the Wisdom transformation present in Philo’s argument that Wisdom is the route to God through virtue as obedience to *Torah*.

Booth (1994, pp. 159 - 172) finds Plato’s influence in Philo’s treatment of pleasure as the arch enemy of virtue. Baker (1992, p. 3), writing in the light of the Qumran scrolls, claims that pre-Christian Judaism was not monotheistic and that the roots of

Christian Trinitarians lie in pre-Christian Palestinian beliefs about angels. For Baker, Philo is plausibly the leader of a Jewish community who could not have remained so were he to have adapted a fundamental tenet of Judaic monotheism. Rather he drew his Logos as mediator construct from ancient Jewish beliefs and only adapted it to Greek ways of thinking. He was promoting Judaic ideas not some vague syncretism, so-called Hellenisation being simply a matter of the skin-deepness of language (ibid., pp. 114 -116).

Philo's synthesis, which is often accomplished through allegory, speaks for itself. For example, that human reason is a little part of the divine can be found in *De Opificio Mundi* (Philo, 1800, LI, p. 43). In *Special Laws* (1855b, I, pp. 303 - 305) Philo states that philosophy is the contemplation of God. The best of all possible things is found through knowledge of this God *On the Ten Commandments* (Philo, 1885, XVI, p. 155), and such knowledge will lead to peaceful society *On the Virtues and Offices of Ambassadors* (Philo, 1855a, p. 100). Philo's adoption of the Platonic soul is given in *On the Creation of the World* (Philo, 1800, XXII-XXIII, pp. 18 - 19) and this soul, like that of the Greeks, is trapped in the body *On the Allegories of the Sacred Laws* (Philo, 1854b, XXXIII, p. 80). Reason, breathed into humans by God, serves Wisdom. Wisdom of the causes of all matters, human and divine, is given in the *Torah*, through God's gift to Moses. Philosophy serves Wisdom *De Congress Quaerendae Eruditionis Gratia* (Philo, 2011, XIV, 79) and the *Logos* in nature is all in all—*On Joseph* (Philo, 1894, VI, 459 - 460). Philo accepts the Greek values of prudence, temperance, justice and courage *On the Allegories of the Sacred Laws* (Philo, 1854b, XIX, p. 68). The Greek Demiurge for Philo becomes the Christian *Logos* (ibid., XXXI - XXXII, pp. 132 – 133). In addition, Philo states that the Christian *Logos* received its Wisdom through Moses who, as stated, received it from God (ibid., XXXCIII, p. 134). God's aloofness from evil in his created world is preserved in Philo by his assigning evil to God's helpers in creation *On the Creation of the World* (Philo, 1800, XXIV, pp. 20 - 22), and Philo speaks of God's ideal city in Platonic terms (ibid., X, p. 9).

Philo constitutes another important step in this chapter's journey from rational moral virtue to virtue of faith. Philo is conjectured positing that through law, God made "equality the mother of justice" *The Special Laws IV* (2009, XLII, n.p.) and through

its “unchangeable laws and ordinances, has arranged, in their present beautiful order, all the things in heaven and earth” (ibid.). Philo’s allowance that God might be known through changes to the lower levels of His being has also been recently discussed by Bennema (2001, p. 73). Rees states that in Philo, the “doctrine of the divine transcendence and of the metaphysical antithesis between God and the world [is carried to] the extremist limit’ (1917, p. 211, my square brackets).

According to Inge (1917a, p. 135), Philo combines Stoic universal causality understood as God’s will in material nature with the Platonic ideas understood as the forms as patterns. He does this by detaching the Stoic conception of universal causation from materiality, *Logos*’ presence in nature, and annexing it to the Platonic theory of ideas. As revealed in earlier chapters of this enquiry, the Platonic theory of ideas came complete with its attendant duality of beings as real world reminiscences. Inge’s paraphrasing is incisive and intense. Hillar provides a more recent explanation of that same process by which *Logos* began to replace *nous* (Hillar, 1998, pp. 1 - 3 of 16).

As mentioned earlier, Philo’s *Logos* is a Greek kind of *logos*. Again, for Plato, the one, the good, and the beautiful are the same thing. According to Aristotle Plato identifies the good, the just and the beautiful with the one so that, as explained on page 126 of this enquiry, “Forms are the cause of the essence of all other things, and the One is the cause of the essence of the Forms” *Metaphysics* I, 988a10 (Aristotle, 1952g, p. 506; 1989). The difference is that Philo makes his *Logos* creatively active. Sometimes the *Logos* is personified as the eldest Son of God, Wisdom being his Mother, at other times the *Logos* is Wisdom *per se*. Philo took the Jewish poetic personifications of God in the world and “turned them from poetry to metaphysics by identifying the *Memra* [God’s word] with the Stoical *logos* Platonised [thus allowing causality through *active* forms as ideas]” (Inge, 1917a, p. 135, my square brackets), making the *Logos* the intermediary between God and the world. Philo’s outcome is both very Greek and very Hebrew.

Philo’s augmentation of ideas is rich, and at least three strands of thought may be discerned in his work. These strands are first, Plato’s dualism between the world and God, secondly, Aristotle’s theistic interpretation of god as the first cause of the world including necessity of the divine presence as *nous* for scientific understanding of that

world, and thirdly, the Stoic understanding that divine *Logos* governs the law and necessity of the physical world. It is by applying these strands of thought to exegesis of the Hebrew creation story and its transcendent God that Philo conjectures his *Logos* mediating between a transcendent God and the world.

Article (IVa)

(IVa) The *Logos* was placed in the rational domain of the Greek soul, and sin in the irrational domain, thereby beginning a colonisation of Greek rational and practical virtue by Christian absolute virtue, and Greek moral virtue by a moral good-bad divide of sin.

In Philo's mixture of Greek and Jewish ideas, nature, in and of itself being God's creation, is not evil but good. Yet of more relevance to the transition from Greek rational moral virtues to Judeo-Christian moral virtues focus of this chapter

is a claim that Philo represents an intermediate but important step away from an impersonal rationalised god of nature and place towards a rarefied transcendent God. In particular, Philo places his *Logos* in the rational Greek biological soul as a second Deity *A Volume of Questions, and Solutions to those Questions, which Arise in Genesis* (Philo, 1855c, 2.62, pp. 391 - 392). This act, which preserves the supreme transcendence of the Hebrew creation and its God, carries with it a tacit acceptance of Greek Science in the form of Aristotle's biology of soul. Science, out by one door, creeps in by another. Article (IVa) is thus partly explained.

Intermingling of the Greek and Jewish traditions may well have established conditions amenable to emergence of a world religion. Irrespective of this contention the transcendence of the Jewish God of creation, providence and law was not diminished by the advent of Christ or by the writings of those who subsequently took up His, Christ's, cause. Hill (2004, pp. 83, 317 - 318, 324, 327) traces the subsequent Johannine appropriation of *Logos* as Christ into the early centuries of Christianity in development and I pursue the so-called Christianisation of *Logos/logos* further beginning in the next paragraph wherein discussion of that intermingling of Judeo-Greek heritage with unfolding Christianity is further articulated as outlined in Articles (III) and (IV). I also discuss alienation of Science, theology and philosophy, each from the other. Such discussion, as foreshadowed on page 280, constitutes Section 2 of the chapter which, under formatting impositions and for improvement of layout purposes, begins on the next page.

**SECTION 2: JUDEO-GREEK INTERMINGLING FROM THE TIME OF PHILO (BC 20 – AD 50) AND THE
ADVENT OF CHRIST TO THE TIME OF AUGUSTINE (AD 345 – 430)
Integrating Discussion of Articles (I) through (IV) Continues**

**Part 1 of Section 2: Logos from Philo (BC 20 – AD50) and Christ to Paul (AD c. 5 -57) and John
(AD c. 6 -100)**

Christ's advent during a time of blending of Greek and Jewish ideas is recorded in the early Gospels where threads of Persian dualism, Greek polydaemonism and Semitic animism yet survive (T. Rees, 1917, p. 211; van Rheenen, 1991, p. 99).

Herod's Masada Built Between BC 74-05



Source: Photograph of Masada cropped by Ian Eddington from *Ancient Architecture Home Page*. (*Ancient Architecture WebPage*, 2013). Herod's palace is bottom left on the precipice. .

These traces are evidenced by intervening angels (Holy Bible, 2009a, Matthew 28: 2, John 5: 4), the presence and/or casting out of demons and evil spirits bringing injury and disease to mankind, and the devil and his angels—for example (Holy Bible, 1932, Matthew 8: 24 - 34, 15: 21 - 28; Mark: 7: 25 - 30; 9: 14 - 30; Luke 9: 37 - 45)—all of them being under God's power. In the *Septuagint* in development to which Philo had access, *Logos* is frequently mentioned (Hillar, 1998, p. 1 of 16). It appears as God's utterances in *Genesis* 1: 3, 6, 9, 3: 9, 11 and *Psalms* 32: 9, as God's action in *Zechariah* at 5: 1 - 4, *Psalms* 106: 20, *Psalms* 147: 15, and *qua* prophetic messages as God's communicated will to his people in *Jeremiah* 1: 4 - 19; 2: 1 - 7; *Ezekiel* 1: 3 and *Amos* 3: 1 (Hillar, 1998, p. 1 of 16; Septuagint, 2010). In the *New Testament* (2009b, John 1: 1 - 14) there is to be found a clear statement that the *Logos* signified as Word is Christ incarnate—a statement which Rees interprets as a trace of the “Philonic doctrine of the *Logos* as the mediator of creation and the principle of nature” (1917, p. 217). In this one mention (2009b, John 1: 1 - 14), the *Logos*, now the Word, “was God” (ibid.), which “in the beginning was with God” (ibid.) who “made all things” (ibid) and in whom “was life” (ibid) and “the light of men” (ibid.) through which true light they “might believe” (ibid.); witness of such true light being found in the advent of Christ incarnate who, as Word, was made flesh and dwelt among us, (and we beheld his glory, the glory as of the only begotten of the father,) full of grace and truth” (ibid.).

Inge, too (1917a, p. 136), like more recent writers (Fuglseth, 2005, 189 - 190; Harris,

Table 36: *Logos* Metaphor

“This cross of light is sometimes called the (or a) word by me for your sakes, sometimes mind, sometimes Jesus, sometimes Christ, sometimes door, sometimes a way, sometimes bread, sometimes seed, sometimes resurrection, sometimes Son, sometimes Father, sometimes Spirit, sometimes life, sometimes truth, sometimes faith, sometimes grace. And by these names it is called as toward men: but that which it is in truth, as conceived of in itself and as spoken of unto you (MS. us), it is the marking-off of all things, and the firm uplifting of things fixed out of things unstable, and the harmony of wisdom, and indeed wisdom in harmony [this last clause in the MS. is joined to the next: 'and being wisdom in harmony']. There are of the right hand and the left, powers also, authorities, lordships and demons, workings, threatenings, wraths, devils, Satan, and the lower root whence the nature of the things that come into being proceeded.” (The Apocryphal New Testament, 1924, Acts of John, n. p.). To this day the light remains a preferred form: “God from God, Light from Light, true God from true God” (The Nicene creed, 2009, n. p.).

Source: Extracted by Ian Eddington from *The Apocryphal New Testament*. (Acts of John 98, n. p.). Oxford: Clarendon Press. (The Apocryphal New Testament, 1924).

2010, pp. 302 - 310; Olsson, 1999, pp. 159, 167; Quast, 1996, p. 11), links John to Philo and makes John a stepping stone from Jewish Alexandrian thought to the doctrine of Christ incarnate as the *Logos*, Word and Light found in the so-called *New Testament*.

Keener questions Philo’s efficacy as a source for John claiming that Philo “moved in much higher currents of Hellenistic philosophic thought than

John approaches” (Keener, 2003, p. xxx). Lucke (1849, pp. 419, 412 - 432), like von Heijne (2010, pp. 203 – 205, 234, within the context of 192 - 234) speculates that Philo’s *Logos* is essentially docetic, that is, illusory, ethereal, impalpable, phantasmic as the heretical sect, the Docetae, would have it, and that John led the *Logos* into the path of Christian faith by making the Word of God the real man in Jesus Christ, thus making a real connection between the divine and the human. Keener plays down a docetic presence in *John* (Keener, 2003, pp. 163, 315) even though, as Table 36 reveals, there was considerable metaphor in use at the time.

Inge (1917a, p. 136) allows *1 John* 1: 1 - 3, and *Revelations* 19: 13, as possible mentions of the *Logos*. Burns recognizes *1 John* 1: 1 - 3 and *Revelations* 4: 11 (1911, p. 142). Ongoing scholarship continues to expound on potential Jesus-θεός (Jesus-God) claims in the *New Testament* consistent with the λόγος (logos)-to-Jesus route earlier identified by Rees and Inge (Hengel, 2008, p. 271; Kennard, 2008, p. 503; Köstenberger & Swain, 2008, p. 113; Moo, 2008, p. 118; Plisch, 2008, pp. 76 - 77). Yet such fine explication has generated rich contestation.

For example Wright (2011), noting that textual variants exist for each of the seventeen potential *New Testament* mentions of Jesus as God, identifies ten as immediately textually troublesome on the basis of punctuation or syntax, of which he allows Romans 9: 5 and *Titus* 2: 13 as certain; *1 John* 5: 20 as almost certain;

Colossians 2: 2, all fifteen variants of it, *Matthew* 1: 23, *John* 17: 3, *Ephesians* 5: 5, 2 *Thessalonians* 1: 12 and *Jude* 4: 29 as doubtful, dubious; and *1 Timothy* 3: 16 as not qualifying at all. Of the remaining seven, he judges *John* 1: 1, certain; *John* 1: 18 almost certain; *John* 20: 28 secure, certain; *Acts* 20: 28 undecided, doubtful, dubious; *Galatians* 2: 20, doubtful, dubious; *Hebrews* 1: 8 highly probable, almost certain; and *2 Peter* 1: 1 highly probable, certain. He concludes that the boldness to name Jesus θεός:

began in the first century. It was not a creation of Constantine in the fourth century. It was not a doctrinal innovation to combat Arianism in the third century. Nor was it a sub-apostolic distortion of the apostolic kerygma in the second century. Rather, the church's confession of Christ as θεός began in the first century with the apostles themselves and/or their closest followers and therefore most likely from Jesus himself. (B. J. Wright, 2011, p. 265)

Kerygma

Specifically kerygma = preaching or proclamation while in a collective noun sense kerygma = the received and distilled essence of apostolic preaching, for example the resurrection and promised return of Christ, repentance and forgiveness and the like.

Wright's claim does not resolve the question of what tradition those calling Jesus drew on and if the idea is down to Jesus Himself the question of origin

appears to be unfathomable. However, by pronouncing *John* 1: 1 (Holy Bible, 2009a) certain, Wright at least supports a literary link of Judeo-Greek Logos to *New Testament* scripture. It is important to recall the caveat given on page 280 about attribution and redaction dimensions of scripture grouped by convention under book name or personal name.

Nevertheless the incarnation of the *Logos*, as brief as it was, may be viewed as a problem for a wider extant tradition in which *Logos* in its many forms was docetic. Of John, or by default, of whomever the writers of the Gospel of John might be, from the prologue on, "the whole tendency of the treatise is quietly to transmute local and temporal ideas about the incarnation into a more universal and spiritual form" (Inge, 1917a, p. 137), that is, to insert the incarnation into, and surround it by, the ever was and ever will be of the spiritual *Logos*.

The historical Christ as *Logos* is reported proclaiming the goodness of God's made world of nature. Its gracious providence shines on those who seek Him (Holy Bible, 2009a, *Matthew* 6: 23) and provides for both evil and good persons, and the just and

unjust alike (Holy Bible, 2009a, Matthew 5: 45). “The order of nature is the process of God’s divine love and mercy” (T. Rees, 1917, p. 211).

Rees further claims that Christ’s vision was optimistic and teleological in that God

Neuroscientific Explanation of a Spiritual Me

As for my working definition of the material me, the self-as-object, it is as follows: a dynamic collection of integrated neural processes, centered on the representation of the living body, that finds expression in a dynamic collection of integrated mental processes. The self-as-subject, as knower, as the “I,” is a more elusive presence, far less collected in mental or biological terms than the me, more dispersed, often dissolved in the stream of consciousness, at times so annoyingly subtle that it is there but almost not there. The self-as-knower is more difficult to capture than the plain me, unquestionably. But that does not diminish its significance for consciousness. The self-as-subject-and-knower is not only a very real presence but a turning point in biological evolution. We can imagine that the self-as-subject-and-knower is stacked, so to speak, on top of the self-as-object, as a new layer of neural processes giving rise to yet another layer of mental processing. There is no dichotomy between self-as-object and self-as-knower; there is, rather, the anticipated future. The multiple images whose ensemble defines a biography generate pulses of core self whose aggregate constitutes an autobiographical self. The protosef with its primordial feelings, and the core self, constitute a “material me.” The autobiographical self, whose higher reaches embrace all aspects of one’s social persona, constitute a “social me” and a “spiritual me.” We can observe these aspects of self within our own minds or study their effects in the behavior of others. In addition, however, the core and autobiographical selves within our minds construct a knower; in other words, they endow our minds with another variety of subjectivity. For practical purposes, normal human consciousness corresponds to a mind process in which all of these self levels operate, offering to a limited number of mind contents a momentary link to a pulse of core self. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain*. (p. 9). Random House. Kindle Edition. (Damasio, 2010, p. 9)

directs all of nature to fulfil His plan for mankind and that “Jesus taught no radical and permanent evil in the nature of things” (ibid., p. 211). Smoley (2007, p. 11) complements Rees by attesting to the simplicity of Christ’s message yet O’Collins (2009, p. 2) explains that nowhere is it recorded that Christ left any writings other than John’s claim of His writing with his finger in the sand *John* 8:6 – 8 (Holy Bible, 2009b). Even to the extent that man’s fall had somehow brought an evil influence to nature, God would regenerate a new world (Holy Bible, 2009a, Matthew, 19: 28, Luke 20: 34 - 36). Furthermore, Christ’s vision brings with it “no scientific or philosophic theory of the universe. It was

not then, nor is it yet, demonstrably true. But it is the attitude of Christian faith towards the universe, because it is the Father’s work” (T. Rees, 1917, p. 211). Christ, a contemporary of Philo, lived circa BC 4 to AD 30 (Ehrman, 2007, p. 32). Codification of the Christian canon is said to have begun during the period AD 49 to 120/150 (R. Brown, 1997, pp. 3 - 19; Ehrman, 2007, p. xxxii - xxxiii).

On the basis of *New Testament* writings attributed to him, Paul is depicted preaching Christ’s doctrine and teaching in various locations throughout the Roman Empire. He, and/or possible pseudographers, may have improvised substantially in interpreting Christ’s message and in so doing may have introduced interpretations differing from those expressed in synoptic declarations of Christ’s teachings (Barnett, 2008, pp. ix, 2; D. Wenham, 1995, pp. 1 - 3).

Nietzsche certainly had no doubts about Pauline influence. *The Antichrist*, published in 1895, contains a blistering polemic about Paul in particular, and Christianity and

<p>One Example of the Paul-Deutero-Pauline Divide ⁽¹⁾</p> <p><u>Undisputed</u> 1 <i>Thessalonians</i> 1 <i>Corinthians</i> 2 <i>Corinthians</i> <i>Philippians</i> <i>Philemon</i> <i>Galatians</i> <i>Romans</i></p> <p><u>Disputed</u> 2 <i>Thessalonians</i>, <i>Colossians</i> <i>Ephesians</i> 1 <i>Timothy</i> 2 <i>Timothy</i> <i>Titus</i></p> <p><u>Not Attributed to Paul</u> <i>Epistle to the Hebrews</i></p> <p>Notes: 1 The Deutero-Pauline letters are those whose attribution to Paul is disputed. Source: Extracted by Ian Eddington from Just, F.. <i>The Deutero-Pauline Letters</i>, (Just, 2014, n. p.)</p>

Judaism in general (1924, paras. 41 - 44, 47, 58). In that polemic, Nietzsche accuses Paul of falsifying Christ’s teaching. Both Pauline and Deutero-Pauline letters have also been interpreted as defences against so-called gnostic sects and/or as political strategy (Detering, 2003, pp. 25 - 26; Robbins, 2005, p. 93), the Pauline/Deutero-Pauline divide and attendant matters of authorship and writing and/or redaction dates being a field of study in its own right. Modern nomenclature sometimes employs the term Paul-Acts to communicate a view that Paul and Acts, including possible redactions of them, are the work of the same writer or writers. Given such enigmas, chapter and section headings used in this enquiry, for example ‘From Paul (AD 5 – 57) and John (AD 6 - 100) to Augustine (AD 345 – 430)’ should be regarded as ordinal, not strictly

cardinal.

Modern Christological scholarship is, then, learning to live with uncertainty yet within the boundaries of such uncertainty it is probable that John as well as Paul and/or their redactors and pseudographers also went beyond Philo in their identification of the Jewish Messiah and the historical Christ with the *Logos*. For example Rees further contends that Paul assumed God’s existence (Holy Bible, 2009a, Acts 14: 5 - 17, Acts 17: 24 - 26, Romans 1: 20) and proceeded to reinforce the mantra that “creation, providence and nature are manifestations and proofs of the unity, spirituality, power and goodness of God” (1917, p. 212). Conversely then, Pauline interpretation of nature provides insights into the manner in which Pauline writing appears to interpret and expand upon, Godhood. Pauline interpretation of nature is thus very important for the developing argument of this chapter which is focussed on the manner in which, *inter alia*, Greek rational moral virtues were captured by, and transformed into, absolute Christian moral virtues.

In particular, Pauline writing fixes the presence of sin in human flesh and in human nature, “the course of this world according to the prince of the power of the air, the spirit that now worketh in the children of disobedience ... [and in] ... the lusts of our flesh and of the mind: and we were by *nature* [italics added] the children of wrath” (Holy Bible, 2009a, Ephesians 2: 3, my square brackets). As discussed earlier on page 281 Christ is said to have found no evil in nature.

Pagels (1989a) traces the evolution of sin in the flesh from the time of Christ to the time of Augustine (AD 354 - 430). In the light of the gnostic gospels she explains that the codification of the church’s position of original sin—nature is corrupted because Adam’s transgression is continually carried into the world by children infected with it at birth—evolved from an exchange among various Christian sects until its settling codification in Augustine (AD 354 – 450) from whence, under the dogma of an imperial Roman church, it became an enduring edict within Western culture. Pagels adduces the Deutero-Pauline letters as evidence of attempts by sects holding less stringent views about human sexuality, to progress their case (ibid., pp. 24 – 28). Her approach is historical and was written at a time when it was less adventurous to refer to certain groups by names such as Christian or Gnostics. Pagels’ contribution supports claims that Christianity in development helped consolidate a moral dimension in nature. Philo’s good and Paul’s evil coexist there.

In his *Letter to the Romans* (Holy Bible, 2009a) Paul discusses the letter of the so-called *Old Testament* law, in its relationship to sin, and the manner in which, through Christ, humanity can live “in newness of spirit, and not in the oldness of the letter” (Holy Bible, 2009a, Romans 7: 6 - 8: 3). His teaching is likely that while the old law and its absolute commandments are “holy and just and good” (Holy Bible, 2009a, Romans 7: 12), and that the law and commandments clearly define sin, sin so defined is to be found in the flesh. Mankind can be relieved from sin because “there can be no condemnation” (Holy Bible, 2009a, Romans 8: 1 - 2) of those “who are in Christ Jesus, who walk not after the flesh, but after the Spirit” (ibid.) for “the law of the spirit” (ibid.) frees humans “from the law of sin and death” (ibid.).

Ladd (1968, p. 10) states that, because of ongoing Christianisation of Greek rationality in the Johannine and Pauline traditions, the whole *New Testament* represents a movement from the Semitic to the Hellenistic world. Lash (2006, p. 98),

in a book written for a quite different purpose, *inter alia*, that of making mankind aware of its own ecology and habitat, and of an older form of spirituality to match it, also acknowledges Paul's contribution to the Judeo-Greek-Christian blending, although he is not quite as harsh in word usage as is Nietzsche, his inspiration (Nietzsche, 1969).

Pauline writing, because it consolidates a moral dimension in nature through asserting evil's presence there, is implicated in the eclipse of Aristotelian rational moral virtues and *nous* under their impersonal god. At *Acts* 14: 15 - 17 and *Acts* 17: 24 - 26 (Holy Bible, 2009a) Paul accepts God's creation and at *2 Corinthians* 4: 6, *1 Corinthians* 12: 18 and *1 Corinthians* 15: 38 (Holy Bible, 2009a) Paul accepts God's absolute commandments. At *Philippians* 2: 6 (Holy Bible, 2009a), and *Hebrews* 1: 3 (Holy Bible, 2009a) he also puts a case that Christ is an emanation of God, and at *Colossians* 1: 16 - 17 (Holy Bible, 2009a) and *Hebrews* 1: 3 (Holy Bible, 2009b) he reveals that all of God's creation was accomplished through Christ and resides in Him. In effect, all nature, all created things, all of Aristotle's categorical beings, reside in Christ. Rees (1917, p. 212) claims that interpreting Christ in this way, after Philo and John, is not only an acceptance by Paul of Christ as *Logos*, but also a return to, and further articulation of, Philo's doctrine of the *Logos* as mediator between God and the world.

Research into similarities and differences between Philo and Paul, and their relative contributions continues. Interdependence might be acknowledged but direct dependence of one on the other is counterbalanced in favour of both authors writing within well-established Jewish conventions of the time. For example, Chadwick (1965) says that "both writers draw on a common stock of Hellenistic Jewish tradition" (*ibid.*, p. 290) and that Philo, who was likely more than an expert in cutting and pasting (*ibid.*, p. 291), drew on previous works within a collection now largely lost. That Paul "fished in the same pool" (*ibid.*, p. 292) is supported, he says, by similarities to Philo within *Romans* 1: 2, 7: 8; *1 Corinthians* 2, 8, 9; *Philippians* 2: 6 - 10; *Colossians* I and *Galatians* 3. Chadwick claims that "the role ascribed to the divine Wisdom by St. Paul is identical with the activity of the *Logos* in Philo, for whom the *Logos* is the world-soul" (*ibid.*, p. 302) and that Philo and Paul signify continuing discussion within a Hellenistic synagogue within a Greek Judaism out of

sorts with rabbinic Palestinian Judaism—an idea not unlike ideas adduced by recent scholars (Bauckham, 2009; Boyarin, 2004, 2012; Hengel, 2003, 2008; Knohl, 2002; Schäfer, 2012; Schremer, 2010; Tresham, 2009) in their discussions of the emergence of Christianity from Judaism and discussed within the context of pages 347 to 353 of this chapter.

Winters (2001), following an aside by Chadwick about existence of schools of rhetoric in Philo's time, provides a possible explanation for structural argument similarities in Philo and Paul—their like-minded acceptance of rhetoric to defend arguments, their dislike of its sale and use for personal gain and political machination, and a stance to it predicated on the so-called *Old Testament* (sic., Winter's term). Yet Winters' focus is elsewhere: he seeks to move the emergence of the so-called Second Sophistic from the end decades of the first century AD to its beginning decades. (Runia, 1986, p. 148) provides a fleeting glimpse of Philo as rhetor and Winters (2001, pp. 2, 4, 59 – 69, 95 – 100) posits that Philo and Paul respectively, in Alexandria and Corinth, had but little choice to employ rhetoric, and then-also-taught procedures of sophistry as well, if they were to hold their audiences and also succeed in their negotiations with government officials and leaders on behalf of their constituencies.

Worthington (2010, pp. 35, 36, 38, 88, 90, 92, 102, 117, 191 – 192) investigates similarities and differences between Paul and Philo by comparing Paul's interpretation of creation in *1 Corinthians*, *2 Corinthians* and *Romans* with Philo's exegesis of those same texts in *De Opificio Mundi* (Philo, 1854a, pp. 1-51). He speculates that both writer's interpretations of God's creation of the world, and His provisions for humanity within it, are predicated on their understandings of God's intentions before creation. Worthington appears to argue that Paul's understanding of God's so-called 'before' is accessible through examination of Paul's treatment of *Genesis* and *Proverbs* and that it is historical, Christocentric in the sense of Christ as the last Adam prepared before creation, and that Christ as *Logos* is the image of God. Likewise, Philo's before, traceable through his use of *Genesis* 1 – 2 and *Timaeus* (Plato, 1925h, 1952w) is rendered ontic in the form of a predetermined paradigm of a structured and good nature, born of God through Wisdom His wife, the *Logos* being

an entity able to redeem a world negativity engendered through its association with matter.

Kim (2007, p. 223) informs that Philo too called the *Logos* the image of God, and

<p style="text-align: center;">Wise-man Content</p> <p>In a Biblical context wisdom begins with recognition of a living God, a wise person being one who is able to act in a manner acceptable to God. At <i>1 Corinthians</i> Paul and Sosthenes are announced wise men and called on to preach. Guides about how to act wisely are considered scattered throughout the scriptures in short statements, such statements constituting so-called wise-man content. The wisdom books of the scriptures are <i>Job</i>, <i>Ecclesiastes</i>, <i>Proverbs</i>, and <i>Song of Solomon</i> but wisdom sayings are more widespread being found in the so-called <i>Old Testament</i> at <i>Psalm</i> 111:10; <i>Proverbs</i> 1:7; 2:1-4; 9:10; <i>Job</i> 28:28; <i>Ecclesiastes</i> 12:13; <i>1 Samuel</i> 24:13; <i>1 Kings</i> 20:11; <i>Jeremiah</i> 21:39 and <i>Ezekiel</i> 18:2. In the <i>New Testament</i> wisdom sayings can be found at <i>Romans</i> 12:1; <i>Corinthians</i> 13; <i>Galatians</i> 5:19-23; <i>Ephesians</i> 5:22 – 6:9; <i>Colossians</i> 3:5-17; <i>Hebrews</i> 3:12-19, 4:11-13, 6:1-12; <i>James</i> 1-3 and <i>1 Peter</i> 2:11-17.</p>

other names as well, for example the Son of God, the archangel, the viceroy of God, and that *Logos* as Wisdom is associated with theophany. Chadwick (1965, p. 289) finds Philo calling the *Logos* the life, light, shepherd, manna, way, high priest and paraclete. Kamesar (2004, pp. 163 - 181) discusses Philo's claim that God sent the *Logos* to earth in Moses. He differentiates between the *logos endiathetos* and *logos prophorikos*, the Stoa's internal and external *logos* respectively, elsewhere discussed on page 315 of this enquiry, and says that Philo, in allegorical exegesis of the *Pentateuch*,

finds these *Logoi* symbolised in two brothers namely, Moses, signifying the internal *Logos*, and Aaron, signifying the external one. "Moses is mind most pure, and Aaron is its word, and the mind has been trained to grasp holy matters in a manner befitting the divine, and the word to express them in a holy manner" (Kamesar, 2004, p. 168). God spoke to Moses non-verbally through mind or *logos endiathetos* in readiness for Aaron to communicate God's message to the people. Kamesar reasons that the D-scholia to the *Iliad* 5.385–391, rather than *Phaedrus* 276A, is a most likely Greek-ideas source used by Philo in this instance. In the D-scholia, Ares, anger, is under the management of the brothers Otus and Ephialtes, *logoi en paideia*, who "educate and teach men to restrain anger [here anger = ὀργή = rage, wrath] and desire, and to engage anger only occasionally" *De Mutatione* (Philo, 208 quoted in Kamesar, 2004, p. 167, my square brackets)—an ideas-string prudence which regularly surfaces, often, unfortunately, without sufficient effect, in Eastern and Western cultures alike. Training of *logos prophorikos* (here training = *paideia*) is primarily assigned to rhetoric and that of *logos endiathetos* possibly to philosophy (ibid., pp.173 - 174).

Garcilazo links wise-man content of *1 Corinthians*, particularly 15: 12 – 49 on resurrection, to rich members of a congregation influenced by anthropology, ethics

and cosmology of Roman Stoicism (Garcilazo, 2007, pp. 51 - 63), especially their interpretations of Seneca the Younger (BC 4 – AD 64). By Seneca’s time duality of body had gained some acceptance, the soul being linked with a so-called petty body *Epistle 41: 4* (Seneca the Younger, 1925a, p. 275) otherwise described as a “heavy and earthly prison” *Epistle 102: 22* (Seneca the Younger, 1925b, p. 181), “a chain fastened about my freedom”, *Epistle 65: 21* (Seneca the Younger, 2007, p. 13), “a short-stay guest house”, *Epistle 120* (ibid., p. 82)—a body, some argued, which is not raised with the soul during resurrection. Stoic influence is, Garcilazo implies, thus causally implicated in the controversy of *1 Corinthians 15*.

Brookins says that, “although Paul was rather a man of many worlds, capable of shifting between them at need, but never abandoning his essential, and largely distinctive, Christian convictions” (2012, pp. 288 - 289), the wise man throughout *Corinthians* being a wise man of Stoic philosophy rather than rhetoric. The wise man is Greek rather Roman (ibid., p. 286).

Nevertheless, through Paul Philo’s dualism has to all purposes been expelled. Aristotle’s rational access to both moral virtues and understanding of nature has been challenged, and for some replaced, by a faith understanding wherein sin, understood in the absolute terms of the commandments, through entering the flesh, has tainted

Article (III)

Through the advent of Christ, God became more transcendent, the historical Christ found no evil in nature, and subsequently the sin of man’s fall became redeemable through Christ’s death and resurrection. The apostle John identified Christ incarnate with the *L(1)ogos* and later, the Jewish Roman citizen and missionary, Paul, developed and consolidated the identity of Christ as *Logos*. Even so, evil and sin remained clearly present after Christ’s resurrection and Paul discerned sin in the flesh of mankind.

nature. Christ has been proclaimed *Logos*, personal sin is said to exist, and these findings are relevant to explication of Article (III).

Although a so-called Christianisation of *Logos* appears plausible on the face of exegesis of scriptures *per se*, qualifications are in order. For example, Detering (2003, pp. 25 - 26) concludes that Paul’s letters are all forgeries, second century BC redactions of original Marcionite gnostic writings (ibid., p. 50), with gnosis allowing dual-god construct. The redaction is claimed to have resolved bitter differences between gnostic messianic community beliefs represented by Paul, and Jewish-Christian messianic community beliefs represented by Peter. *The Acts* (Holy Bible, 2009a)—mostly dating within AD 80 – 90 with some as late as AD 90 – 100, with possible redaction in the second century AD—tells of Jewish rejection of Christ as Messiah, Peter’s taking the Messiah to the

Gentiles and Paul's subsequent conversion. During (1957, pp. 50 - 51), following Loman, (1881) reports the dispute lasting from AD 70 to 135 until its so-called resolution by redaction in favor of Peter in the middle of the second century AD, which resolution occasioned emergence of the Catholic Church. Robins (2005, p. 92) acknowledges Pauline letters as political strategy and further caveats will be drawn from subsequent discussion about Judeo-Greek ideas within developing Christianity.

Dunn offers an explanation of the partitioning of Judaism and Christianity on differences between Greek-speaking and Aramaic-speaking Jews in respect of Stephen's possibly offensive-to-the-temple-cult-High-Priests statement that "the most High dwelleth not in temples made of hands" (Holy Bible, 1932, Acts 7: 48). Dunn says:

the Stephen episode marks the beginning of a clear parting of the ways between Christian and Jew, as also probably to some extent between 'Hebrew' Christian and 'Hellenist' Christian - at all events the first rending of a major seam in a Judaism still best designated 'second Temple Judaism'" (2006, pp. 94 - 95, Dunn's italics).

His partitioning is not soft in the Boyarin sense discussed on page 351.

According to Dunn, Jewish Christianity in the first century AD was able to consolidate itself with less reliance on temple cult (ibid., p. 99) and the Stephen incident is the source of the idea of Jesus in sacrifice as final savior (ibid., p. 99). Dunn is aware of diversity in early Christianity (J. Dunn, 2012) and that such terms as orthodox and heretical are wanting within more general categories such as Jewish, Hellenistic and Apocalyptic Christianity. Nevertheless, he argues that diversity beyond a central theme of love for others within a belief in Christ the man incarnate as God is disqualified from Christianity in the making (ibid., pp. 227, 308).

Dunn also places Jesus "well within the diversity of Second Temple Judaism" (ibid., p. 74) there being traces of Jewish temple cult in the appeasement of alienated brothers at *Matthew* 5: 23 - 24. He claims that Jesus ran afoul of temple cult more on purity grounds through his treatment of, and association with, lepers and otherwise ill persons, and for forgiving sins without due deference to temple praxis of this priestly convention (ibid., 53 - 62). Dunne further claims that Jesus' action in the temple is interpreted as an act of temple cleansing itself rather than a political act in defiance of a perceived temple-cosy relationship with unwanted Roman rule and that Jesus'

reported words about the destruction and rebuilding of the temple at *Mark* 15: 58 interpreted in the light of a son-of-David temple rebuilding adduced from *2 Samuel* 7 identifies Jesus as a possible Jewish Apocraphist who became a prey of a high-priest faction (*ibid.*, p. 67 - 70).

Baur's earlier analysis of the Stephen event (Baur, 1878b, pp., 44 - 152), the Peter-Paul divide and its subsequent resolution through damping down by Irenaeus (AD

Harnack's Qualifications to His Definition of Gnosticism

Gnosticism was always accompanied "by a great number of sects, schools and undertakings which were only in part related to it, and yet, reasonably enough, were grouped together with it.

... the great Gnostic schools were flanked on the right and left by a motley series of groups which at their extremities can hardly be distinguished from popular Christianity on the one hand, and from the Hellenic and the common world on the other. On the right were communities such as the Encratites, which put all stress on a strict asceticism, in support of which they urged the example of Christ, but which here and there fell into dualistic ideas. There were further, whole communities which, for decennia, drew their views of Christ from books which represented him as a heavenly spirit who had merely assumed an apparent body. There were also individual teachers who brought forward peculiar opinions without thereby causing any immediate stir in the Churches. On the left there were schools such as the Carpocratians, in which the philosophy and communism of Plato were taught, the son of the founder and second teacher Epiphanes honoured as a God (at Cephallenia), as Epicurus was in his school, and the image of Jesus crowned along with those of Pythagoras, Plato and Aristotle.

On this left flank are, further, swindlers who take their own way, like Alexander of Abonoteichus, magicians, soothsayers, sharpers and jugglers, under the sign-board of Christianity, deceivers and hypocrites who appear using mighty words with a host of unintelligible formulæ, and take up with scandalous ceremonies, in order to rob men of their money and women of their honour. All this was afterwards called "Heresy" and "Gnosticism," and is still so called. And these names may be retained, if we will understand by them nothing else than the world taken into Christianity, all the manifold formations which resulted from the first contact of the new religion with the society into which it entered.

To prove the existence of that left wing of Gnosticism is of the greatest interest for the history of dogma, but the details are of no consequence. On the other hand, in the aims and undertakings of the Gnostic right, it is just the details that are of greatest significance, because they shew that there was no fixed boundary between what one may call common Christian and Gnostic Christian.

Source: Harnack, A. (1961). *History of Dogma*. (pp. 237 – 242). New York: Dover Publications, Inc. (Harnack, 1961)

130 – 202), Tertullian (AD 160 – 220), Clement of Alexandria (AD 150 – 215), and Origen (AD c. 184 – c. 253, and fabricated Pauline Epistles (*ibid.*, p. 148) begins by naming Stephen a Hellenist member of the ancient Church of Jerusalem which congregation consisted of both Hellenist and Hebraist members. Following Stephen's martyrdom Hellenist members fled throughout "Judea, Samaria, ... towns of the sea coast, and even to Cyprus and Antioch" (*ibid.*, p. 45) sowing seeds of Christianity, and at Antioch even preaching gospels to Gentiles (*ibid.*, p. 45). In this way Stephen is viewed as a forerunner of Paul, Peter in Jerusalem confessing Hebraist interpretations. The

Hellenist-Hebraist divide was consolidated and hardened with Peter's refusal to continue sitting at the table with Hellenists in his meeting with Paul in Antioch (*ibid.*, p. 54). Part of the final resolution of Peter and Paul as brothers in Christ is achieved, *inter alia*, through a myth of their martyrdom in Rome found in a spurious *2 Peter*, Paulinising in a spurious *1 Peter*, and pseudography in Acts and Chapter 15 of *Romans* (Baur, 1878b, pp., 149 - 152).

Although Baur gives the resolution slightly in favour of Peter, that is, in favour of the Hebraist faction, there can be no doubt of Hellenist influence which is clearly evidenced by engagement with Greek ideas by Ireneaus and all named above by Baur as important in resolution of the Peter-Paul divide.

Yet views of a tainted nature, including but not limited to human disease, for example a Johannine view wherein sin has infected even the objects of creation (Holy Bible, 2009b, 1 John 2: 15 - 17) have been weakened through Christ's redemptive spirit which allows that mankind's flesh and spirit (Holy Bible, 2009b, 1 Timothy 4: 4, 5, 23, Romans 6: 19), along with all evil spirits, will be brought into final subjugation (Holy Bible, 2009b, 1 Corinthians 15: 24 - 27, Ephesians 1: 2). Aristotle's impersonal god has been banished and the wrath of the Hebrew God further softened through an announcement that "God *is* [italics added] love" (Holy Bible, 2009b, 1 John 4: 16, my square brackets). Aristotle's rational Ethics has been deposed in favour of a Judeo-Christian virtue Ethics in which defeat of natural evil is resolved through Christ's salvation.

Part 2 of Section 2: Greek *logos* to Christian *Logos*: From Paul (AD c. 5 - 57) and John (AD c. 6 - 100) to Augustine (AD 345 – 430)

Paul's assertions were yet to be tested against that heritage of Greek Science and cosmology which "compelled Christianity to assume a scientific and philosophic form, which it did by adopting the current ideas of Greek Science without change, and by adopting to its use such philosophic principles as would best harmonise with its own principles" (T. Rees, 1917, p. 212).

Rees' statement should not necessarily be read as though a so-called Christian church was ready made in either Paul's lifetime (AD c. 5 – 67), or the second century AD lifetimes of Basilides (conjectured alive AD 117 – 138) and Valentinus (AD c.100 – 160), a church with authority to ratify Greek Science or adopt philosophy to suit its needs at a bang of a gavel equivalent of the times, Christianity's adoption of Greek Science being a gradual occurrence. For example as the dialogue box on page 318 reveals, Harnack provides a glimpse of a plethora of competing persuasions, some religious, some secular and some profane, posited flourishing in the second century AD and his depiction of a complex second century AD mix of persuasions, subject as it is to a church history framework and his reasoned definition of Gnosticism itself, is

not unlike depictions of complex mixes of persuasions provided by Heraclitus (DK 22B14), Radcliffe Edmonds (2012, p. 16) and Bart Ehrman (2003, p. 2) in respective commentary on Orphic thiasos, Derveni priesthood sincerity and quackery, and Judeo-Christian sect understandings of multiple Gods.

Harnack, inter alia, posits that the scientific spirit of Greek rationalism partly informs Gnostic belief as he defines it—a claim that might help explain Paul’s earlier reported but contested adversarial stance against such conjectured so-called gnostic belief—and writes that, in explaining their religious universe, Gnostics, under a “lasting influence of Greek philosophy and of the Greek spirit generally on Judaism” (Harnack, 1901, p. 224), jettisoned the act of creation and returned to, and settled on, emanation to account for nature. He further suggests that Gnostics reintroduced a dualistic world in which nature, consisting of a formless matter made by lower spirits, was evil and against God. The Gnostics were, with their rejection of the Hebrew creation story, at work in “the acute secularising or Hellenising of Christianity” (Harnack, 1901; 1901/2006, pp. 227 - 228). Turner (1903/2012, pp. 218 - 219) also finds Greek rationality returning in a guise of so-called pagan heretical syntheses of Monarchianism, Arianism and Apollinarism which, he states, tended to give revelation a subordinate place. Winters contends that these pagan influences can be found far and wide before Christ (J. Winters, 2007, p. 8). Baur had earlier reasoned that:

The ingredients of Gnosticism were very multifarious; Hellenic and Jewish elements were blended together in it in manifold forms; but Christianity provided all these with a common centre, from which the numerous Gnostic systems proceeded to attempt ever new combinations of the most different kinds. *The Church History of the First Three Centuries*. (Baur, 1878a, p. 1)

Baur brought Hegelian rationality to study of church history and his scholarship, like that of Harnack, remains highly respected even though questioned by some as radical. Baur’s Tubingen School of Theology methodology, which is critically analytical and historical, and largely devoid of references to divine influences, has been in continuous use since Baur’s pioneering of it when teaching at the University of Tubingen from 1826 to 1860. When it comes down to it Baur (1878b) depicts Gnosticism essentially dualist and thus pagan (ibid., p. 193), a movement which regards Christianity as a system for development of the whole world rather than a system for salvation, a system which expresses its ideas through the symbolism of

Greek mythology (ibid., p. 201), a system that arose out of “speculation and philosophy rather than religion ... [and a system which] points back to philosophy as the highest outcome of the human spirit in the Gentile world” (ibid., p 185, my square brackets).

Gnostic thinkers such as Basilides (2nd century AD) and Valentinus (AD 100 – 160)

Turner’s Definition of Gnosticism⁽¹⁾

“Cerinthus, Saturninus, Marcion⁽²⁾, Carpocrates, Basilides, and Valentinus, all of whom flourished during the second century, were the principal teachers of the Gnostic doctrine” (W. Turner, 1903/2012, p. 218)

“In point of fact, the Gnostic teaching is a mixture of the philosophies of Philo and Plotinus with certain elements of Christianity. The Gnostics maintained the essential antithesis of the spiritual and the material; the origin, by emanation from God, of numberless aeons, the sum of which is the pleroma; and the final return of all things to God by a universal redemption. They recognized no mystery in the Christian sense of the word, the gnosis being the merest subterfuge, and human reason the really ultimate test of all truth, supernatural as well as natural” (ibid., p. 219).

Notes: (1) Turner is a Jesuit writer. (2) Harnack does not name Marcion a Gnostic.” (ibid., p. 219).

were then, say both Baur and Harnack, recipients of a philosophical and rational first-century Christian gentile influence containing surrogate Hellenistic content, and their efforts to reconstruct Jewish-Christian understandings in accordance with that influence repeatedly brought gnostic communities into conflict

with powerful voices within a mix of Christianity of the times.

Harnack is a protestant writer. He contrasts Gnosticism as a so-called secular or rational preference for Christ outside of the so-called *Old Testament* with an

Tubingen School of Theology (Baur)

This school is not the Tubingen School of Philosophy associated with H. J. Kramer and K. Gaiser variously discussed within the context of pages 137 to 191 of the Coda to enquiry Chapter 1.

emerging Catholic Church, as a preference for Christ inside of that so-called *Old Testament*. “It is no paradox to say that Gnosticism,

which is just Hellenism, has in Catholicism obtained half a victory” (Harnack, 1961, pp. 227 - 228). This winning of half the peace is in part occasioned by an arriving Christian church’s adoption of some of Gnosticism’s ideas and rituals.

Adoption of elements of Greek Science and philosophy by Christianity in development is articulated further beginning in the next paragraph and continues in the manner of the historical and critical exegetical method employed in Section I of Part 2.

To wit: nineteenth and twentieth century scholars, on the basis of engagements with works of, and/or about, such persons as Simon Magus (1st century AD), the writers

of *Apocryphal Acts of the Apostles*, Marcion (AD 85 - 160), Cerinthus (c. AD 100), Justin (AD 100 – 165), Basilides (early second century), Valentinus (c. AD 140), Carpocrates: (circa AD 140), Irenæus (alive AD 202), Tertullian (c. AD 160 – 220), Clement of Alexandria (c. AD 150 – 215), Origen (c. AD 185 - 254) and Augustine (AD 345 – 430), employed terms such as orthodox, unorthodox, gnostic, heretical, pagan, and apocryphal in their analyses of emerging Christianity's ongoing canonisation of scripture and definition of dogma. Orthodox as a term signifies canon and dogma sanctioned by an emerging Christian church increasingly ascendant over rival persuasions while gnostic, heretical and the like mark various divergences from it under definitions variably similar to those provided by Harnack and Turner. Baur (1878b) for example convincingly discusses various gnostic sects (*ibid.*, pp. 199 – 236) and the origin and nature of Montanism (*ibid.*, pp. 245 – 256) in this manner.

Twenty-first century scholars, on the basis of their engagements with those early century writers before mentioned, other commentary, Nag Hammadi texts and Midrash as well, also employ such terms as orthodox, unorthodox, gnostic, proto-gnostic, Jewish-Christian, Gentile-Christian and the like, in their discussions of emerging Christianity yet to be addressed in Section 3. Generally, but not always, these discussions pursue reclamation of early Christianity in development within a Judeo-Christian sect framework and a general but not necessarily universal feature of such scholarship is its penchant for inverted commas benchmarking of its terms against conventional classifications under a caveat of fuzzy borders definition. Sometimes this process, through devaluing the old terms, lessens the efficacy of the new. Nevertheless scholarly research since Baur and Harnack's times contains enlightening insight and interpretation touching on Johannine-Pauline Christology and Hellenisation theory, and in Section 3 covering pages 340 to 357 of this chapter such scholarship is used for cross-check and balance and update purposes.

Writers amongst those early centuries AD protagonists named in the penultimate paragraph are, in Church history studies, variously conventionally tagged Gnostics, Apologists, Greek Fathers, Latin Fathers, Apocryphists and the like and their works remain informative for purposes of this chapter, irrespective of whether Harnack-Turner or fuzzy border terminology is used for interpretation purposes. For example, writers like Justin Martyr (AD 100 – 160) classified in church history as Greek

Apologists, are reasoned defending a line of developing Christianity against what

Example of a Typical Western Church History Classification of Greek Fathers			
Greek Fathers	Church Fathers who wrote in Greek	Clement of Alexandria (c. AD 150 – 215) Origen (c. AD 185 - 254) Athanasius of Alexandria (AD 293 - 373) John of Chrysostom (c. AD 347 – 407)	Cyril of Alexandria (c. AD 378 – 444) Cappadocian Fathers—Basil of Caesarea (c. AD 330 – 379), Gregory Nazianzus (c. AD 329 – 389), Peter of Sebastes (c. AD 340 – 391), Gregory of Nyssa (c. AD 335 – c.394)
Source: Constructed by Ian Eddington from Turner, C. M. (2009). <i>Primitive Premillennialism: A Study in Patristic Chiliasm from the Apostolic Fathers to Irenaeus</i> . (n. p.); Panagiotis, K. C. (2005). <i>Greek Orthodox Patrology: An Introduction to the Study of the Church Fathers</i> . (pp. 11 - 16). Rollinsford, New Hampshire: Orthodox Research Institute.			

they considered to be pagan influence (Turner, *ibid.*, p. 220)—such defence now, as earlier qualified and subsequently to be

discussed, being also understood as competition amongst a great variety of religious community beliefs. Other writers, typically classified in church history as Greek Fathers, for example Clement of Alexandria (c. AD 150 – 215), Origen (c. AD 184 – 254), Arnobius (died circa AD 330), and Lactantius (circa AD 240 – 320), appear, during the course of the third and fourth centuries, to be implicated in establishing a common line of explanations. Turner claims that Origen assimilated elements of Plato, Aristotle, Philo, Neoplatonism and Gnosticism to his exposition of Christian dogma (W. Turner, 1903/2012, p. 221) and as earlier mentioned Pagels, within an exegesis of Christian nature-morality written as an outcome of her engagement with Nag Hammadi literature, is able to pronounce Justin Martyr (AD 100 – 165), Irenaeus (alive AD 202), Tertullian (AD c. 160 – 220), Clement (c. AD 150 – 215) and Origen (c. AD 185 – 254) representatives of Christian orthodoxy denouncing what she calls gnostic interpretations of *Genesis* sexual morality (Pagels, 1989a, p. 152). Certainly, in refuting Celsus (2nd AD) on such issues as virgin birth and God’s spiritual and corporeal nature, Origen (AD c.185 – c. 254) leverages from Empedocles (BC 495 – 430). Pythagoras (BC c. 570), Plato (BC c. 426 – c. 348) , and Stoicism *Origen contra Celsum* (Origen, 1872, pp. 432, 440, 418). Likewise in outlining his rational Christian system of the world Origen employs Greek understandings of corporeality, irrationality of poetry and rational and irrational soul in making his case *De Principiis* (Origen, 1869, pp. 6, 240, 245).

Although holding a variety of opinions about the nature of *Logos*, some Apologists and Church Fathers urged an idea of *Logos* as the complete rule of God over the world, defended the creation story of Genesis, and contended that nature, being God’s creation, was not evil in itself. For example, in defending the creation story of the Jewish Bible, and in codification of other matters of dogma, Clement of

Alexandria (c. AD 150 – 215) displays his familiarity with considerable portions of Greek Philosophy. His knowledge of Platonic dialogues is evident even though his use of them may be questioned *Miscellanies* (1869, pp. 382, 395 - 397, 414, 422, 443, 467, 470). In the same work he sides with Plato and Aristotle against sophistry (ibid., p. 376), adduces Pythagorean wisdom to make his claim (ibid., p. 385), finds Pythagoras transcribing from Jewish scriptures (p. 449), explains Aristotle and Plato in terms of Mosaic law (ibid., p. 467), all of the Greeks being but children of the Hebrews (ibid., p. 469 – 470), and cites a view that Pythagoreans held that Plato is but Moses speaking in Attic Greek (ibid., p. 449). In his *Exhortation to the Heathen* (1867), in deciding upon whom he might draw to make his case, he would not “wholly disown Plato” (ibid., p. 69) who may well have been so privileged, not because of his extensive knowledge—his geometry from Egypt, his astronomy from Babylon, his healing from Thracians and all that the Assyrians taught him (ibid., p. 71)—but because he received his sentiments concerning god now God from the Hebrews (ibid., p. 71). He again approves Plato in his *Instructor* (1867, p. 212) whom he adduces to his argument that the God of the Hebrews might be feared (ibid., p. 158). On pages 168 to 169 he long-bows Plato in support of an argument for corporal punishment in instruction of children.

Justin Martyr (AD 100 - 165) evidences God’s all pervasive reason by arguing that Christ is the total incarnation of one universal mind, God’s mind (Dhavamony, 2004, p. 40; E. Goodenough, 1923, p. 110). He links the Greek wisdom *qua Logos*—translator’s capital L—with Christ incarnate *qua Logos* among the so-called barbarians *The First Apology* (1868, p. 10) and on page 58 of that work in exegesis of *Timaeus* then available, and Plato’s claimed misunderstanding of Moses, takes one step closer to pronouncing the Christian *Logos* and the Greek *logos* one and the same, the Greek *logos* being as it were, somehow, an imitation of the Christian *Logos*. Inge (, p. 137), Goodenough (1923, pp. 50 - 51, 83 - 85, 169) and Hellerman (2002, pp. 128 - 147) are scholars sympathetic to this view. Christ and Socrates are compared on pages 79 and 80 of *The First Apology* (Justin Martyr, 1868), Socrates being part of the Word, Christ being the whole Word. Heraclitus, and the Stoic school, “in so far as their moral teaching went ... were admirable, as were also the poets in some particulars, on account of the seed of reason [the Logos] implanted in every race of men” (ibid., p. 78, translator’s square brackets). While Heraclitus may

well have settled on fire as monad or *phusis*, Justin Martyr's many references to God as fire are validated by citation from sacred scriptures. Interpretation of Heraclitus's fire as *Logos* is, in any case, ambiguous even in the face of a common interpretation held since the Stoics that *Logos* is all pervasive reason, something beyond material stuff of the universe (E. Goodenough, 1923, p. 2). Differing interpretations of what Heraclitus meant by *Logos* stand in the way of an easy link from Justin Martyr via the Stoics to Heraclitus. Burnet (1920, p. 133) for example interprets Heraclitus' *Logos* as a simple account while Adam (1911, pp. 77 - 78) equates it with that of the Stoics and Goodenough's conclusion on this reported difference is that it is as equally daring to say that Heraclitus taught a *Logos* doctrine as to say that he did not (E. Goodenough, 1923, p. 3).

That Justin Martyr may have been influenced by Philo's claim *Questions and Answers in Genesis* 4 152 (Philo, 1953, pp. 434 - 435) that Heraclitus obtained his *Logos* in the first place from Moses is as finely drawn by experts as is a claim that Moses was God's *Logos* in the first place (R. Williamson, 1989b, p. 56) drawn from Philo's words also found in his *Migration of Abraham*, 23 (Philo, 1854-1890, n. p.; 1932, 1935) and *On the Life of Moses I* I 55 (Philo, 1854-1890, 1935). Justin Martyr's acceptance of Socrates, Heraclitus and some so-called barbarians including Abraham as containing seeds of Christ is found in *Apology* 1 LVII, LXI (Justin Martyr, 1912, pp. 52 - 53, 57). Every man at birth participates in the universal reason (McLean & Aspell, 1997, pp. 53 - 55) and Justin Martyr's belief that there is a little bit of Christ's incarnate reason in every man *Apology* 1 LXI (Justin Martyr, 1912, p. 56) is not unlike Aristotle's little bit of *nous* in each of us *Metaphysics* XII 1072b20 - 30 (Aristotle, 1952d, pp. 602 - 603; 1989).

Hellerman acknowledges Harnack's use of Justin Martyr's references to *Logos* in *Apology* 2 for Hellenisation purposes, and Chadwick's use of *Apology* 2 to adduce Justin Martyr to near acceptance of Abraham and Plato as Christians, but goes further and, on the basis of her discussion of the political setting and Justin's *logos/Logos*-rhetoric, concludes that, while skilfully holding that only Christ as *Logos* can bring full revelation of God, partial revelation is available to non-believers who may thus not be pardoned for unjust treatment of Christians (Hellerman, 2005, p. 12).

For enquiry purposes Justin Martyr's so-called spermatoc *logos/Logos* idea *Second Apology* VIII (Justin Martyr, 1868, p. 78)—Plato and others containing the seeds of the yet to arrive full Word, subsequently Christ incarnate or otherwise—which underlies Hellerman's claim is cited only in support of this chapter's argument that Greek rational Ethics fell prey to Judeo-Christian virtue Ethics. There is no suggestion of a one-*Logos* definition fits all during these early centuries of codification. Under Valentinian gnosis the *Logos* is reported one of six projections of Bythos and Sige *Refutations of all Heresies* I IX (Hippolytus, 1868, p. 376). In *Acts of John* 13 (Holy Bible, 1932, p. 376), Christ the man praises the *Logos-as-Word* idea, that is, He is somehow separate from it. Tatian (ADc120 – c. 180) urges his Stoic-Christian *Logos* residing in the Father before coming forth as the first begotten work of the Father through participation in creation of the world *Address to the Greeks* 5 (Tatian, 1868, p. 9) while Athenagoras (AD 133 – 190) separates *Logos qua* emerging personal existence of God from creation but his claim is finely drawn (Athenagoras, 1868a, pp. 385 - 386). For Clement of Alexandria (AD 150 – 215) *Logos qua* divine instructor has ever been present in the world *Exhortation to the Heathen* (1867, p. 21)—he takes this claim from *John* 1 1—operative in all of mankind whom He persuades through their willingness to follow, not by compulsion *Miscellanies* VI 14, VII, (1869, pp. 366 - 371, 409 - 414). So-called Unitarians regarded Christ to be simply a man, yet one risen from the dead and one born of a virgin, while Monarchians, for example that Praxeas (AD late second century) whom Tertullian (AD 160 -220) took to task (Tertullian, 1920), also oppose *Logos* theology.

During codification of the Christian canon there was diversity of view about other issues now accepted as dogma. For example Athenagoras in *Plea for the Christians* IV (Athenagoras, 1868a, p. 379) and *Treatise on the Resurrection of the Dead* III (Athenagoras, 1868b, pp. 426 - 427), and Origen in his *Origen contra Celsus* VI 60 (Origen, 1872, p. 402), have *Logos* making the world along Genesis cosmology lines. For example Athenagoras has the *Logos* always in God and coming forth as “the idea and energising power of all material things” *Plea of Athenagoras for the Christians* X (Athenagoras, p. 385) although Origen *De Principiis* I II 10 (1869, pp. 28 - 29) might construe creation in terms of emanation rather than creative act of will, such interpretation possibly containing threads of Neoplatonism. There was also division

of opinion as to whether the world was made out of pre-existing matter *First Apology* I X (Justin Martyr, 1868, p. 14) or whether the matter used in creating the world was itself made out of nothing as for example Origen might persuade *De Principiis* II 1 - II (Origen, 1869, pp. 72 - 77).

A kind of Greek teleology informs the codification process—human rational mind which separates its species from other animals is the final cause of God’s providence of a good and bountiful nature ordained for mankind’s needs as for example Origen *De Principiis* II I 3, IV I 7 (Origen, 2009, pp. 74 - 75, 286 - 287) conjectures. Inge (1917a, p. 137) names Justin Martyr (AD 100 – 165), Tatian (died AD 185), Theophilus of Antioch (c. AD 412 and Athanasius of Alexandria (AD 293 - 373), together with the *Gospel of John* and the *Acts of John* as contributing, during times of “unrestrained theosophical speculation” (ibid., 137), to an orthodox Christian view, or what is now described a tendency or flow towards canonisation. These writers rejected Christ’s being a phantom or intermediate spirit somewhere in the hierarchy between God and mankind. Rees claims that in countering the docetic position, Church Fathers—a generic name used in Rees’ time, and now, to categorise early centuries AD so-called Christian theologians recognised as influential to, but not necessarily included within canonisation, during early Christian times—might have talked “about the *Logos* to show the pagans that Christianity is in agreement with ‘the best thought of our time’, just as our clergy talk about evolution” (ibid., p. 137) and that the main adversary was Stoicism rather than Platonism. Were Inge writing in the early 2000s, he might interpret recent quantum physics-God discussions (Wolf, 1996; Zoeller-Greer, 2000) in a similar light or mention sermons which reinterpret mankind’s God-given domination over nature in light of concerns about global warming, world population statistics and food security. Holmes (2001, pp. 411 - 438) argues that Clement (c. AD 150 – 215) allows a three-fold *Logos*, one of creation, one of wisdom and reason, and another of incarnation and says that Clement, against the Gnostics, promotes Christianity—now a so-called trajectory of Christianity towards canonisation—to be the true gnosis, Greek wisdom being an expression of God’s rationality in a *Logos*-ordered world (ibid., p. 419).

Greek Apologists, like the Pauline-Johannine writers earlier discussed also

confronted the doctrine of the fall and the presence of sin. With Paul they found the

Example of a Typical Western Church History Classification of Greek Apologists			
Greek Apologists	Apologists who wrote in Greek.	Quadratus (2 nd cent AD, alive 124) Aristides of Athens (2 nd cent AD alive 126) Aristo of Pella (mid 2 nd cent. AD) Justin Martyr (AD 100 – 165) Tatian (died AD 185) Miltiades (d. AD 314) Apollinaris of Hierapolis (2 nd cent. AD) Athenagoras of Athens (c. AD 133 – 190)	Melito of Sardis (died AD 180) Theophilus of Antioch (c. AD 412) Polycrates (c AD 130 – 196) The Epistle to Diognetus Hermias (anon. late 2 nd cent.) Arnobius (died circa AD 330) Lactantius (circa AD 240 – 320)
Source: Constructed by Ian Eddington from Turner, C. M. (2009). <i>Primitive Premillennialism: A Study in Patristic Chiliasm from the Apostolic Fathers to Irenaeus.</i> (n. p.); Panagiotes, K. C. (2005). <i>Greek Orthodox Patrology: An Introduction to the Study of the Church Fathers.</i> (pp. 11 - 16). Rollingsford, New Hampshire: Orthodox Research Institute.			

presence of sin a temporary affair that would be rectified when God brings “all things to a state of unity [so that all would be] all in one” *De Principiis* (Origen, 2009, III ix 6, my square brackets). The Greek Fathers may

well have had little tolerance for so-called gnostic interpretations of emanation yet they employed ideas of emanation to account for God’s complete creation and rule of the world through a common *ousia*, the Father and Son being *homoousios* in the manner of radiance to light. (Inge, 1917a, pp. 137 - 138; T. Rees, 1917, p. 212; Weinandy, 2007, pp. 49 - 79; Wolfson, 1951, p. 77).

Latin Fathers, beginning with Tertullian (AD 160 - 220), while generally accepting

Example of a Typical Western Church History Classification of Latin Fathers			
Latin Fathers	Church Fathers who wrote in Latin.	Tertullian (c. AD 160 – 220) Cyprian of Carthage (died AD 258) Gregory the Great (c. AD 540 – 604)	Augustine of Hippo (AD 354 – 430) Ambrose of Milan (c. AD 338 – 394) Jerome (c. AD 340 – 420)
Source: Constructed by Ian Eddington from Turner, C. M. (2009). <i>Primitive Premillennialism: A Study in Patristic Chiliasm from the Apostolic Fathers to Irenaeus.</i> (n. p.); Panagiotes, K. C. (2005). <i>Greek Orthodox Patrology: An Introduction to the Study of the Church Fathers.</i> (pp. 11 - 16). Rollingsford, New Hampshire: Orthodox Research Institute.			

the creation of Genesis outlined by the earlier Greek Fathers (T. Rees, 1917, p. 212), tended to explain creation and being as an act of free will of God and drew selectively and critically on the Stoics, and with less ease and sometimes with outright

antagonism on Plato, to piece together their constructs (Brent, 2012, pp. 76 - 116; Colish, 1990, pp. 9 – 37, 142 - 232; W. L. Davidson, 2012, p. 137; Kitzler, 2014, pp. 1 - 7; T. Rees, 1917, p. 213).

Tertullian *qua* Latin father might be read as another example of an agent of a Christian church in development, an agent at work within a century of its claimed discernible beginning triggered by the Stephen incident in *Acts* 7: 48 discussed

earlier on pages 317 to 319, an agent in selective filtration of ideas helpful for consolidation purposes.

For example, that so-called barbarous heretic Marcion, *Against Marcion* (Tertullian, 1878, p. 3) is vilified. Marcion that mouse who has “gnawed the gospels to pieces”

Example of a Typical Western Church History Classification of Apostolic Fathers			
Apostolic Fathers	Church Fathers who lived within two generations of the Apostles.	Clement of Rome (died c. AD 99AD) Ignatius of Antioch (Theophorus) (c. AD 35 – 98 to 117)	Polycarp of Smyrna (AD 69 – 155) Didache (anon. late 1 st cent. AD) Shepherd of Hermas (anon. 2 nd cent. AD)
Source: Constructed by Ian Eddington from Turner, C. M. (2009). <i>Primitive Premillennialism: A Study in Patristic Chiliasm from the Apostolic Fathers to Irenaeus</i> . (n. p.); Panagiotes, K. C. (2005). <i>Greek Orthodox Patrology: An Introduction to the Study of the Church Fathers</i> . (pp. 11 - 16). Rollingsford, New Hampshire: Orthodox Research Institute.			

(*ibid.*, p. 3), that “monster more credible to philosophers than to Christians” (*ibid.*, p. 3), that barbarous beast whose “restless curiosity”... infected the brethren” *Prescription against the Heretics* XXX (Tertullian, 1870d, p. 34), that scatterer of poison, that disciple of the Stoics (*ibid.*, p. 34), is inked in the same paragraph with Valentinus that disciple of Plato (*ibid.*, p. 34).

Tertullian’s antagonism to philosophy is elsewhere expressed. Philosophy stole from Jewish truth *Apology of Tertullian* (Tertullian, 1889, pp. 129 - 135), philosophy mocks truth (*ibid.*, p. 139), philosophers live immoral lives (*ibid.*, pp. 125 - 126) and religion and philosophy are markedly different from one another in no uncertain terms (*ibid.*, pp. 124 - 128). When Gilbert lets fly against doubters of science (Gilbert, 1952b, p. 1) all those years later he is not unlike Tertullian letting fly against philosophers. Socrates is possessed of a devil (*ibid.*, p. 125), philosophy is the parent of heresy *Prescription Against the Heretics* (Tertullian, 1870d, p. 8), and philosophers its patrons *On the Soul III* (Tertullian, 1870b, p. 416). By contrast no solution to problems of philosophy and medicine will be found by man unless it be learned from God who is the “sum and substance of the whole thing” (Tertullian, 1870b, p. 416). Only the rule of faith is constant *On the Veiling of Virgins* (Tertullian, 1870c, pp. 154 - 156), and one is permitted to accept a rule in faith before a reason is known for accepting that rule *On the Soldier’s Chaplet* (Tertullian, 1869, p. 335).

It is a wonder then that Greek philosophy and science could get as much as a look in, yet Tertullian appears a skilful polemicist and strategist in these competitive times

and skilfully harbours in various ports during competitive codification storms. For example, he calls on Stoic thought, as opposed to Plato, Aristotle, Heraclitus, atomists and others for help with rendering the soul both a spiritual essence and a corporeal substance *On the Soul* (Tertullian, 1870b, pp. 419 - 420). Zeno along with Chrysippus (BC 279 – 206) and Cleanthes (born BC 330) are there also named helpful. God's breathing in of soul is contrasted with various philosophical explanations (ibid., p. 417 – 418), Cleanthes (BC 330 – c. 230) is helpful for explanation of transmission of traits, and Chrysippus (BC c. 80—207) for inseparability of body and soul (ibid., p. 419 – 420), sleep and dreams and deception of the senses. Tertullian prefers Stoics over Plato on the role of the senses in perception (ibid., p. 444 – 445). He, Tertullian, also agrees with Stoics that sleep involves temporary cessation of sensual activity (ibid., pp. 507 - 510) and records common understanding that soul pervades the whole body (ibid., pp. 487 – 488). His argument against Plato's metempsychosis, notwithstanding his ridicule, is reasoned in terms of the Science of the day (ibid., pp. 484 – 488). He is against Aristotle's distinction between soul and mind and addresses views held by Valentinus (AD 100 – 160), Anaxagoras (BC 500 – 428) and Democritus (BC 460 – 370) on matters of the nature of soul (ibid., pp. 435 - 437). He refutes Epicurus (BC 341 – 270) that there is nothing after death *On the Resurrection of the Flesh* (Tertullian, 1870a, p. 216) but praises Pythagoras (born BC 570/571), Empedocles (BC 495 – 430) and Platonism for their avowal of immortality of soul, (ibid., p. 216), and while he takes Plato to task on pre-existence of soul, forgetting and anamnesis *On the Soul* (Tertullian, 1870b, pp. 463 - 468) it is by his very act of building on and adapting Plato's construct of soul that Tertullian usurps significant portions of Greek Science and explanations of rationality, of which more later on page 331.

Colish (1983, p. 34) claims that Stoic ideas of nature as ethical creation might be found in Cyprian's *On the Dress of Virgins* (Cyprian, 1882a) and of strength and endurance under duress in his *On the Mortality* (Cyprian, 1882b). I could not find Cyprian (AD c.200 – c. 258) invoking Stoicism directly although the virgins to whom his work is addressed are certainly encouraged to prepare for a now colloquially understood Stoic earthly resistance to the powers of the flesh, and he does draw on John and Paul which writers and/or groups of writers, whoever they were, are, *inter alia*, associated with Stoicism. Cyprian draws on the scriptures in his

exhortations to the virgins urging them not to try to improve on nature, that is, God's creation, through the use of cosmetics—a possible Stoic element of nature Ethics (Cyprian, 1882a, p. 344).

Likewise, a more general audience addressed in *De Mortalitate* (Cyprian, 1868, p. 461; 2006) is urged to be what is now-called Stoic in the face of plague and pestilence, and certainly those addressed would need to be so if confronted by the kind of suffering Cyprian describes. Yet his appeal is to Christianity and it is not difficult to form a present-age impression that he is leveraging adherence to Christ through fear of the abhorrence he portrays.

Under a Latin-Father treatment of free will mentioned on page 328 of this enquiry nature is more independent of the maker and, as with Philo, is a domain through which humans can learn about resurrection even before it is revealed to them in scriptures *On the Resurrection of the Flesh* (Tertullian, 1870a, pp. 234 - 236). A common law of God “prevailing all over the world, engraven on the natural tables” *On the Soldier's Chaplet* (Tertullian, 1869, p. 336) makes nature such a domain. Such a position, that is, that mankind can access knowledge about God, apart from revelation, through study of nature, is a perplexing finding given an already established belief in a remote transcendent Judeo-Christian God, and it is somewhat Greek. To be sure Plato's one is remote and past finding out yet is accessed through pilgrimage of soul, and Aristotle's unchangeable final cause is predicated *inter alia* on his observations of perceived so-called perfect cycles of the starry objects, but it is the presence of the full Greek *Logos qua* Christ in creation which quickens soul and life of this “huge and immense animal” *De Principiis* I II 3 (Origen, 1869, p. 74), the world, and opens a possibility that insights about the Creator may to be drawn from observations of nature.

Furthermore, in a variation on a theme of Plato, Tertullian finds the human soul to be a Greek-Science kind of soul complete with rational and irrational components *Treatise on the Soul* (Tertullian, 1903, p. 194). He attributes God's given reason *qua* natural soul, to the rational component of the Greek soul, and sin, the devil's work, to the irrational component (ibid., pp. 194 – 195), it having been accrued subsequently after its triggering by the fall and first transgression *On the Soul* (Tertullian, 1870b, pp. 422 - 423). Sin is irrational and proceeds from the devil's inherence in irrational

soul. By God's grace the soul has free will *Treatise on the Soul* (Tertullian, 1903, pp. 202 - 203) which can enlist its irascible and concupiscible⁵ faculties and in this manner take control of it (ibid., pp. 201 – 202).

The irascible and concupiscible faculties of the natural soul, being breathed into mankind by God, are laudable under reason but sinful under the irrational component (ibid., pp. 194 - 195, 218 – 219) they being, as part of God's breath, within the

Articles (IVa) to (IVc)

(IVa) The *Logos* was placed in the rational domain of the Greek soul, and sin in the irrational domain, thereby beginning a colonisation of Greek rational and practical virtue by Christian absolute virtue, and Greek moral virtue by a moral good-bad divide of sin.

(IVb) Sin, which was found in the will of man and not in nature, was also found to have tainted nature thereby making nature's evil a moral evil redeemable through Christ as *Logos*, rather than to be addressed in a Greek way through reason as *logos*.

(IVc) Aristotle's four-causes explanation of being, and through that being, mankind's rational access to Science and Ethics, was, along with the philosophy on which it was partly based, ejected in favour of a moral teleology with God in Christ as the cause of all in all—a full colonisation, by a Christian moral virtue, of both the Greek explanation of being and its attendant scientific and metaphysical soul.

(IVd) Following Tertullian (AD 160 - 220) and adoption of Latin by Christian fathers *Logos* understood as *nous* was translated as Word. Use of the word *nous* was prohibited in the Nicæan Symbol (AD 325). Later, following condemnation of the Stoic duality doctrine of *Logos-as-thought-or-potential* and *Logos-as-action-or-God's-thought-in-action* at the Synod of Sirmium (AD 451), the word *Logos* fell into disuse as Latinisation progressed. God the Father, as-*Memra*-as-Word, and Christ the son, as-*Logos*-as-Word, were one in creation, in nature, and in the moral soul of man. Greek rational virtues had been temporarily replaced by Christian virtues of faith. Again, Aristotelian scientific understanding of cause and being had become, relatively speaking, temporarily irrelevant.

rational component in Tertullian's variation on Plato, which variation flies in the face of Rees' earlier page 319 claim that Christianity in development adopted current Greek Science without change. Sin cannot corrupt the rational component *per se*, God being all reason but, after the fashion of the Stoics, it can take hold of the rational component through the free will of mankind (ibid), which free will, when it accepts God's grace, is released from sin (ibid., pp. 201 – 202). Reason, under God's grace as God's will, is superior to free will (ibid.). Thus sin

may be occasioned when, not heeding reason's council, free will engages with the irrational components of soul.

⁵ Good temper is the mean with respect to anger ... and the extremes [are] almost without a name. The excess might [30] be called a sort of irascibility. For the passion is anger, and its causes are many and diverse" *Nicomachean Ethics* 1125b30 (1934; 1952g, p. 372, my [are] square brackets). Irascibility is associated with being angry "with the wrong persons and at the wrong things, more than is right, too quickly, or too long" (ibid., 1126a10, p. 373). "Temperance is a mean with regard to pleasures" (ibid., 1117b25, p. 364), particularly the bodily pleasures of "touch and taste" (ibid., 1118a25, p. 364). The self-indulgent man is the extreme and "plainly, then, excess in regard to pleasures is self-indulgent and culpable" (ibid., p. 1118b25 – 30, p. 365). The self-indulgent man craves pleasant things above all else, and is led by appetite (ibid., 1119a, p. 365). He is a slave to gluttony and his self-indulgence can appear brutish (ibid., 1118a25 – 30, p. 365). Aquinas, following Aristotle, discusses whether sensuality "is divided into irascible and concupiscible as distinct powers" (ST First Part Q. 81, answer, pp. 429 - 430). He settles on sensuality as one generic power divided into the irascible and concupiscible and discusses their interdependence. In his discussion Aquinas claims that "all the passions of the irascible appetite rise from the passions of the concupiscible appetite and terminate in them" (ibid., p. 430). In explaining this claim he links sadness and joy with concupiscence and anger and vengeance with irascibility and agrees with "the Philosopher" that "the quarrels of animals are about things concupiscible, - namely, food and sex" (ibid., p. 430). Aristotle explains such matters in *History of Animals* VIII, 571b8 – 572a5, 588b25 - 589a10, and IX, 608b19 – 609a5 (Aristotle, 1952c, pp. 97, 115, 133 - 134; 1993a, 1993b, 1993c).

It is by this “noble testimony of the human soul by nature Christian” *Apology* (Tertullian, 1889, p. 54 in the context of pp. 53 - 54) and manifestation of God’s works that Tertullian allows access to spiritual knowledge about God from everyday study of nature. God constructs nature and prescribes its laws which, when rightly studied, instruct humankind in knowledge of God. Tertullian thus opened a door to full domination of rational Greek moral virtues by absolute virtues of faith—Articles (IVb) and (IVc). Through the human soul’s ability to accommodate knowledge about nature and God, the position of Science understood as physics is consolidated a little, as those of philosophy in general, and Greek metaphysics in particular, are diminished a little—a finding relevant to the clarification of Articles (IVa) and IVc).

It is as though the Jewish distinction between an absolute thou-shalt-not sin, and be virtuous; thou-mayst, and sin; and thou-mayst-and-yet-choose-not-to-sin and wilfully not sin, has been given a Christian interpretation and inserted into the Greek soul. Sin, an absolute moral affair spelt out in commandments, can be absolved through faith in a personal Christ. In this manner, humanity has been relieved of the burden of Greek rational responsibility wherein, without a personal God, each one of its kind, on the basis of a reasoned approach to moral virtue, is required, every waking hour, to assess how to behave appropriately in the face of prevailing but changing circumstances. Of course, reasoning must take place under day-to-day Christian interpretation of the commandments, and the agony of the human condition cannot but remain, but the rules are clear and the way out of the human condition is specified under Christian rules, not under philosophical procedures.

Tertullian reached his conclusions without pronouncing God’s created nature to be in and of itself radically evil. The sins of the flesh are neutralised by the grace of God in realms outside of nature. Even so it is as if Tertullian (AD 160 - 220) has set up conditions under which Augustine (AD 354 - 430) could find that the whole of nature was contaminated by sin and that this contamination occurred through an act of will. Such corruption happened because, early on, the human soul was, in the good and innocent nature of the garden, given over to the devil, the giving over being an act of will, not of nature. The corruption of human nature begets, in its turn, the corruption of human society.

The giving over of the will to sin is pronounced a moral act and the evil Augustine finds in God's would-be-perfect created nature is a moral evil too, brought there through the wilful aspects of the soul. The distinction upon which Augustine can find God's created nature both perfect and corrupted by sin is fine and perplexing, its origins likely to be found in latent and lingering Manichaeism and/or Platonism (G. Clark, 2005, pp. 12 - 32; Coyle, 2009, p. 263; O'Donnell, 2005, p. 47; T. Rees, 1917, p. 214; van Oort, 2006, pp. 716-724).

According to O'Donnell Augustine is something of a snob and social-climbing showman who, in his *Confessions* (Augustine, 1955) at least, constructed a front-of-house self for public consumption, a construct which might confound biography (O'Donnell, 2005, pp. 6, 37, 41, 87 - 109, 119).

Rees (1917, p. 214) explains Augustine's perfect but corrupted nature thus: Augustine, before his so-called conversion to Christianity, was a Manichean and, under the dualist Manicheans, evil and sin were opposites and sin existed alongside God. Clark (2001, pp. 17 - 18) explains the duality through a gnosis that Evil invaded Light and that our world was created as a transitory insignificance in order to free light, a fragment of good entrapped in the darkness of body, Jesus somehow existing as a divine spirit who only appeared to die on the cross.

She claims that the Manichean in Augustine the Hearer allows him to balance his need for Christ with his need for his partner and still pursue his goals on earth knowing that through service to the Elect his so-called sins as a Hearer might be forgiven. Hearer and Elect constitute two membership categories in Manicheanism, the Elect being the higher order. Clark bases her exegesis on discoveries of Manichaean writings in Coptic texts from Egypt, which include psalms and a Greek Mani codex, that is, of sources she claims are free from a chief dependence on so-called Christian polemic against Manichaeism (*ibid.*, p. 16), sources which might, to some extent, provide an anabranch of sorts around otherwise mainly Western Christian accounts of Manichaeism, and complaints like those made for example by O'Donnell that Augustine rails against Manichaeism rather than explains it.

Augustine, *qua* Christian, appears to have found difficulty with the idea that God's creation could contain evil. For so-called Christians, nature together with all created

being, was God in Christ as creation (Holy Bible, Colossians, 1: 16 - 20). Valentinus' gnostic Christian explanation discussed on page 386 of how, through many agencies and Aeons, and Wisdom's actions, God's Pleroma or unfolding emanation had crossed the divide between heaven and earth had, by Augustine's time, been significantly replaced by God in Christ as creation.

Augustine's solution to the good and evil enigma is to explain evil as deprivation of good *On Christian Doctrine* XI (Augustine, 1873; 2009b, p. 181) in a sense of a wound being privation of good flesh, which flesh returns to good through privation of the wound, or in a sense that a person comes to exist in a lesser state of being through loving something else more than loving God, and thus moving away from God's goodness. Evil, a lesser being through privation of the good as God's presence, is not necessarily the same thing as evil as privation of being *per se*, in the sense of the non-being or nothing before the creation which is difficult, if at all possible to understand, let alone meaningfully name good or evil on the basis of some criterion predicated on other than circularity or arbitrariness.



Source: Anonymous. (2014). Reproduction of a page from the *Cologne Mani Codex*, in Greek. (5th century AD). Cropped by Ian Eddington from *Manichaean Writings: The Gnostic Society Library*. (Anonymous, 2014).

I find it easier to acknowledge that evil as privation of good is a possible Platonic thread in Augustine's teaching than to acknowledge that Plato himself urged in *Timaeus* (Plato, 1925h, 1952w) that evil is privation of being, and that evil is in nature from the very beginning because God created nature from nothing in the first place. At *Timaeus* 30a Plato has Timaeus tell that, in making the world, a good god "desired that all

things should be as like himself as they could be ... [this being] in the truest sense, the origin of creation and of the world" *Timaeus* (Plato, 1925h; 1952w, p. 448, my square brackets) and in *Theaetetus* 176a Socrates informs that evils "can never pass away ... [and that] having no place among the gods in heaven, of necessity they hover around the mortal nature and this earthly sphere" (Plato, 1921c; 1952v, p. 530,

my square brackets). In *Timaeus* (Plato, 1925h, 1952w) after the 28b question—“Was the world, I say, always in existence and without beginning, or created, and had it a beginning” (Plato, 1925h; 1952w, p. 447)—Plato has a Demiurge *qua* craftsperson artist creating an ordered world out of something already existing in disorder. Creation from nothing flies in the face of a strongly held Greek belief that nothing comes from nothing. Runia’s insightful analysis (1986, pp. 287 - 291 within pp. 71 - 353) of whether or not Philo, for example, could find a thread of *ex nihilo* creation in *Timaeus* (Plato, 1925h, 1952w), reveals just how finely such threads might be stretched. Runia explains that Plato’s primal chaos is Philo’s pre-existent matter (Runia, 1986, p. 147) and that Philo’s solution to the *ex nihilo* question is that God first creates matter and then orders it (ibid., p. 149).

Irrespective of Augustine’s duality, or explanations of it by Rees and Clark, Augustine placed God over and above evil and allowed no escape from “this hell upon earth” *The City of God* XXII (Augustine, 1871a, p. 520; 2009a) “save through the grace of the Saviour” (ibid., p. 520), a grace which can aid “good men in the midst of present calamities, so that they are enabled to endure them with a constancy proportioned to their faith” (ibid., p. 521). As well, not “just any philosophy” (ibid., p. 521), like, say, that cited by Cicero, can contribute to grace. Only true philosophy can, and this is the philosophy given by the Christian Heaven (ibid., p. 521).

In particular, God’s will is “the cause of things” *The City of God* IX (Augustine, 1871a; 1871b, p. 174; 2009a), the efficient cause and spirit of life which “quickens all things, and is the creator of every body and of every created spirit” (ibid., p. 194). God is thus the formal cause as well. All other causes “make and *are made* [italics added]” (ibid., 194, my square brackets) so that “material causes, which therefore, may be rather said to be made than to make, are not to be reckoned among efficient causes because they can do only what the wills of spirits do by them” (ibid., p. 194). Because God is prescient, He is the final cause. Whereas all bodies are subject to the wills of spirits, which, in turn, are subject to the will of God, and whereas all wills are subject to Him, God does not bestow wicked wills.

Augustine explains that:

... our wills also have just so much power as God willed and foreknew that they should have; and therefore whatever power they have, they have it within most certain limits; and whatever they are to do, they are most assuredly to do, for He whose foreknowledge is infallible foreknew that they would have the power to do it, and would do it *City of God* IX (Augustine, 1871b, pp. 192, 194 - 196).

In general, there is no more bringing of form to matter in the Aristotelian sense and,

Remains of Aristotle's Lyceum



Source: Cropped by Ian Eddington from *Athens News*. (Athens-Macedonian News Agency, 2010, Athens News 24 September)

along with life, form, beauty and reason, God created position, relation and all of those rational attributes and predicates of being that occasion the basis for knowledge in the Aristotelian categories outlined in Table 25 on page 239. Hence, Aristotle's rational explanation of being—"we think we have scientific knowledge when we know the cause, and there are four causes" *Posterior Analytics* 94a20 (Aristotle, 1952p, p. 128; 1960a)—has been substantially colonised. Greek rational being and its attendant rational moral virtues and justice of place, have been supplanted by a system of faith virtues as intimated in Articles (IVc) and (IVd).

Articles (IVc) and (IVd)

(IVc) Aristotle's four-causes explanation of being, and through that being, mankind's rational access to Science and Ethics, was, along with the philosophy on which it was partly based, ejected in favour of a moral teleology with God in Christ as the cause of all in all—a full colonisation, by a Christian moral virtue, of both the Greek explanation of being and its attendant scientific and metaphysical soul.

(IVd) Following Tertullian (AD 160 - 220) and adoption of Latin by Christian fathers *Logos* understood as *nous* was translated as Word. Use of the word *nous* was prohibited in the Nicaean Symbol (AD 325). Later, following condemnation of the Stoic duality doctrine of *Logos-as-thought-or-potential* and *Logos-as-action-or-God's-thought-in-action* at the Synod of Sirmium (AD 451), the word *Logos* fell into disuse as Latinisation progressed. God the Father, as *Memra-as-Word*, and Christ the son, as *Logos-as-Word*, were one in creation, in nature, and in the moral soul of man. Greek rational virtues had been temporarily replaced by Christian virtues of faith. Again, Aristotelian scientific understanding of cause and being had become, relatively speaking, temporarily irrelevant.

Through Augustine's intermingling of scientific, philosophical, and theological knowledge (Fortin, 1996, p. 2) not only were Byzantine, Neoplatonic and Latin influences employed (Dougherty, 1999, p. 352; Fortin, 1996, p. 2) and, perhaps somewhat reconciled, but also reason improved in status because it might allow the possibility of more certain knowledge about God (Fortin, 1966, pp. 1 – 5). Although the new Ethics of faith was informed by revelation, reason, of necessity, was still acknowledged and is certainly employed, even if in slavish service to particular mantras and in simple logic, in the works of Church Fathers and others cited in this section.

Final marginalisation of rational *nous* is known. As intimated on page 282, the word *Logos* was not allowed to appear in the Nicaean

Creed (AD 325), which creed formalised Christ as *Logos* as one with the Father. In part it reads:

...and in one Lord JESUS CHRIST, the Son of God, begotten of the Father [the only-begotten; that is, of the essence of the Father, God of God], Light of Light, very God of very God, begotten, not made, *being of one substance (ὁμοούσιον) with the Father*; [italics added] by whom all things were made [both in heaven and on earth]. (Schaff, 1877, p. 29, my italics-added brackets)

By the time of the Council of Constantinople in AD 381 - 382 other changes had been made:

And in one Lord Jesus Christ, the *only-begotten* Son of God, begotten of the Father *before all worlds (æons)*, Light of Light, very God of very God, begotten, not made, *being of one substance with the Father* [italics added]. (Schaff, 1877, p. 29, my italics-added brackets)

The doctrine of the Stoic twin *Logos*, which allowed *Logos* to be either potential in the form of un-manifested reason, that is, passive thought, or *Logos* to be thought of God expressed as action, that is, active thought, was eradicated through banning at the Synod of Sirmium in AD 541 (Inge, 1917a, p. 138; G. A. Turner, 2009, p. 451). The *Academy*, founded by Plato in BC 387, was closed in AD 526, and, in one sense, its closing signals the replacement of the one and the good by the Trinity, and symbolises something of a formal temporary closure of rational ethical Greek mind. Aristotle's *Lyceum* had already been closed by the sacking of Athens in BC 86 or, after being re-established in the first century AD, again during the sacking of Athens in AD 267.

Table 38 on page 358 constructed from the content of Sections 1 and 3 depicts changes accompanying the conjectured fall of Aristotelian rational ethics to Christian virtue ethics. Table 39 on page 359 constructed from the content of Sections 1 and 2, and in keeping with thesis methodology, summarises key terms nuance resulting from Judeo-Greek intermingling with Christianity in development. Likewise Table 40 on page 367 carries the key terms nuance of Table 39 to interpretation of Thesis Proposition Statements. Before turning to Section 3 which, in light of recent research, makes a case that Johannine-Pauline Christology, Hellenisation Theory and historical and critical exegesis of scripture remain valid if wanting frameworks for enquiry purposes, I briefly comment on codification of Christian canon as a measure of Christianity in development.

The phrase Christian church in development has, in a context of Johannine-Pauline

Augustine (AD 345 - 430) on Canonisation

“Now, in regard to the canonical Scriptures, he [the most skilful interpreter of the sacred writings] must follow the judgment of the greater number of catholic churches; and among these, of course, a high place must be given to such as have been thought worthy to be the seat of an apostle and to receive epistles. Accordingly, among the canonical Scriptures he will judge according to the following standard: to prefer those that are received by all the catholic churches to those which some do not receive. Among those, again, which are not received by all, he will prefer such as have the sanction of the greater number and those of greater authority, to such as are held by the smaller number and those of less authority. If, however, he shall find that some books are held by the greater number of churches, and others by the churches of greater authority (though this is not a very likely thing to happen), I think that in such a case the authority on the two sides is to be looked upon as equal.

13. Now the whole canon of Scripture on which we say this judgment is to be exercised, is contained in the following books:—Five books of Moses, that is. Genesis, Exodus, Leviticus, Numbers, Deuteronomy; one book of Joshua the son of Nun; one of Judges; one short book called Ruth, which seems rather to belong to the beginning of Kings; next, four books of Kings, and two of Chronicles,—these last not following one another, but running parallel, so to speak, and going over the same ground. The books now mentioned are history, which contains a connected narrative of the times, and follows the order of the events. There are other books which seem to follow no regular order, and are connected neither with the order of the preceding books nor with one another, such as Job, and Tobias, and Esther, and Judith, and the two books of Maccabees, and the two of Ezra, which last look more like a sequel to the continuous regular history which terminates with the books of Kings and Chronicles. Next are the Prophets, in which there is one book of the Psalms of David; and three books of Solomon, viz. Proverbs, Song of Songs, and Ecclesiastes. For two books, one called Wisdom and the other Ecclesiasticus, are ascribed to Solomon from a certain resemblance of style, but the most likely opinion is that they were written by Jesus the son of Sirach. Still they are to be reckoned among the prophetic books, since they have attained recognition as being authoritative. The remainder are the books which are strictly called the Prophets: twelve separate books of the prophets which are connected with one another, and having never been disjoined, are reckoned as one book; the names of these prophets are as follows:—Hosea, Joel, Amos, Obadiah, Jonah, Micah, Nahum, Habakkuk, Zephaniah, Haggai, Zechariah, Malachi; then there are the four greater prophets, Isaiah, Jeremiah, Daniel, Ezekiel. The authority of the Old Testament is contained within the limits of these forty-four books. That of the New Testament, again, is contained within the following:—Four books of the Gospel, according to Matthew, according to Mark, according to Luke, according to John; fourteen epistles of the Apostle Paul—one to the Romans, two to the Corinthians, one to the Galatians, to the Ephesians, to the Philippians, two to the Thessalonians, one to the Colossians, two to Timothy, one to Titus, to Philemon, to the Hebrews; two of Peter; three of John; one of Jude; and one of James; one book of the Acts of the Apostles; and one of the Revelation of John.”

Source: Augustine. (1872). *On Christian Doctrine*. (pp. 41 – 42). Edinburgh: T. & T. Clark. (Augustine, 1872, my square brackets).

Christology and Hellenisation theory, served so far throughout this chapter to discuss Christianity’s emergence from a then extant mix of religious and secular persuasions. Some inklings of progress of Christianity in development up to the time of Augustine (AD 345 – 430)—in so far as assembly and ratification of a church canon might serve as a marker of rate and direction of such development—are available from comments by some of the Church Fathers. For example Justin Martyr (AD 100 – 165) *First Apology* LXVII (1868, p. 65) speaks of a Christian practice of reading “memoirs of the apostles or the writings of the prophets” (ibid., p. 65) on Sundays, and Irenaeus (AD 130 – 202) informs that “it is not possible that the Gospels can be either more or fewer in number than they are” *Against Heresies*

III XI 8 (1868, pp. 293 - 295).

Eusebius’ report of Origen’s views about a Christian canon (Eusebius of Caesarea, 1850) is given in the text box on page 340 and an almost final compilation provided by Augustine (AD 345 – 450) is reproduced in the accompanying box on page 339.

Eusebius' comments on who wrote what still raise questions in contestation in these

Eusebius (AD 263 – 339) on Origen's Version of a Christian Canon

IN his [Origen] exposition of the first Psalm, he has given a catalogue of the books in the sacred Scriptures of the Old Testament, as follows: "But it should be observed that the collective books, as handed down by the Hebrews, are twenty-two, according to the number of letters in their alphabet" After some further remarks, he subjoins: "These twenty-two books, according to the Hebrews, are as follows, 'That which is called Genesis, but by the Hebrews, from the beginning of the book, Bresith, which means, in the beginning. Exodus, Walesmoth, which means, these are the names. Leviticus, Waikra, and he called. Numbers, Anmesphekodlim. Deuteronomy, Elle haddabarim, that is, these are the words. Jesus the son of Nave, in Hebrew, Joshueben Nun. Judges and Ruth, in one book, with the Hebrews, which they call Sophetim. Of Kings, the first and second, one book, with them called Samuel, the called of God. The third and fourth of Kings, also in one book with them, and called, Wahammelech Dabid, which means, and king David. The first and second book of the Paralipomena, contained in one volume with them, and called Dibre Hamaim, which means the words, i. e. the records of days. The first and second of Esdras, in one, called Ezra, i.e. an assistant. The book of Psalms, sepher Thehillim. The Proverbs of Solomon, Mislloth. Ecclesiastes, Coheleth. The Song of Songs, Sir Hasirim. Isaiah, Iesaea. Jeremiah, with the Lamentations, and his Epistle, in one, Jeremiah. Daniel, Daniel. Ezekiel, Jeezkel. Job, Job. Esther, also with the Hebrews, Esther. Besides these, there are, also, the Maccabees, which are inscribed Sarbeth sarbane el.'"

These, then, are the books that he mentions in the book mentioned above. But in the first book of his Commentaries on the gospel of Matthew, following the Ecclesiastical Canon, he attests that he knows of only four gospels, as follows: "As I have understood from tradition, respecting the four gospels, which are the only undisputed ones in the whole church of God throughout the world. The first is written according to Matthew, the same that was once a publican, but afterwards an apostle of Jesus Christ, who having published it for the Jewish converts, wrote it in the Hebrew. The second is according to Mark, who composed it, as Peter explained to him, whom he also acknowledges as his son in his general Epistle, saying, 'The elect church in Babylon, salutes you, as also Mark my son'. And the third, according to Luke, the gospel commended by Paul, which was written for the converts from the Gentiles, and last of all the gospel according to John. And in the fifth book of his Commentaries on John, the same author writes as follows: "But he being well fitted to be a minister of the New Testament, Paul, I mean a minister not of the letter but of the spirit; who, after spreading the gospel from Jerusalem and the country around as far as Illyricum, did not even write to all the churches to which he preached, but even to those to whom he wrote he only sent a few lines. But Peter, upon whom the church of Christ is built, against which the gates of hell shall not prevail, has left one epistle undisputed. Suppose, also, the second was left by him, for on this there is some doubt. "What shall we say of him who reclined upon the breast of Jesus, I mean John? who has left one gospel, in which he confesses that he could write so many that the whole world could not contain them. He also wrote the Apocalypse, commanded as he was, to conceal, and not to write the voices of the seven thunders. He has also left an epistle consisting of very few lines; suppose, also, that a second and third is from him, for not all agree that they are genuine, but both together do not contain a hundred lines". To these remarks he also adds the following observation on the 'Epistle to the Hebrews', in his homilies on the same: The style of the Epistle with the title, To the Hebrews, has not that vulgarity of diction which belongs to the apostle, who confesses that he is but common in speech, that is in his phraseology. But that this epistle is more pure Greek in the composition of its phrases, everyone will confess who is able to discern the difference of style. Again, it will be obvious that the ideas of the epistle are admirable, and not inferior to any of the books acknowledged to be apostolic. Every one will confess the truth of this, who attentively reads the apostles writings". To these he afterwards again adds: "But I would say, that the thoughts are the apostles, but the diction and phraseology belong to some one who has recorded what the apostle said, and as one who noted down at his leisure what his master dictated. If then, any church considers this epistle as coming from Paul, let it be commended for this, for neither did those ancient men deliver it as such without cause. But who it was that really wrote the epistle, God knows. The account, however, that has been current before us is, according to some, that Clement who was bishop of Rome wrote the epistle: according to others, that it was written by Luke, who wrote the gospel and the Acts. But let this suffice on these subjects. *Ecclesiastical History* (Eusebius of Caesarea, 1850, pp. 245 - 247, my square brackets)

first decades of the twenty-first century. It is interesting that in his comments on the authorship of the Epistle to the Hebrews

Eusebius does not consider that a female mind may have directed the hand that lifted it above "that vulgarity of diction which belongs to the apostle [i.e. Paul]" (Eusebius of Caesarea, 1850, p. 246, my square brackets). Hoppin (2009, p. xi), drawing on Harnack, adds

Priscilla (likely alive AD 49) to the list of contended authors.

SECTION 3: SUBSTANTIATION OF ENQUIRY USE OF JOHANNINE-PAULINE CHRISTOLOGY, HELLENISATION THEORY AND NINETEENTH AND TWENTIETH CENTURY EXEGESIS OF SCRIPTURE

The purpose of this section is limited to corroboration of use made under caveat in Sections 1 and 2, of elements of Johannine-Pauline Christology, Hellenisation Theory and exegesis of scripture contributed by nineteenth and twentieth century

scholars. Its conjecture is that, notwithstanding the light of Nag Hammadi, recent Jewish-Christian interpretations of Christianity in development, and claims of redaction, recension, pseudography, dating uncertainties, fraud, polemics in respect of scriptures themselves, this chapter's partial use of Johannine-Pauline Christology, Hellenisation Theory and nineteenth and twentieth century scriptural exegesis is valid.

To wit, some present depictions of first century Christianity in development render it friendly or unfriendly ideas-exchange amongst a potpourri of differing religious community beliefs eddying into currents of an arriving canonistic stream later codified in such a manner as to allow identification of a Christian church, some general differentiation between Judaism and Christianity and fuzzy border use of terms like Gnosticism. Yet for example such depiction is not fatal to Harnack's contention of so-called acute Hellenisation which, even though long since questioned (Casey, 1964/2009, p. 52; R. M. Wilson, 1959, pp. 161 - 170) remains respected, providing, with other of his contributions (Harnack, 2007), a starting point for ongoing analyses in Christology and Hellenisation about such contentions as Marcion's gospel and Pauline canon (S. E. Porter, 2004, pp. 99 - 106; Roth, 2010, pp. 287 - 289). Gnosticism's status as philosophy too has been refuted (R. M. Grant, 1966, p. 120).

Danielou (1964) presents an alternative to Gnosticism *qua* gentile Hellenism in his claim that the structure and expression of so-called early Christian theology is Semitic (*ibid.*, p. 10) and that a bridge from Jewish Christianity to so-called Gnosticism was built of exegetical targumin, in Danielou's case not of the Aramaic but of revised Greek versions, ancient Jewish Christian Midrash, and Jewish speculative commentary about the cosmology of *Genesis* 1 – 3 (*ibid.*, p. 167). Elsewhere though, Danielou allows that so-called Gnosticism also borrowed from Hellenistic philosophy and other pagan ideas (*ibid.*, p. 28) so that he has not completely jettisoned Greek influence which is unlikely not to be present to some degree in those revised Greek versions of targumin.

<p>Targumin</p> <p>Targumin, in Jewish Aramaic antiquity of the late first century BC, consisted of translations and explanations of <i>Tanaka</i> spoken in various common languages of peoples short on fluency in Hebrew. Some targumin sayings were written down and subsequently found contested use in Babylon.</p>
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Guitton (1963) offers a view that Gnosticism is a function of human condition exemplified, in the case of Roman Catholic Church history at least, by a recurring pattern of emerging gnosis in times of crises, for example in response to such so-called heresies as Arianism, Catharism and even the Protestant Reformation. Gnosis so interpreted is a kind of eternal condition of humanity even though its recurrence happens in discrete independent steps, each gnostic truth emerging from its own particular crisis. While gnostic spirit is eternal its successive discrete emergences may be incommensurate with each other, there being no continuity between appearances. Given Guitton allows each gnosis an emergence from particular conditions it is difficult, even on the basis of such unfriendly or measured references to Greek philosophy and science discussed in Section 2, to rule out perceptions of gentile Greek dampening of a developing church's religiosity.

Van Groningen suggests that while Harnack recognised a contribution of "the spirit of scientism" (1967, p. 111) to origin and motif in Gnosticism, he did not give it sufficient emphasis. Yet Harnack's references to Science throughout Volume 1 of his *History of Dogma* (Harnack, 1997, pp. 123, 241, 337, 338, 342, 362 - 363) reveal, given his stated focus on gentile philosophising of Christianity, that is, secularisation of it relative to, and at the expense of, its ongoing mystification, Harnack had Science's measure. His discussion of the possible origins of Gnosticism admits manifold threads including Persian, Samaritan and Babylonian influence reaching through Judaism (*ibid.*, pp. 242 - 252) as the earlier dialogue box on page 318 reveals.

Porter and Pitts (2013, pp. 1 - 9) say that scholarly Jewish-roots explanations of primitive Christianity during the twentieth century relying on rabbinic-explanations exemplified for example, by Bultmann (1955) and Montefiore (1930), are distinguishable from many of those of the second half of that same century which rely on Second Temple literature (*ibid* 1 - 2). The so-called paradigm shift was, they say, occasioned by publications by Sandmel (1962) who exposed rabbinic explanations of Paul and Jesus to be anachronistic (*ibid.*, p. 2); by Neusner (1971) whom they say, posits that "we can no longer be certain that a tradition found amongst the rabbis seldom goes back to traditions extant prior to AD 70" (S. E. Porter & Pitts, 2013, p. 2); by Hengel (1974) who conjectured that the distinction

Background to the Nag/Naj Hammadi Codices

The Nag Hammadi legacy (M. M. Meyer, 2009; J. M. Robinson, 2000) consists of thirteen ancient codices containing some fifty books presently known to have survived their 1945 unearthing from beside a rock located in or near the Jabal al-Tárifredi range not far from Naj Hammádi in Egypt (Pagels, 1989b, pp. xiii - xiv), or thereabouts depending on differing versions (M. M. Meyer, 2009, pp. 2 - 5). These codices together with the *Berlin Gnostic Codex 8502* (Groupe BCNH, 2014), and the *Codex Tchacos* (F. P. Miller, Vandome, & McBrewster, 2011), are commonly referred to as the Gnostic Library. Some of the texts in the codices contained more than one version and there are now various English translations, the Myer translation cited earlier being a recognised international edition which also contains translations of Tchacos and Berlin Codices content. The Nag Hammadi texts are believed to be transcriptions from Greek into Egyptian Coptic, evidenced by the presence of fragments of Greek-language versions of the Coptic found amongst a tranche of texts from a garbage dump (B. P. Grenfell & A. S. Hunt, 1898; B. P. Grenfell & A. S. Hunt, 1898a, 1898b; POxy, 2014) in the vicinity of ancient Oxyrhynchus, located by present-day al-Bahnasa in the Fayum. The Nag Hammadi gospels of Thomas, Mary, Philip and Truth have generated contested exegesis about the nature and content of the Synoptic Gospels and the manner in which the Christian Canon was assembled, thereby enhancing and extending earlier understandings gleaned from study of the words and reported actions of persons of various Christian persuasions over time, for example Irenaeus AD 130 - 202, Athanasius AD c.293 - 373, Origen AD c. 184 - c. 253, Marcion AD 85 - 160, Justin, AD100 - 165, and Tertullian AD 160 - 220 yet without completely demolishing those earlier understandings.

between Hellenistic and Palestinian Judaism in the centuries prior to Christ is false, all Judaism during those times being Hellenistic (*ibid.*, p. 3), which Hellenistic Judaism goes back as least prior to the Maccabean revolt (BC 167 - 160); and by discovery of the Nag Hammadi codices which, through allowing inspection of a strand of Judaism coincident with earliest Christianity, facilitated a shift of focus away from late antiquity and medieval rabbinic documents. Hengel's conjecture of widespread Hellenisation (Hengel, 2003, p. 55), is not fatal to Harnack. Christianity in development

may have been Hellenised through gentiles at Alexandria and elsewhere, through Hellenised Jews in Judea and elsewhere, or through all of these.

Bos rejects views of Gnosticism as a would-be corrupter of Christianity, or a wild offshoot of Greek philosophy, or a manifestation of Jewish tradition to conclude that "ties between Greek philosophy and Gnosticism go deeper than any other" (Bos, 1994, p. 2). He notes an inability of scholars to settle on a definition of Gnosticism and in a passing aside opines that "scholars can seldom transcend the limitations of their own orientations" (*ibid.*)—good ballad forewarning for one attempting to fathom extant Nag Hammadi and Qumran scriptures—Bos's conclusion being that Hellenistic Gnosticism is informed by Aristotle's distinction between reasoned knowledge and intuition, his sleeping World-soul cosmo-psychology and double theology, rather than by Middle Platonism (*ibid.*, pp 7 - 8). Desjardins (1994, pp. 309 - 321) finds simultaneous developments of Christianity and Gnosticism coeval with a three-way struggle amongst Jews, Christians and Gnostics. King (2005, p. 226) claims that much scholarship prior to the discovery of Nag Hammadi texts in 1945 incorrectly presented Gnosticism as a consolidated religion which challenged Christianity and that little of such consolidated religion existed, an opinion not really

lost on Harnack. Wilkin, in debating Harnack's view that the identification of the *Logos* with Christ represents the fall of Christianity to Greek philosophy, would rather have it that early Christian thought represents the "Christianization of Hellenism" (Wilken, 2003, p. xvi). Yamauchi (1994, p. 29) holds that Harnack's Hellenisation thesis is too simplistic and acknowledges Gnosticism's possible existence in pre-Christian times. Pangels (1992, p. 3) reveals that the Gnostics took much from Paul, their fierce adversary. Hill (2004, p. 446) claims that the Christology of the *Logos* as it evolved up to the time of Valentinus (AD 100 – 160) and his followers (AD 2 - 4 centuries) is a product of an adversarial dispute amongst many groups. He says that a view that the Johannine Gospel was generally avoided or resisted by orthodox Christians, while being treasured by various dissenting groups throughout most of the second century, is an oversimplification.

In short, Hellenisation as Harnack reasons it—Hellenisation of Roman Christianity in development largely consists of absorption of gentile Greek ideas and practices confronted in its engagement with so-called gnostic sects—stands alongside conjectures that Hellenised Christianity might well have emerged from within Hellenised Judaism itself, via a widespread Hellenisation of Jew and gentile alike. While Harnack's thesis has been refined through challenge, Hellenisation theory per se has become richer for it. Thus enquiry use of Harnack's work to outline a working definition of Gnosticism, and its application elsewhere under caveat, is valid as is enquiry use of Hellenisation Theory more widely defined to accommodate discussion of diaspora in Judea and Palestine. Work by Walter Bauer (AD 1877 - 1960) is considered valid on the similar grounds and discussion of it in the next paragraph leads to a question of whether or not dating uncertainties of scripture and associated claims of fraud, redaction, recension, polemics and so called apocryphalness in turn require some qualification of the validity of Johannine-Pauline Christology, scriptural exegesis and Hellenisation Theory established in the preceding paragraphs.

Walter Bauer's classic *Orthodoxy and Heterodoxy in Earliest Christianity* (Bauer, 1971), now further articulated and also contested (Holmberg, 2008, pp. 10 - 16; T. A. Robinson, 1988), yet still robust, contains an opinion that in the early centuries AD so-called heretical groups did not splinter from a so-called orthodox Christianity, but rather a proto-orthodox group finally emerged to marginalise minor groups as

heretical in the manner of the construct and refutations earlier exemplified by such writers as Irenaeus (AD 130 – 202), Origen (c. AD 184 – 253) and Tertullian (AD c.160 – c.225). Ehrman, in a manner after Bauer, describes what he names orthodox corruption of scriptures as a process through which “proto-orthodox scribes of the second and third centuries ... [modified] their texts of Scripture to make them conform more closely with their own Christological beliefs” (Ehrman, 2011b, p. xiii, my square brackets), the scribes being motivated, *inter alia*, in preventing their use by “Christians who espoused aberrant views” (ibid., p. xi). A fuzzy borders problem of the kind discussed on pages 350 to 351 of this inquiry accompanies Ehrman’s contribution. Ehrman’s stated focus is on the process *per se* of alteration of text in a setting of ante-nicene tussle for supremacy among groups competing for so-called orthodoxy, rather than on the question of originality of text *per se* (ibid., p. xi). His surrogate for an original text is the NA27 (Nestle, Aland, & Aland, 2007). Yet some of the variations of text he addresses in the work under discussion, and elsewhere (Ehrman, 2011a), go to the very heart of Christianity—the resurrection, times and destinations of Jesus’ travels and identity of persons he met (ibid., p. 205), uniqueness of Jesus as Son and hence the question of the virgin birth (Ehrman, 2011b, pp. 54, 78 - 82, 47 - 118) and Jesus forsaken on the cross (ibid., 175 – 176). Big names are involved in the forgery claim, for example Peter, Paul, Matthew, Mark, Luke and John (Ehrman, 2011a, pp. 9 - 10), attribution of text to the latter four, in Ehrman’s view, not occurring until the time of Irenaeus (AD c.130 – c.202) sometime around AD 185 (ibid., p. 225), rather than beginning earlier in the time of Papias (c.AD 95 – 120) as contested (M. Holmes, 2007, pp. 722 - 732; Yarbrough, 1983, pp. 181 - 191).

Ehrman classifies so-called heretical groups as Adoptionist, Christ was a man, but not a God; Docetist, Christ was a God but not a man; separationist, divine Christ and Christ the man are separate beings; and Patripassianist, God the Father suffered along with Christ the Son. Ehrman’s method is to explain scribed variations discernible amongst available texts as manifestations of efforts by some of orthodox persuasion to counterbalance alterations made by such heretical groups mentioned in the sentence above. He also allows that these heretical groups might be making counter-variations each against the others but he does not play up this kind of oligopolistic counter-claim trading in theological ideas, there possibly being

divisions within each group anyway. It is entirely possible from a relativist perspective that humans of one group may deconstruct another group's careful exegesis and brand it in turn eisegesis, and vice versa, and the process may go on ad infinitum. But in Ehrman's case such a troublesome infinite regress is on hold in that orthodoxy is associated with the group recognised as coming up triumphant in the fourth century in ongoing adduction, or otherwise, of earlier writers to their canon, the so-called *New Testament*. Polemical treatise, pseudography, appropriation of apostolic works to their canon, and specified hermeneutical procedure are pronounced the stuff of the ideas-exchange forging of the Christian canon. Ehrman plays down a possibility that variations are a result of limited secretarial correction of text. (Ehrman, 2011a, pp. 135 - 139).

Ehrman is not without his critics. For example Wasserman (2012), upon the basis of his examination of seventeen examples of orthodox corruption provided by Ehrman, finds Ehrman's work seriously defective (ibid., p. 328) and problematic first, on a basis of sampling, Ehrman having harvested the whole crop to prove his preconception without careful cross referencing of the tendencies of individual witnesses who are not necessarily always consistent in themselves, and second, (a) on a basis of unsatisfactory mechanical classification of so-called variations as either original or orthodox corruption, and (b) on a basis of philological and text-critical groundworks insufficiently sensitive to contexts in which variation is discussed. Ehrman, he claims, has not paid due attention to such matters as "the peculiarities of individual manuscripts and their scribe(s), the citation habits of church fathers, and a familiarity with the character of a particular version and its limitations in representing the Vorlage from which it was translated" (ibid., p. 350).

Messer (2011, pp. 127 - 188), in responding to Ehrman, *inter alia* addresses methodological issues associated with Ehrman's treatment of *Matthew* 24: 36 and *John* 1: 1, and whether or not, in cases of textual variation, the least orthodox variation, or not necessarily the most orthodox variation, is to be preferred and on what grounds, a question of interest to Miller (2011, pp. 57 - 90) who suggests that Ehrman uses least preferred variations (ibid., p. 58) and questions this against a standard of textual criticism predicated on preference for texts that best explain the existence of the other variants. Messer (2011), in respect of *Matthew* 24: 36 which he

says is Ehrman's prime example of orthodox corruption (ibid., p. 130), chooses, against Ehrman, the shorter of the two versions as the one on which redaction was made.

In summary, the preceding discussion on pages 344 to 346 and earlier of fraud, redaction, recension, polemic, dating uncertainties and the like in scriptures, although of great interest to many on a number of grounds and insightful on many counts, does not render this chapter's use of Johannine-Pauline Christology, Hellenisation theory and nineteenth and twentieth century exegesis of scriptures invalid frameworks for conjecture about a fall of Aristotelian rational ethics to Christian virtue ethics. Irrespective of authenticity of authorship, time or times of redaction and recension of scriptures whether by Jewish or gentile hands, Christology, Hellenisation theory and exegesis of scripture have, through ongoing refinement, remained shared dialects of a *lingua franca* central to explanations of Western Judeo-Christian tradition since the nineteenth century.

To continue, redaction and recension are also found in explanations of Hellenisation and critical exegesis employed by scholars focussing more narrowly on Christianity's emergence from Judaism. For example, Boyarin (2012), *inter alia*, ventures beyond a presence of binitarianism in Judaism—which presence is recognised elsewhere in this chapter in discussions of the wisdom literature, the Logos and Word interpretation, Philo and early 'Israelite' polytheism—to claim that the idea of a Trinity was also present in Jewish thought well before Jesus (ibid., p. 102).

Boyarin's Son-of-God claim is based in part on his exegesis of *Daniel 7* which he interprets as suppression of evidence of a God that was "more-than-singular" (ibid., p. 43), and in part on his own suggestion that "Perhaps ... [Christ's] followers saw him arisen, but surely this must be because they had a narrative that led them to expect such appearances, and not that the appearances gave rise to the narrative [sic.]" (ibid., p. 159, my square brackets). A corollary of Boyarin's claim would be that a basis for Christ's transformation from born-son-of-man to born Son-of-God might be found standing alone in Judaism outside of a Hellenised Christian explanation along Christ/logos lines.

Knohl (2002), *inter alia*, prompts the question of a precedence for Jesus's presence



Source: Matson, E. (photographer). *A Photograph of a Fragment of the War Scroll*. Jerusalem: Matson Photo Service. (Matson, 2012).

as Messiah and divine in *John* and the writings attributed to Paul, and his lesser presence as son of man in the Synoptic Gospels. His answer is that Jesus, an Essene, possibly inherited the legacy of Menahem the Essene (*ibid.*, p. 51) who, one generation earlier during the time of Hillel (c. BC 110 – AD 7), after being murdered for his unwanted Messianic claims, was said

by his followers to have risen on the third day, and thereafter been promoted by them as a divine being. Knohl draws on hymn fragments *4QHodayot^a* and *4QHodayot^e* in the thanksgiving or to-the-teacher genre, and *War Scroll 4Q491*, Frag. 11, Col. 1 from the Qumran scrolls. His exegesis relies on a mention of a Paraclete at *John* 14: 16, whom he declares successor to Menahem (*ibid.*, p. 71) mentioned in *Mishnah* and *Talmud (Hagiga 2.2; 77b)*. The Menahem-Jesus link helps explain an emergence of Christianity from Judaism. The 4Q and *War Scroll* fragments Knohl uses, even though they pre-date Cave 1 fragments, are grouped in the thanksgiving-teacher genres because of their partial style similarity to some of those Cave 1 fragments initially assigned the generic name *1QHodayot* (Puech, 2000, pp. 365 - 369). While Cave 4 fragments *4QHoyayot^(a-e)* collectively date from “shortly after 100 BC (middle Hashmonean)” (*ibid.*, p. 366) down to the first quarter of the first century BC (*ibid.*, p. 366), *1QHodayot^{a-b}* fragments date from “the beginning of our era or shortly before it” (*ibid.*, p. 366). The fragments Kohl uses are likely recensions—1Q and 4Q fragments thought to be copies of earlier versions in use during the middle of the second half of the second century BC (*ibid.*, p 368)—which recension status likely renders Knohl’s Menahem hypothesis more finely than it might his more general claim of a Menahem-Messiah seeding of Christianity. The eschatological war content of the fragments accommodates dualism, determinism, and predestination and tells of a coming defeat of evil gods and their demons, beginning with Belial, a war in which angels participate, and pagans are finally converted (*ibid.*, p. 368).

Hengel (2003), conjectures that most of Judaism including that of Palestine was so-

Midrash and Mishnah

Midrash is exegesis aimed at explication of difficult sections of the *Tanaka*, which when its focus is on sources of received laws, is Midrash halakha and when its focus is on non-legal matters of homily—spirits, mysticism and the like—is Midrash aggadah. Midrash is provided by Rabbinical Sages in the post temple era.

Talmud is a text of Rabbinic Judaism consisting of Mishnah—written redaction of rabbinic oral Torah or instructions, and Gemara—elucidation of Mishnah, and other writings of the Tannaim (AD 10 – 200). There are six orders of Mishnah each containing 7-12 tractates further divided into chapters and verses. *Hagiga(h)* is the twelfth tractate of the second order which addresses festivals. Chapter 2 of *Hagiga(h)* discusses purity. Talmud usually refers to the Babylonian Talmud although there is an earlier Jerusalem Talmud.

called Hellenised before the Christian era and that “the whole development of Christological doctrine *could* have taken place completely within Palestinian Judaism” (ibid., p. 55) there being “hardly any doctrinal theme in the *New Testament* doctrine which could not have been thought or taught in Palestine” (ibid.), even a

Son-of-God idea not being un-Jewish

or un-Palestinian. He cautions that, although during some three hundred years of Greek influence, the Greek language had become widely known, Greek speaking Jewish Christians in Jerusalem and elsewhere, with the exception of James and the author of *Hebrews*, were wholly or substantially wanting of a complete classical Greek education and that very few Greek speakers in the mother country and Palestine would have read the Greek classic writers and philosophers in the original. Rather, he says, the Greek Christian word was spread by creative middle class orators, the influence of a more solid Greek education beginning to appear in the second century AD, harbingered in by Luke, now Luke-Acts (AD 80 -100) with possible second century redaction, Clement of Rome (died AD 99 or 101) and the author of *Hebrews* (circa AD 60s). According to Hengel, the “beginning of what, in Harnack’s words, was the final ‘Hellenizing of Christianity’” (ibid., p. 56), occurred about the time of emperor Hadrian (AD 117 – 138) with the first significant Gnostics, Basilides (AD first century known teaching before 138) and Valentinus (AD 100 – 160), with Marcion (AD 85 – 160), and around the same time with the Apologists” (ibid., p. 56), the dates inserted for Hadrian, Valentinus and Marcion being mine, Hengel not having inserted any. Harnack’s acute Hellenisation thus appears coincident with Hengel’s final Hellenisation.

Treshan (2009, p. 71) posits it likely that Jesus spoke and taught in both Aramaic and Greek, with order of usage yet to be determined. As noted on page 310 Jesus is said to have left no theological writings and it is likely that variable circumstances, location, audience and the like might well have determined a bi-lingual Jesus’ choice

of language from day to day. In any event language is a human tool and one cultural construct, whether it be of Hebrew or Greek origin, may be expressed in different languages. Jesus may well have been a radical questioner of temple cult irrespective of the language he used, and projected Himself divine son of God from ideas found in Greek logos or Judaic polytheism or both.

Schäfer (2012) investigates Rabbinic Judaism under the influence of Christianity in the first centuries following the destruction of the temple in AD 70. He brings historical and political dimensions to his exegesis of an emergence of Christianity from Judaism in an approach which, while not completely jettisoning received academic construct about the rigidity of boundaries between say Christianity and Judaism, orthodoxy and heresy, inside and outside and the like, nevertheless proceeds from a claim that boundaries between and within religions in the period of late antiquity were much more fluid than hitherto understood—and during his exposition of that claim he derives a number of significant propositions.

For example, some of his claims are that Christianity and Judaism as sister religions fluidly borrowed from one another and that under rabbinical Judaism, ideas that Christianity had appropriated from Judaism were reappropriated from Christianity, his example being the construct of the suffering Messiah that evolved from the suffering servant of Isaiah, usurped by *New Testament* Christianity, consequently suppressed by rabbis, only to be reappropriated in the seventh century AD as a Messiah named Ephraim who is commanded to take on the sins of a humanity not yet created (ibid., pp. 236 - 237); that Jewish monotheism in practice was less rigorous than in rhetoric (ibid., p. 2); that rabbis engaged in discourse with both Romans and Christians about plurality of gods on their road to a final rejection of an equally tempting and threatening Son-of-God Christology (pp. 27 - 54); that questions about an old God and a young God in the *Hebrew Bible or Tanaka*—and therefore a questioning of an ever was and unchanging God—was resolved differently in Palestine than in Babylon, the Babylonians leaning towards a binitarian interpretation where, in the Babylonian *Talmud* at *Daniel 7: 9*, the Messiah-King, David, is assigned a throne in heaven, his habitation in that place being described in the *David Apocalypse*, which ascendancy has its parallel in the ascendancy of the Lamb Jesus in the *Book of Revelation* in the *New Testament* (ibid., pp. 68 - 102); that a fourth

century AD midrash of Rav Idith, presumably a Babylonian amora who lived around AD 350 (ibid., p. 279), against elevation, by some rabbis, of Metatron to lesser god status, is an insider midrash against so-called heretical Babylonian Jews who deliberately elevated Metatron in defence of challenges to their religion from Christianity's *New Testament* elevation of Jesus (ibid., pp. 103 - 149); that ancient Judaism was well on the way to introducing intermediate levels of angelic power and that rabbis in Palestine were more successful than those in Babylon in countervailing the trend; that according to one midrash, God made Adam mortal only after some angels began to worship him, a midrash which he says is corroborated by Philo's identification of the heavenly Adam with the Logos and Paul's subsequent identification of the Adam-Logos with Jesus Christ—again a midrash against rabbis believed influenced by possible Christological interpretations (ibid., pp. 197 - 213); that a midrash from the *Jerusalem Talmud* focussing on the disappearance of a newborn Messiah is evidence of Judaism's attempt to expel Christianity, then recognised as part of Judaism, from itself (ibid., pp. 214 - 234)—to use Schäfer's word, Christianity, a new religion, is excreted from Judaism (ibid., p. 17), which for some readers might occasion an involuntary whoa-there-why-say-it-that-way questioning call for speculative deconstruction about Schäfer's motive. Subterfuge, polemic and attitude are likely still in there informing interpretation of scripture and may well be elements of scriptures themselves.

Schäfer allows himself boundaries of a kind such as claims that the main opponents of the rabbis were Christianity and Greco-Roman polytheism and that Palestine and Babylon might be differentiated by geo-theological and political dimensions, other boundaries such as orthodox or heretical (ibid., p. 5 - 9) coming and going by virtue of the presence or absence of inverted commas. Boyarin, to some extent, (2001, 2005, 2010) also belongs to a scholarship which, for greater or lesser contradiction, leads readers, if not the authors themselves, beyond the comfort of expositions predicated on us-and-them compartmentalisation and categorisation of groups, borders and the like. Such writings trend against received theory based on working definition categorisations such as Christian and Judaic, as can be found for example in Herford (1903) and Segal (2002).

Herford's book *Christianity in Talmud and Midrash*. (1903) reprinted in 2013,

Herford's Bounded Understanding of the Minim

"We have seen that the term 'Min' denotes an unfaithful Jew, one who was not loyal at heart to the principles of the Jewish religion, and who either in thought, word, or deed was false to the covenant between God and Israel. We have now to inquire whether the term was applied to all Jews tainted with heresy, or whether it was restricted to the adherents of one particular heresy and, if so, which heresy?" (Herford, 1903, pp. 365-366).

"The Minim, then, are unfaithful Jews condemned as such, but not admitting themselves to be such. Therefore the name applied to them was a term of abuse, not merely a descriptive epithet such as 'apostate', 'betrayed', or 'freethinker.' A Min might be an apostate, or a betrayer, and could hardly fail to be a freethinker but the real nature of his offence was rather that of a moral taint than an intellectual perversity." (Herford, 1903, p. 367)

"The theory that the Minim are intended to designate Jewish Christians I regard as having been now conclusively proved. This may be otherwise expressed by saying that wherever the Talmud or the Midrash mentions Minim, the authors of the statement intend to refer to Jewish Christians. The possibility is still open that the Rabbis attributed to Minim opinions or actions which in fact were not held by Christians, or that they occasionally used the term Min as a name for enemies of Judaism, and applied it to Gentiles. These are exceptional cases, and do not affect the main argument. It must, however, be admitted that the theory which identifies Minim with Jewish Christians is not free from difficulties, which would be serious if the evidence in favour of the theory were less decisive." (Herford, 1903, p. 379)

remains a respected work which, *inter alia*, provides a full regimen of "passages from the rabbinic literature illustrating the rise and development of Christianity in the early centuries (ibid., pp. 35, 35 – 338). Segal's work *Two powers in Heaven: Early Rabbinic Reports about Christianity and Gnosticism* (2002) differentiates Complementary Dualism (ibid., pp. 6 -7, 17) from Antagonistic Dualism (ibid., pp 11, 17). Complementary dualism is centred on the two-figures-in-heaven-vision of *Daniel 7: 9* (ibid., pp. 40, 49, 67), a possibility of an angelic mediator between man and God, justice and mercy being independent beings, and Adam being an angel assistant to God his creation of the world (ibid., pp.109 – 113). Antagonistic Dualism posits that the Jewish God who created the world is a lesser god, who unlike the most transcendent God, knows evil. Segal claims that

Christianity, arriving amongst a number of complementary dualist varieties of Judaism, was rejected by rabbis in the first century AD on the basis of its own unattractive version of Complementary Dualism and consequently, during the second century under the influence of Gnosticism, became Antagonistic Dualism, the Jewish God being associated with evil. He also speculates that some rabbis would classify Philo and Gnosticism as strands of two-powers-in-heaven (ibid., pp. 10, 17, 23-24) Antagonistic Dualism.

Schäfer's sources cannot be the written rabbinical engagement with Herford's bounded defined minim so, even though he sometimes mines the same Midrash and Talmud as Herford, he names it "the rabbinic literature for the rabbis' discussion of all kinds of 'heretics'" (ibid., p. 8).

Schremer (2010) argues that a theological perspective is too narrow a perspective from which to interpret rabbinic controversy and contestation, preferring instead, a wider political and social history approach to make a claim that Rome's oppression following the destruction of the second temple was much more the preoccupation of the Palestinian rabbis than was Her religiosity (ibid., p. 22). Schremer interprets rabbinical literature as exegesis which, within a narrow Christian-Jewish framework, permits Christianisation of rabbinical Judaism. Gosen-Gottstein (2009) also finds a narrow Christian-Jewish framework unsuitable and after analysing two such Christian-Jewish framework models which he respectively names the Competitive-Polemical Model (ibid., p. 21), and the Identity-Constructing Model (ibid., p. 23), proffers his own Parallel Spiritual modal (ibid., p. 26) before so-called testing all models against the two-powers-in-Heaven literature as a case of rabbinic polemics. His model approaches the two-powers-in-Heaven literature as a hermeneutical rather than historical response (ibid., p. 31) which allows his conjectured conclusion that the two-powers-in-Heaven literature was not intended as a response to Christianity or to any other religion (ibid., p. 40), but rather a response internal to rabbinic exegesis itself.

Bauckham (2009) posits that the ways in which Jewish monotheism distinguishes its one God do not require a semi-divine attribution to Jesus to allow Him to be included in their one-God identity even though His presence there was a radical development, and that consequently the key to understanding the continuity between Judaic monotheism and Christology "is not to be found in the presence of intermediary figures" (ibid., p. 4).

In summary, Hellenisation theory remains central to scholars interested in Christianity's emergence from Judaism predicated in part on their urgings of widespread Hellenisation of Jews and subsequent carriage of Hellenism into Christianity through, *inter alia*, Jewish Christian sect preaching to Jews and gentiles alike. A very likely existence of such a channel does not, per se, disqualify Alexandrian Hellenisation and is not necessarily fatal to Harnack.

To continue, neither it appears is post Nag Hammadi scholarship ready to jettison Hellenisation Theory or critical exegesis of scripture whether Johannine-Pauline or otherwise. For example Ehrman (2003, pp. xi - vii, 108, 113 - 134) and Metzger

(1989, pp. 76, 84, 75 - 84) date the Nag Hammadi so-called gnostic writings to the second and third centuries AD, and to about AD 400 respectively. According to Ehrman there were, in the second and third centuries, Christians who believed in one God, two gods, thirty gods and 365 gods, Christians who believed that the world was created by God, by an ignorant divinity, or by mistake by a malevolent god, Christians who believed that the Jewish scripture was inspired by one god, or was not inspired at all, or was inspired by the God of the Jews rather than a one true god, or by an evil deity, Christians who believed Jesus to be divine, or to be simply human, or to be human and divine, and Christians who believed Jesus's death to bring salvation, or not to bring salvation, or that Jesus did not die at all—so goes early Christianity in the making in the presence of a now-called-gnostic-mix-of-many-names.

Ehrman, as earlier revealed, is writing in a new millennium genre of loose-border

Metzger Benchmark

“One of the chief opponents of orthodox Christianity was Gnosticism, a syncretistic religion and philosophy that flourished for about four centuries alongside early Christianity.

Most of the several varieties of Gnostic thought were characterized by the assertion that elect souls, being divine sparks temporarily imprisoned in physical bodies as a result of a precosmic catastrophe, can obtain salvation by means of a special *gnosis* ... of their origin and destiny.

The purpose of the extensive Gnostic literature that developed was not only to instruct believers about the origin and structure of the visible world and of the worlds above, but to supply also ... the means whereby one could be victor over the powers of darkness and return to the realm of the highest God.” (Metzger, 1989, pp. 75 - 76)

“Such syncretistic Gnosticism, if successful, would have obliterated the distinctive historical features of Christianity, and it was not surprising that Irenaeus, Hippolytus, and other Church Fathers vehemently opposed these tendencies in order to protect Christianity from internal destruction (ibid., p. 76).

“[There are] ... three features that seem to be characteristic of several Gnostic systems. These are a philosophical dualism that rejected the visible world as being alien to the supreme God; belief in a subordinate deity (the Demiurge) who was responsible for the creation of the world; and, in some systems, a radical distinction between Jesus and Christ, with the corollary that Christ the Redeemer only seemed to be a real human being ...” (ibid., p. 77).

categorisation and a boxed Metzger benchmark is provided as a countervailing remedy against a possible infinite regress of interpretation of linkages between the various names authors now use to discuss what was until recently, under caveat, most often referred to simply and collectively as Gnosticism. There is nothing pejorative intended either way in this juxtaposition, and the benchmark, which is based on Metzger's own exegesis of the role of so-called Gnosticism in the trending canonisation of what he calls the great church (Metzger, 1989, pp. 75 - 89), is

not one of opposition to ongoing exegesis in the light of Nag Hammadi.

English translations of Nag Hammadi texts are available (Mayer, 2005b), the gospels of Mary, Thomas, Truth, Philip, and Judas, among others, being discussed as Nag

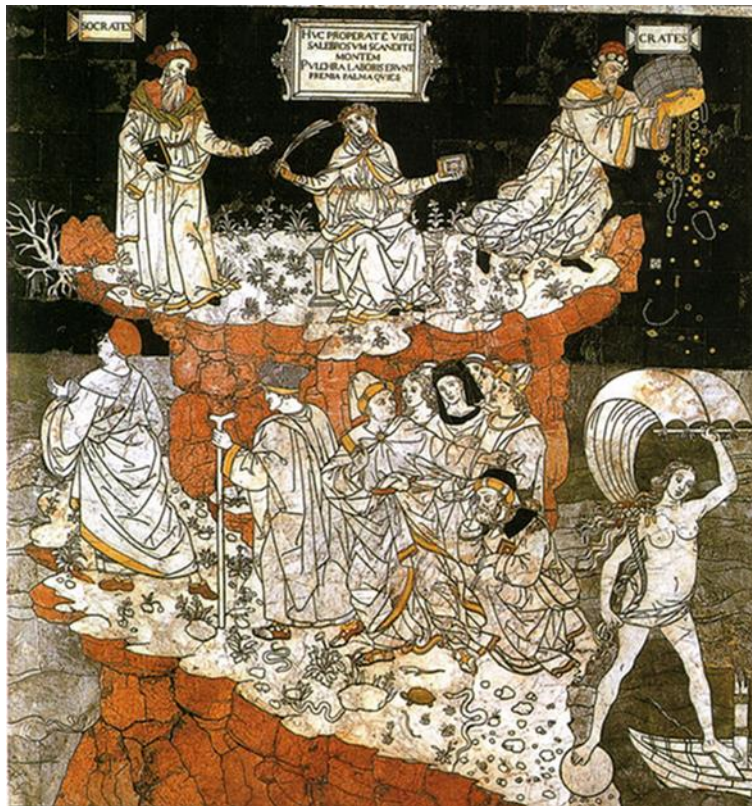
Hammadi texts, irrespective of the dates, places, genres and methods of their recoveries. *The Gospel of Thomas* (Mayer, 2005b, pp. 1 - 30), conjectured composed in Greek before AD 50 (DeConick, 2007, p. 8), or in the second century AD (Valantzas, 2008, p. 14), or within that range at different times as the summary of citations given by Dorian (2014, pp. 124 - 126) reveals, consists of sayings similar and different to the Q source, which sayings, when compared to their parallel forms in *John* 13, 19, 24, 38, 49, 92, are said to reveal the Thomas versions more original. Yet the provenance of Thomas, whose status as a gnostic text is increasingly questioned, remains under contention (ibid., 103 – 111). There are views that Thomas and John are independent sources (DeConick, 2008, p. 179; Sieber, 1990, pp. 69 - 70) or dependent sources (Goodacre, 2012, pp. 193, 193 – 195) or perhaps drew from a common source (Koester, 1990, p. 114). Perhaps also the communities of Thomas and John were closely interrelated in Syria (G. Riley, 1995, p. 177).

Pagels admits similarities and says that the *Gospel of John* is a work crafted to intentionally contradict the *Gospel of Thomas* especially on the question of God's light being within all humans, or being brought to humans through Christ (Pagels, 2003, pp. 34 - 35). Authorship of both John and Thomas is uncertain. Davies suggests that "the Gospel of Thomas would be a text of Christianised Hellenistic Judaism, sharing with such authors as Philo [(BC 25 – AD 50)] and Aristobulus [(BC 3rd or 2nd centuries)] various principal themes and approaches ... The Gospel of Thomas is to Christian Hellenistic Judaism what Q is to Christian apocalyptic Judaism." (S. L. Davies, 1992, p. 683, my square brackets). Such nice statements, inviting as they are, might yet be taken carefully. The Q source as Jesus sayings common to Matthew and Luke but not Mark, although widely supported, is contested (Edwards, 2009, pp. 1 - 6; McNicol, Dungan, & Peabody, 2002, pp. 240 - 242).

Mirkovic (1995, p. 22) places the *Gospel of Thomas* in the wisdom tradition of *Proverbs*, *Ben Sira*, or the *Wisdom of Solomon* urging that it is informed by Jesus sayings crafted outside of early Palestine communities by ascetic wandering holy men and women in Syria. John and Thomas are said to share this same *Sitz im Leben*—in this case the wisdom of wandering ascetics in the first century Syria—which explains similarities (ibid., p. 3). The wandering ascetics were informed, in turn, by Syrian Stoic wisdom (ibid., p. 22).

Mayer holds that “Jewish wisdom literature itself bears the marks of Hellenistic concerns” (2004, p. 17) and conjectures Thomas’ Jesus as one linked to the wisdom

The Hill of Fortune



Source: (Bernardino di Betto da Perugia known as Pinturicchio, 1506). (designer). *Allegory of the Hill of Fortune*. (marble pavement in the Cathedral of Siena probably crafted by Paolo Manucci). In Cust, R. H. H. (1906). *The Pavement Masters of Siena*. (p. 27). London: George Bell and Sons. (Cust, 1906). The colour version shown was cropped from Santi, B. (1982). *The Marble Pavement of the Cathedral of Siena*. Firenze, London and New York: Scala Books (Santi, 1982). Fortune has safely delivered seekers of knowledge to an island and in various guises they are walking over rocks, snakes and weeds to reach the summit where Knowledge sits. Knowledge holds a palm to Socrates and a book to Crates who empties earthly riches into the sea. The inscription above Knowledge reads as follows: Line 1: *huc properate viri*, Line 2: *salebrosum scandite montem*, Line 3, *Pulchra laboris erunt premia palma quies*, together liberally translated after Santi (1982) as ‘thus, the wise man who has attained virtue will receive serenity as his prize’. As the mosaic makes clear such a prize is not easily won. The mosaic might be a rare depiction of the knowledge link between pagan and Christian. Is peace being made with Plato?

of Sophists, Diogenes (BC 412–323), Plato (BC c.428 – c.348) and Socrates (died BC 399). Bloom comments that Thomas “spares us the crucifixion, makes the resurrection unnecessary, and does not present us with a God named Jesus” (Bloom, 1992, p. 125). Clark argues that “the GTh [Gospel of Thomas] is a Christian Middle Platonic Gospel that combines the Christian significance of Jesus and his teachings with the essential tenets of Alexandrian Middle Platonism” (S. Clark, 2014, pp. 14 - 15, my

square brackets). Patterson allows the possibility of Thomas’ being Middle Platonist but offers qualifications—Thomas “does not dwell on many of the common themes of the Platonic revival: the Ideas and their immanent forms; the concept of the One and the Dyad, or the notion of *Daimones* as mediator figures” (Patterson, 2008, p. 204). King depicts the *Gospel of Mary* (Mayer, 2005b, pp. 31 - 42) as one of the writings on the wrong side of the canonisation battle perhaps because, *inter alia*, it rejects the suffering and death of Jesus as a path to eternal life, and pronounces Mary Magdala *qua* prostitute to be a fiction (K. King, 2003, pp. 3 - 4).

The question of which Mary is the namesake is still in discussion and the incompleteness of the document and signs of coupling redaction of its two parts continue as barriers to detecting its genre. The confrontation in it between Mary and Peter also occurs in the *Gospel of the Egyptians* (Mayer, 2005b, pp. 113 – 142), the *Gospel of Thomas* (2005b, pp. 1 - 30) and the *Pistis Sophia* (Hurtak, 1999; Mead, 2005). Mayer (2005a, 2005b), who holds that in usage the term Gnosticism is viable (Mayer, 2005b, p. XI) also questions whether the *Gospel of Thomas* (ibid., p. XVI – XVII) can be simply classified as a Gnostic text (2004, p. 10). Mayer identifies four groups of so-called Gnostic gospels, the sayings group, for example the *Gospel of Thomas*; the Sethian group which interpret the creation story innovatively and blend their interpretations with ideas from Greek philosophy, for example *The Secret Book of John* (Mayer, 2005b, pp. 143 - 184); the Valentinian group which rely in turn on *New Testament* claims, *The Gospel of Thomas* and the Sethian texts, Valentinian examples being *The Gospel of Philip* (Mayer, 2005b, pp. 42 - 88) and the *Gospel of Truth* (Mayer, 2005b, pp. 89 - 112); and a fourth group consisting of the *Gospel of Mary Magdala* (Mayer, 2005b, pp. 31 - 42) and *The Book of Baruch* (Mayer, 2005b, pp. 261 - 276) which Mayer says defy classification. For example Baruch with its Jewish approach to gnosis allows the legendary Heracles, that is, Hercules, to be a gentile prophet and gives Jesus the final say on good news. The presence of Greek influence in all four of Myer's classifications of the Nag Hammadi gospels is enriching and refining of, rather than fatal to, ongoing efficacy of scriptural exegesis, whether Johannine-Pauline Christology or otherwise. So too it is enriching and refining of Hellenisation Theory.

In summary of Section 3, recent scholarship, which in part relies on nineteenth and twentieth century definitions of Gnosticism and Hellenisation and scriptural exegesis from those same centuries to anchor and differentiate its own new meanings and perspectives about Jewish and Greek ideas intermingling, does not render Johannine-Pauline Christology or early Hellenisation Theory completely obsolete. Rather, through refinement and enrichment of ideas originated there, recent scholarship establishes their contribution and validity as bases upon which, in part, their own new insights and sophistication rest. Likewise is it so for recent scholarship about authorship and/or redaction of scripture and for contributions which interpret Christianity in development from Jewish perspectives.

CONCLUSION

This chapter has focused on how intermingling of ideas about a personal Hebrew God in transcendent rule over the world, and a Greek impersonal god melded into the

Table 37: Fracturing of Aristotle’s Unified Scheme

Theoretical Philosophy			Practical Philosophy	Poetical Philosophy
Theoretical Philosophy focuses on knowledge as an end in itself rather than on practical applications.			The study of political Science and ethical action in the wider social and cultural domain. Economics, strategy and rhetoric are included under this category	The study of production rather than action: a theory of art.
Physics	Mathematics	Metaphysics		
The study of material things which are subject to motion.	The study of that which is unmoved but also unseparated from matter.	The study of that which is unmoved but separated from matter (the transcendent).		
falls to	remains	falls to	falls to	not applicable
revealed truth	mathematics	Christian theology	faith Ethics	not applicable

Source: Compiled by Ian Eddington from Table 17 and the chapter text.

world through *nous* in reason, may have produced cognitive conditions conducive to emergence of a world religion subsequently occasioned by the advent of Christ, and how, as a consequence of intermingling of Judeo-Greek heritage with codifying ideas of Christianity in development, Aristotelian rational Ethics following Christ’s advent, and the witness, redacted or otherwise, of His apostles, God is found in Christ, and through Christ, God’s presence is found anew in nature and in man. This presence is

Table 38: Key Terms Nuance—Rational Metaphysics to Christian Theology

Field	Esoteric Dimensions of Science, Ethics and <i>Polis</i>		
	Method	Sphere of Operations	Constraints
<u>Under the Fall of Greek Rationality to Revealed Faith to the Time of Augustine</u>			
Science	Science is irrelevant and at best, as naked syllogistic method, has been banished to dormant house arrest.	The oblivion of an imposed banishment.	Revealed truth.
Ethics	The overcoming of the absolute sin of the commandments through grace and faith in a personal Christ and the surrender of human will to God’s will, that is, surrender of irrational soul, containing evil and sin and the devil’s work, to rational soul, containing the goodness of God’s work.	A condition and state of moral virtue attained through, and proportional to, acceptance of the absolute laws of revealed truth.	Human free will and human frailty.
<i>Polis</i>	Ratification, through grace, of citizenship of an eternal cognitive city of God attainable by personal acceptance of God as <i>Logos</i> and the all in all.	The human soul in various states of beatitude appropriate to levels of acceptance of Christ as <i>Logos</i> .	Contaminated nature, flawed humanity, free will, and the devil’s evil presence in human irrational soul.

not simply a Greek rational *nous*. Rather, it is moral and personal, and behind it lies not only God’s love and grace but also God as the final and efficient author and cause of all things.

Table 39: Progressive Articulation of Thesis Proposition Statements—Rational Metaphysics to Christian Theology

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. The <i>Polis</i> is a cognitive gathering or eternal city of God predicated on acceptance of His grace. Reason remains divine as a gift of a now Christian God who is all reason and is present in the human soul. Virtue is obedience to God's laws through acceptance of His grace and is practised by refusing to transgress Christian prohibitions.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. Metaphysics as contemplation of the one is replaced by unquestioning life in Christ. Science as reasoned demonstration of natural truths is banished to irrelevant oblivion. Practical Ethics is replaced by faith Ethics.
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. Aristotelian practical Ethics becomes faith Ethics.
<u>Integrating Summary of Part Two</u>			
Aristotle's unified political philosophy fractured under an intermingling of Greek heritage and Jewish revelation doctrine and an ongoing development of Christianity. By the time of Augustine (AD 354 – 430), Greek rational Ethics had been replaced by revealed faith Ethics, Christ as divine <i>Logos</i> had replaced <i>nous</i> as <i>logos</i> . Aristotle's categorical explanation of being had been replaced by divine revelation's announcement of God as the creator of the world and its beings. A personal Christian God of love was available as an alternative to a Jewish God of wrath and both had replaced the impersonal Greek god. The Greek republic or city of ideas had been replaced as <i>Polis</i> by a Christian city of God. Science, now irrelevant to faith, and no longer recognised as the arbiter of truth under theoretical and practical reason, or knowledge of the four causes, but recognised as syllogistic method, is ignored to survive as best it can.			

In short, nature became a Christian moral order rather than a rational natural law of necessity and its attendant virtues of place; a Christian God came to inhabit the Greek soul; Aristotle's rational explanation of being together with its attendant psychology and physiology of soul were diminished but not completely extinguished.

Philosophy and Science become estranged from each other and from faith understood as revelation.

The one uniform Greek *logos* inherent in all mankind was taken over by Christ's inherence in mankind, and technical rational virtue was replaced by moral virtue in the form of a Christian reformulation of virtue as obedience to the commandments of the Hebrew *Torah* in the light of Christ's love. Science, stripped of its intellectual virtues richness, and seeker of wisdom and truth status, and its right to roam across all divisions of philosophy in search of that truth, was banished to house arrest and irrelevant isolation as naked syllogistic method.

As earlier outlined, Table 37 on page 358 classifies these changes in the form of the template employed earlier in Table 17 on page 211. The big picture movement of Table 37 can be summarised as the estrangement of philosophy, Science and theology each from each other, and the transformation of the rational *Polis* into a spiritual city of God.

Again, as specified, the specific purpose and work of the chapter is concluded in Table 38 on page 358 and Table 39 on page 359, which have been assembled from the content of Sections 1 and 2. Table 38 summarises the substantial key terms nuance resulting from the Judeo-Greek intermingling with codifying ideas of Christianity in development. Table 39 on page 359 brings key terms nuance outlined in Table 38 to interpretation of the Thesis Proposition Statements.

Chapter 5

Science, Ethics and *Polis* from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)

INTRODUCTION

Of the advent of Christ and attendant morphing of rational values into faith values discussed in detail in the previous chapter Turner simply states that Christ did not found a school of philosophy but rather appealed to the divine above all systems and in so doing “discarded all formal definition and proof” (W. Turner, 1903/2012, p. 215). From this time of Christ on there would thus be a “religious view and a rationalistic view ... [about] every question” (ibid., my square brackets).

In the Christian narrative the period reaching from Christ to the end of the fifth century is known as the period of Patristic philosophy (M. Hall, 1928/2008, p. 16; W. Turner, 1903/2012, pp. 215 - 217) and in that period, as earlier demonstrated throughout Chapter 4, there was a consuming interest in the question of the relationships between matter and spirit. The substance of Christ had replaced categorical substance as Aristotelian potential, *nous* had become the *Logos*, and the *Logos* had become Christ through whom all being emerged. The faith Ethics of revelation had colonised rational Ethics.

The specific purpose and work of this chapter is to trace the relationship between Science, Ethics and *Polis* from the time of Augustine (AD 354 – 430) to the time of Abelard (AD 1079 – 1142) and his contemporaries at the close of the twelfth century. The esoteric descriptions of Science and Ethics derived in the previous chapter are the starting point, Science is syllogistic demonstration of fact but revealed faith has little use of it. Ethics is the overcoming of absolute sin identified in the commandments and its domain is grace and faith in a personal Christ and the surrender of the human will to God’s will. *Polis* remains a Christian ideal city of God.

As the chapter progresses human reason emerges as the method of syllogistic demonstration in dialectic and disputation. When reason so understood is employed under authority of revealed faith it begets the Science of theology. The mysteries of faith remain off limits to this Science even though reason is gradually permitted to

participate in proofs of the existence of God and in differentiating between the teachings of the Church Fathers. Ethics remains that act of unwillingness to transgress Christian prohibitions. Revealed faith is its wellspring and Ethics too may access reason except in questioning of the mysteries of faith. Thus Science and Ethics become compatible and reason and faith become one by virtue of their cohabitation in reason's method. Both serve the needs of those seeking citizenship in eternal Christian city. Explication of these understandings of Science, Ethics and *Polis*, and their relationships, is the finishing point of this chapter.

During the time span covered by the specific work of the chapter the Roman Empire

Naming Conventions ⁽¹⁾		
Classical Period	From circa the eight and seventh centuries BC until the fifth century AD.	BC 900 - 800s to AD 400s
Early Mediaeval Period	From the fifth century AD to the eleventh century AD.	AD 460 to 1000
High Mediaeval Period	From the eleventh century AD till circa the beginning of the fourteenth century AD.	AD 1000 to 1300
Late Middle Age	From the beginning of the fourteenth century AD until the beginning of the sixteenth century AD.	AD 1300 to 1500
Pre-Modern Age	From all of the classical age up to the seventeenth century AD.	BC 900 - 800s to AD 1600s
Modern Age	The Modern Age is taken to be the period from circa the time of Francis Bacon (AD 1561 - 1626) and Thomas Hobbes (AD 1588 - 1679) until the unfolding emergence of post-modernism in the first half of the twentieth century.	From AD 1600s to circa AD 1930 - 50s
Post-Modern Age	From the early to mid-twentieth century and, as of 2013, ongoing.	From c. AD 1930 - 50 and in 2013 ongoing.
Dark Ages	A term less frequently used to describe parts of the Mediaeval Period following the invasion of the so-called barbarians. The term is not used hereafter.	Not Applicable

Notes: (1) Year attributions are indicative, not cardinal and prescriptive.

of the chapter. The historical sketch begins in the next section and continues until page 365. The discussion of the universals controversy is located on pages 365 to 366. Together, the historical sketch and the discussion on universals constitute the general work of the chapter.

In order to meet dictates of software formatting the next section follows on a new page.

in the West fell to the Germanic Odoacer (AD 433 – 493) when Romulus Augustus (AD c. 461 – unknown) abdicated in AD 476. Its Eastern Empire continued to survive. The chapter's time span encompasses all of the so-called Early Mediaeval Period, and part of the High Mediaeval Period. Before proceeding to the specific work of the chapter I briefly sketch a historical context which will serve as a backdrop for that work. I also discuss an ideas controversy about the nature of Aristotelian universals because it is germane to the specific work

THE GENERAL WORK OF THE CHAPTER BEGINS
Historical Context

The decline and fall of the Roman Empire circa AD 476 was in part due to the migration of the Goths in the fourth and fifth centuries and the warfare associated with it. Whereas Europe remained largely a place of turmoil during the three centuries following the fall of Rome's western empire, parts of the relatively then far-away lands now known as the United Kingdom and Ireland remained peaceful by comparison. In those lands, learning, including discursive reasoning, flourished. This flourishing was subsequently aided by an arrival in England in AD 597 of a monk named Augustine with a colony of monks from Monte Casino (Orme, 2006, p. 18), and during the sixth, seventh, and eighth centuries, aided by the unification of this colony with those of the North and West, monasteries and their schools began to develop in England (Orme, 2006, pp. 22 - 24). Some of these schools became so famous as to attract students from as far away as Greece and Egypt (Magevney, 1900, p. 23).

The Goths were subsequently converted to Christianity (Rohrbacher, 2002, p. 216).

<p style="text-align: center;">Merovingian Kings</p> <p>A dynasty beginning with Childeric I (c. AD 457 - 481) AD and ending with Childeric III (c. AD 717 - c. 754) whom Pope Zachary (AD 679 - 752) replaced with the Carolingian Pepin or Pippin the Short (AD 714 - 768) in AD 751. Pippin shared a short de facto rule with his brother Carloman (died AD 754) from AD 741 to 747, jointly ruling over parts of once Roman Gaul and other lands. After Carloman's retirement Pippin, with Pope Zachary's support, coerced Childeric III, whom the brothers had appointed as King, into a monastery and ruled in his own right.</p> <p style="text-align: center;">Carolingian Kings</p> <p>Rulers of parts of once Roman Gaul and other lands from Pippin the Short (AD 714 - 768) through a high point with Charlemagne (AD c. 797 - 838) to a break up of its lands following Pepin I of Aquitaine (AD 797 - 838).</p>

In a general argument in which he examines the growth of individualism throughout the middle ages, Graves (1914, pp. 1 - 3), as do Duiker and Spielvogel (2008, p. 282), explains those early Middle Ages as a fusion of Greek, Roman and Christian elements with his so-called German persuasions. Graves fixes the over-riding spirit as one of assimilation

and suppression (Graves, 1915, pp. 2 - 3) which allowed the Christian capture of barbarianism through absorption.

The Merovingian kings, from the middle of the fifth century until AD 751, when they were replaced by the Carolingian Pippin (sometimes Pepin) the Short (AD 714 - 768), had gained rule over Roman Gaul. At its height under the Carolingian Charlemagne (AD c. 797 - 839), Gaul covered most of Western Europe. The Merovingian Clovis I (AD 466 - 511) is named as the King who brought Christianity

to his reign towards the end of the fifth century (W. Turner, 1903/2012, p. 238), even if possibly for political purposes (Bainton, 2000, p. 138).



Source: Alma-Tadema. (1861). *The Education of the Children of Clovis I.* (1861). (oil on canvas). Private Collection, Florida: Olga's Gallery. (L. Alma-Tadema, 1861) The Queen is watching her son being educated in weaponry in order to revenge the killing of his father.

In respect of the guardianship of learning, the performance of the Merovingian kings is said to have been lacklustre (W. Turner, 1903b, p. 238), a situation which began to change with the Carolingians. The Carolingian Charlemagne (AD 768 - 814) is of special note. In consolidating his empire

he established palace schools which went beyond teaching the soldier arts. These schools placed a greater emphasis on cultivation of mind (Barbero, 2004, pp. 232 - 238; W. Turner, 1903/2012, p. 241).

In his rehabilitation of learning in Europe, Charlemagne made use of that repository



Source: Schnetz, J. (1830). (artist). *Alcuin Presenting Manuscripts Discovered by His Monks to Charlemagne and His Court.* (oil on canvas). Paris, Louvre Museum: Philosophy and Philosophers in Art. (Schnetz, 1830).

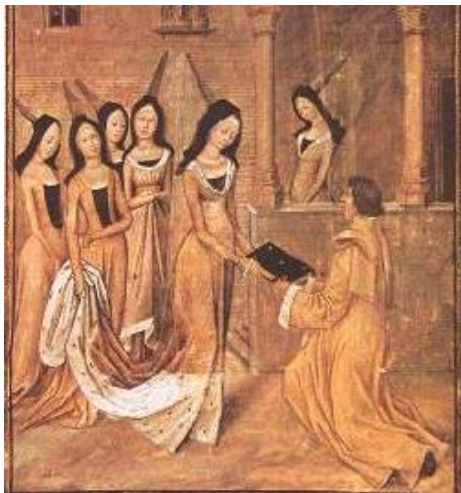
of learning available then in the lands of the now United Kingdom and Ireland. During the eighth century he employed monks such as Alcuin (AD 736 – 804) to carry that learning to Europe (C. S. Jaeger, 1994, pp.23 - 33; Pedersen, 2009, pp. 74 - 77; A. F. West, 1892, p. 28). The practice continued in the ninth century, Eriugena (AD c. 805 – 877) being a most notable teacher and courtesan. In turn, this flame of knowledge was to return to its origins to rehabilitate learning there after destruction rendered by the Norsemen. This rehabilitation began when Alfred the Great (AD 849 - 899) assumed the throne and

effected reforms similar to those made by Charlemagne in Gaul (Asser, 1983, p. 219). Monastery education was to accommodate incremental change up until its

leading schools began to morph into universities from the twelfth century onwards and I discuss these changes further as the chapter progresses.

The Controversy of the Universals

The earlier discussion about universals beginning on page 209, explains that, for Aristotle, particulars, for example, that horse, that bird, existed independently outside



Source: (Dutch or Flemish miniaturist, 1428–1430, or after 1436) Jean de Meng presents the *Consolation of Philosophy* to Margaret of England. Jean de Meng was a translator of the ‘Consolation’ which Boethius wrote in prison during the 5th to the 6th centuries.

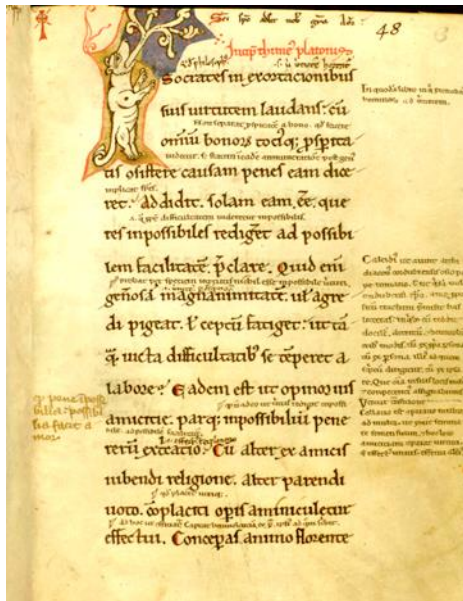
of the mind. Universals such as “horseness” or “birdness”, in general, species and genus, existed in reality only within the mind, and Science brought truth about universals.

Mediaeval interest in universals is said to have been sparked by unknown scholars whose curiosity was wetted by uncertainties found in Boethius’ commentary on Porphyry’s commentary (*Isagoge*) on Aristotle (Marenbon, 2006, 24 - 25; Mellone, 1918, p. 241; Sorabji, 2006 - 160; Ueberweg, 1889, Vol. 1 p. 368). These early Scholars had

access to all or parts of Aristotle’s *Categories* (Aristotle, 1938a, 1952a) and *De Interpretatione* (Aristotle, 1938b, 1952j), Porphyry’s *Isagoge* (Porphyry, 1887), his introduction to the *Categories*, two commentaries by Boethius on the *Isagoge*, Boethius’ own treatises on formal logic, and some or all of Plato’s *Timaeus* (Plato, 1925h, 1952w) available in Latin translation from Apuleius (AD 125 – 180) and Augustine (AD 345 – 340), and from Calcidius (AD 4th century), including his commentary. These questions about the nature of universals were argued on a basis of logic and reason and were first discussed in a context of differences between Plato and Aristotle and only later became contentious within scholastic synthesis of reason and faith (Ueberweg, 1889, pp. 366 - 367).

Before Aristotle’s re-emergence in the West, during the period 1095 – 1292, the period of the Crusades (Hergenhahn, 2009, p. 82 - 85), two schools of thought about universals had been coaxed into existence. One is called nominalism or the dictum of universals *post rem*, universals after the thing. In its extreme form nominalism accepted that only the name of a genus as real. In its moderate form nominalism

accepted that universals exist in the mind. The other school is called realism or the dictum known as universals *ante rem*, universals before the thing. In its extreme form realism held that universals exist objectively as beings in their own right



Plato. (c. 1263). *MS Digby23, folio 3r*. (Part 1, Plato, *Timaeus*, in the Latin translation of Calcidius). Bodleian Library, Oxford University. (Plato, c. 1263)

independently of the individuals. In its moderate form, realism accepted that universals are understandings abstracted from the existing individuals of a group, such that the common nature of the group is captured by the universal, a dictum known as universals *in re* (Garcia, 1994, p. 102; Mellone, 1918, p. 241).

Extreme or exaggerated realism has its origins in the template ideas of Plato while moderate realism has its origins in the Aristotelian doctrine that universals exist only by their inherence in the individuals which constitute

the species (De Wulf, 1911, n. p.). Nominalism has its origins in the ridicule of those who rejected Plato's idea of the forms *Republic* 476 - 477 (Plato, 1952r, pp. 370 - 371; 1969a) and at first made little early progress against Aristotle's realist categorical ontology. Modern philosophical developments about the nature of nominalism and realism introduce complexities which go beyond the transactions of the mediaeval protagonists and are not considered in this enquiry. Table 40, which summarises key mediaeval universals-controversy terms usage, has been constructed for ease of reference when these terms are subsequently used in tracing relationships between Science and Ethics in this chapter.

The universals controversy lost some of its heat as the full corpus of Greek thought flowed back to the Christian West. Although fine divisions of thought can be found in the controversy, it is instructive to find, even given the head start of the *Categories* (Aristotle, 1938a, 1952a), *On Interpretation* (Aristotle, 1938b, 1952j), and the commentaries on Aristotle, just how relatively little progress had been made in making up for the lost Greek corpus before its re-emergence.

In summary, education in general, and learning in particular, to the extent that they did survive, survived by virtue of the establishment and spread of palace and

Table 40: Medieval Nominalism and Realism

Response	Definition	Dominant Features
Extreme Nominalism	Nominalism maintains that there is no universality either of concept or of objective reality, the only universality being that of the name.	<ul style="list-style-type: none"> • <i>universalia post rem</i> or universals after the thing. In this case universals captured about existing real things exist only in name.
Conceptualism, also Known as Moderate Nominalism	Conceptualism concedes the universality of the idea, but denies that there is a universality of things corresponding to the universality of the mental representation.	<ul style="list-style-type: none"> • <i>universalia post rem</i> or universals after the thing. In this case universal ideas about existing things exist only in the human mind.
Exaggerated Realism	Realism, in its exaggerated form, maintains that universals exist outside the mind, in other words, that there are objective realities which, independently of our minds, possess universality.	<ul style="list-style-type: none"> • <i>universalia ante rem</i> or universals before the thing. In this case universals in the divine mind, <i>universalia ante rem</i> , are answered by universals existing in things themselves, <i>universalia in re</i> .
Moderate Realism, also Known as Aristotelian or Thomistic Realism	It grants that there is in things an objective, potentially universal reality, contends that the formal aspect of universality is conferred by the mind, and that consequently the universal in the full panoply of its universality exists in the mind alone, having, however, a <i>fundamentum in re</i> , a foundation within the thing.	A synthesis of: <ul style="list-style-type: none"> • <i>universalia ante rem</i>, the types of things existing in the mind of God. • <i>universalia post rem</i>, concepts existing in the human mind. • <i>universalia in re</i>, universal essences existing in things themselves.

Source: Constructed by Ian Eddington from Klima, G. (2007). *The Medieval Problem of Universals*. (n. p); Turner, W. (1903). *History of Philosophy*. (pp. 253 - 407). New York: The Athenaeum Press; Ueberweg, F. (1889). *History of Philosophy*. (pp. 365 - 366). New York: Charles Scribner's Sons.

monastery schooling until the twelfth century and the beginning of universities. Besides Christian literature, classical texts were relatively scarce but amongst them were commentaries on classical logic which allowed cognitive flow from particular premises to general conclusions. Questioning of the commentaries occasioned two schools of thought about universals: nominalism and realism. This brief sketch of the spread of monastery education and a nominalist/realist divide in interpretation of universals aims at no more than providing a backdrop for more detailed articulation of the specific work of the chapter which begins in the next paragraph.

SPECIFIC WORK OF THE CHAPTER BEGINS

The specific purpose and work of this chapter is to trace the changing esoteric relationship between Science, Ethics and *Polis* from the time of Augustine (AD 354 - 430) to the close of the twelfth century.

Turner claims that, leaving St Augustine aside, “Patristic philosophy is fragmentary and devoid of unity” (W. Turner, 1903/2012, pp. 235 - 236) but that it did provisionally establish “the intellectual basis of the dogmatic system of the church” (ibid., p. 236) and “stated the question which Scholastic philosophy took up and

answered: How can reason and revelation be shown to be distinct and, at the same time, consistent in truth?" (ibid., p. 236).

Turner's question frames this chapter's specific discussion of relationships amongst Science, Ethics and *Polis*. Addressing the question Turner poses, I investigate only such ecclesiastical history and debate as is sufficient for demonstration purposes, drawing on secondary sources when searches for English language versions of original works are exhausted. Developments in the relationship between Science and Ethics are traced in two ways. First, beginning in the next paragraph, I examine their presence in curriculum structure, syllabus content, and teaching method up to the time of Abelard (AD 1079 – 1142). Secondly, beginning on page 380, I examine their presence in, and efficacy to, the works and purposes of scholarly writers.

Roman versions of Elementary Schools, Grammar Schools, and Universities of Greece had emerged as Rome became increasingly under the influence of Greek education (A. D. Kahn, 2000, p. 61) and adopted Greek institutions and methods. Cicero (BC c. 106 – 44) makes many references to Greek education and its benefits for Roman orators in his *On Oratory and Orators* (Cicero, 1855, pp. 172, 179, 254, 266, 327, 341). Starting with Julius Caesar (BC 100 – 44), public funding of education emerged in the form of salaries, scholarships and privileges (Schneider, 1933, pp. 670 - 674). This system of schooling survived in an increasingly weakened condition in the period leading up to Rome's Western fall and haphazardly afterwards (Duff, 2003, p. 208 - 216; Graves, 1909, p. 267, 230 - 271). In part, the Greco-Roman civil system began to be replaced by a Christian monastic system.

Graves (1915, p. 4 - 7), like Dunn (2003, p. 1 - 24), traces the development of monasticism from the caves of Egypt and its spread through Syria to its emergence in the West circa AD 350 in the form of the communal aloneness of the Christian brotherhoods and sisterhoods. Not all monasteries were in isolated places, many being near cities or in cities (ibid., p.12). In these first monasteries there was a great focus on transcription and preservation of Roman Christianity particularly in the early years of the aftermath of the so-called barbarian destruction. This Christianity, and the learning it carried in its attempt to cultivate the soul, was, in the fifth century through Augustine (AD 354 – 430) and Cassian (circa AD 360 - 435), and in the

sixth century, through Benedict (AD 480 - 547), largely to inform monastic life (M. Dunn, 2003, pp. 111 - 137; Hassett, 2011, n.p.; Hugh of St Victor, 1911, *passim*).

Magevney (1900, pp. 10 - 11) posits, through an uncited quote from Newman, that the early Benedictine cloister schools were little different from the former municipal schools of the Roman empire, which schools they replaced, and that both kinds of schools together were in essence transpositions of Pythagorean, Platonic and Aristotelian education sanctioned on the authority of St Augustine. Benedict, who it appears did not much like the education he received in Rome (Vauchez, 2000, p. 167) is said to have founded his cloister at Monte Cassino in AD 529, the same year that the pagan *Academy* in Athens was finally closed (Grun & Moloney, 2006, p. 14).

I now turn to curriculum structure in mediaeval times and how nuance of the key terms Science and Ethics might be gleaned from analysis of it. Augustine (AD 345 – 430), *inter alia*, discusses education in his *On Christian Doctrine* (1872). It is clear early on that education is for purposes of reading and understanding Christian scriptures (*ibid.*, p.32 - 33) and one must endeavour to read towards acquisition of, and/or in, a state of grace, hope and love (*ibid.*, p. 33). So-called heathen knowledge about such matters as mathematics, astronomy, logic and the like might, under caveat, serve to elucidate interpretation of scriptures (*ibid.*, pp. 55 – 80), and rhetoric may well be employed for teaching purposes, under caveat of bringing scriptural truth to hearers (*ibid.*, pp. 120 – 171). Maxims of method of a kind might be drawn from various chapters. For example wisdom is more important than rhetoric (*ibid.*, p. 124), unite eloquence with wisdom (*ibid.*, p. 126), avoid obscurity (*ibid.*, p. 133), a variety of delivery styles should be employed (*ibid.*, p. 161) and many more. Grammar is of first importance, and exegetical grammar at that, because it aids the discovery of truth in the scriptures. Dialectic lays out the rules for more complete understanding and determines what is to be understood. Under Aristotelian influence, dialectic had become clearly associated with the method of syllogistic logic. Under Augustine mathematics, as arithmetic, allowed the discovery of the mystery of numbers contained in the scriptures and might permit the human mind to approach the immutable. By Benedict's time, meditative reading is allowed to reinforce community and faith, and an exalted state of mind, but criticism is fatal (Hankins, 1990, p. 18).

A description of the Platonic system spoken of two paragraphs earlier can be found in Book 7 of *The Republic* (Plato, 1952r, pp. 388 - 401; 1969a). The three-tiered system discussed there begins with the beauty and form of gymnastic and musical education and then progresses through arithmetic, geometry, astronomy and music to develop a capacity for reflection in readiness for graduation to the third tier which is philosophy as contemplation of God. Plato's middle level subjects came to form the basis of the Quadrivium, the upper tier of the two-tier curriculum structure of the Middle Ages. This two-tier structure accommodated the so-called seven liberal arts or skills in a Trivium of grammar, rhetoric and dialectic, and a Quadrivium of music, astronomy, geometry and mathematics. At first, mathematics consisted mainly of arithmetic. The third tier had not disappeared. God's truth had been revealed and reason was, in time, to be called to help with interpreting it. Contemplation of God could now occur through personal prayer and chant. The Sophists had, by Plato's time, gone beyond the simple study of speaking and reading to the art of rhetoric which was then employed in the for-and-against argument of dialectic. Such freedom in dialectic was not always to be enjoyed in the Middle Ages.

Aristotle's treatment of education is to be found in *Nicomachean Ethics* (Aristotle, 1934, 1952g) and *Politics* (Aristotle, 1944, 1952o) and has been much discussed. Classic treatments of it have been made by Jowett (1913) and Davidson (1900) and Aristotle's work still remains an inspiration for ongoing commentaries on a range of questions (Curren, 2000; Kirstjansson, 2007). Essentially, for Aristotle, political systems are to be predicated on happiness with virtue, virtue being the final end of human nature. As a consequence corrective education for people and *Polis* is itself to be predicated on nature *Politics* 1337a (Aristotle, 1944; 1952o, p. 542) which manifests itself through rational *nous* or intellect, rational practical reason, and an irrational component of the emotions and appetites. Aristotle's education system mirrors this three-tier soul and provides training for development of body, habituation of appetites and emotions, and education through reason *Politics* VIII 1332b – 1332b10, 1337b1– 1338b20 (Aristotle, 1944; 1952o, pp. 537, 542 - 544). It is education for harmony.

Like Magevney, Graves (1915, pp. 4 - 21) perceives the origins of the monastery curriculum in Plato and Aristotle and fixes its Christianisation with Cassiodorus (AD

485 - 585), who popularised the phrase the seven liberal arts to describe the combined subjects of the Trivium and Quadrivium by linking that phrase name with the seven pillars of wisdom mentioned in *Proverbs* 10:1 (Holy Bible). Cassiodorus discusses the liberal arts in Book II of his *Institutions of Divine and Secular Learning* (Cassiodorus, 2004) and for him the liberal arts are helpful for understanding God through study of the holy scriptures (L. T. Jones, 1945, p. 433 - 436; Ueberweg, 1889, p. 355). Ableson (1906, p. 7) claims that the seven liberal arts were established as a curriculum in the fourth century.

Such study kept syllogistic reasoning alive (ibid.) all be it the captive of the mysteries of faith. As Chapter 3 of this enquiry revealed, the *Categories* (Aristotle, 1938a, 1952a) is fundamental to ontology, while through their discourse on method, the *Prior Analytics* (Aristotle, 1938c, 1952q) and the *Posterior Analytics* (Aristotle, 1952p, 1960a) contain big questions for epistemology. *Timaeus* (Plato, 1925h, 1952w) reaches in depth to questions of cosmology, theology understood as metaphysics, and teleology.

Graves (1915, pp. 9 - 12), as does Kardong (1996, passim), discusses the nature of the rules for conduct of monasteries Benedict prescribed in his now-called *Regula Benedicti* (St. Benedict, 1875, 1949) and subsequently links the establishment of monastery schools first, to the need to read, and secondly, to the need to write and maintain emerging monastery libraries. Graves identifies an essential difference in intent between the Greco-Roman and developing Christian systems: the aims of education were now to inculcate Christian Benedictine ideals of obedience, chastity, and poverty necessary to the business of the Church—something of a weakening, if not a jettisoning, of fundamental pagan educational ideals of allegiance to the state, care of family, and economic provision for the future, an oversimplification perhaps but a nice difference.

Magvney discusses Benedict first rekindling learning at Monte Cassino in AD 529 (1900, p. 7). Like Koph (2000a, pp. 161 - 179), he also comments on the spread of Benedictine monastery life far and wide and the role it played in the next two centuries in civilising the now converting descendants of the barbarians. Perhaps such challenging work helps explain a need for that strong delicious liquor.

Cubberley (2004, pp. 66 - 71) raises a very probable likelihood that schooling occurred in monasteries before Benedict. Graves (1915, pp. 9 - 12) suggests that such schools did exist a century before Benedict and in charting their development states that out of sheer necessity Benedictine monastery schools admitted so-called external students in order to obtain and prepare educated staff for needed secular occupations. External students were taught in classes held in buildings outside the cloisters and it is possible that clergymen, laymen and nobles attended these schools to learn to read and write (Koph, 2000, p. 151). These schools varied in quality (ibid., pp. 156 – 157) due to a variety of influences associated with the professional reputations of the masters, cloister management, safety, and food security. In this way, through admission of external students, public free education held on. Students from these external schools left to take up work at the age of fourteen while the so-called interns could not become monks until the age of eighteen. It is not difficult to imagine the very real practical provisioning needs of these early educational organisations which existed to nurture both body and soul. Later, under Charlemagne (AD 742 – 814), so-called externs could, if they chose, enter the monastery proper.

Cubberley (Cubberley, 2004, pp. 104 - 109) further explains that as these monastery schools developed, reading was for understanding of the bible, writing for transcription and dictation, and arithmetic for calculation of church festivals and warehousing purposes. Grammar included study of some literature, rhetoric centred on mastery of skills for letter writing and drafting of legal documents. Astronomy was largely confined to study of the courses of the planets and calculation of the seasons, geometry was confined to geometrical concepts and some geography, and music was largely confined to sacred composition and litany. Gregorian chant was soon to emerge. Dialectic, still not in the greatest of favour in respect of discovery of truth about the scriptures, was never far removed from the use of the syllogism in reasoning.

Beginning with Charlemagne, Science understood as syllogistic demonstration began to consolidate its importance through its role in dialectic in a very limited form in the Trivium and more so in the Quadrivium (W. Turner, 1903/2012, p. 243). The Trivium was on its way to becoming the preparatory bachelor study for the higher degree work of the Quadrivium.

During the ninth and tenth centuries, following Charlemagne, cathedral and monastery schools increasingly complemented the palace schools (*ibid.*, pp. 242 – 243), and under the Carolingians metaphysics, psychology and philosophy were to become part of the curriculum (*ibid.*, p. 241). It is through its involvement in these new subjects, and the use increasingly made of it to defend orthodox faith positions, that Science, understood as syllogistic demonstration, gradually combined with dialectic to established anew its utility and find a temporary abode.

The two-tier curriculum structure containing syllabi arranged, as earlier explained, into seven subjects divided into a trivial three and a more complex four was to remain the basic curriculum design template until the twelfth century when the universities began to emerge and when the philosophies, natural, moral and metaphysical, and later theology, law, and medicine gradually began to blossom (Cubberley, 2004, p. 116). Law came to be of interest from AD 1167 onwards through the efforts of the Lombardy League to support the Pope in his differences with the German King (*ibid.* 129). Medicine became of renewed interest when Robert, Duke of Normandy, returning from the First Crusade in AD 1099, was cured of a wound at Salerno. Greek medical texts attributed to Hippocrates (BC 460 – 370) and Galen (AD 130 – 200), and Arab medical writing by Avicenna (AD 980 – 1037), had been preserved and studied there (*ibid.*, p. 131).

During the twelfth and thirteenth centuries rhetoric became less concerned with declamation and panegyric in favour of the Church, and works on rhetoric by Cicero (BC c. 106 – 44) and Quintilian (AD c. 35 – c. 100) began to lose some of their influence (Graves, 1915, p. 20). Graves, who does not directly state that the waning of declamation and panegyric might have contributed to the progress of Science, explains that during the twelfth and thirteenth centuries, Science, that is, syllogistic reasoning, was employed more widely as new subjects and domains of enquiry began to develop (Graves, 1915, pp. 17 - 21). And progress it could, partly because of the influence of Arab learning and partly because of the stability, learning and food security provided by the monastery system it would finally help erode.

I now enquire into mediaeval syllabus content and teaching method which served the two-tier seven-subject framework under discussion. I search for further insights that curriculum content and teaching method might provide about nuance of the terms

Science and Ethics, reason's rehabilitation, and Science's renewed utility. Leading



Source: (Burgkmair) (artist). *The Emperor Maximilian Studying the Science of Music*. (Possible sixteenth century). (wood engraving). London: National Portrait Gallery

maxims of teaching method in early mediaeval schools are known (Cubberley, 2004, pp. 102 - 109; Graves, 1915, pp. 12 - 23; Philobibulous, 1860, pp. 131 - 140). Instruction proceeded largely by dictation, rote, drill, and question and answer. In general, in the cloister schools, students first mastered reading and writing through study of the Psalter and then proceeded to profane study of the Trivium and the Quadrivium. Latin, rather than the vernacular, was the language of instruction and, given the rarity of manuscripts, there was much transcription. It appears from the illustration that

women were admitted to the cloister schools.

Manuscripts in use in mediaeval schools are known (Cubberley, 2004, pp. 109 -



Source: (Garcia, 2012). *Mediaeval Scriptorium*. (illuminated parchment). (artist and date unknown).

110): Capella's *Satyricon*, Boethius' commentaries on Aristotle and his *De Musica*, Cassiodorus's *On the Liberal Arts and Sciences*, commentaries by Isidore, Origen and Alcuin on the Trivium, and Maurus' commentaries *On the Instruction of the Clergy* and *De Universo. De Musica*

was used well into the middle of the eighteenth century. Orme (2006, p. 28) names a work by Donatus, who flourished IN THE fourth century AD, which, after successive revisions, went to press following the European discovery of printing in the fifteenth century. The work, named the *Ars Minor*, provides a good example of the method of rote learning of grammar.

How many are the parts of speech? Eight. What are they? Noun, pronoun, verb, adverb, participle, conjunction, proposition, interjection. What is a noun? A part of speech that has a case, signifying a body or a thing that is proper or common. How many features has a noun? Ten. What are they? Quantity, comparison, gender, number, figure, and case. (Donatus quoted in Orme, 2006, p. 28)

Only six of the ten features seem to have been reported. Grant (2001, pp. 26 - 27) names Boethius (AD 470 - 526), Capella (flourished 5th century) and Cassiodorus

(AD 485 – 585) as scholars whose influence lasted until the twelfth century. Quality at the various schools was uneven and students voted with their feet. I have already commented on Cassiodorus and curriculum structure and content on page 370.

The content Boethius (AD 470 - 526) provided is known. Posterity has rewarded him for his perseverance through which he (a) translated Aristotle's *Categories* (Aristotle, 1938a, 1952a) *Prior Analytics* (Aristotle, 1938c, 1952q), *Posterior Analytics* (1952p, 1960a), *On Sophistical Refutations* (Aristotle, 1952l, 1958) and *On Interpretation* (Aristotle, 1938b, 1952j), and Porphyry's *Isagoge* (2009), which itself is an introduction to the *Categories* (b) wrote commentaries on *De Interpretatione*, the *Categories*, *Isagoge*, and Victorinus' translation of the *Isagoge*, and (c) crafted treatises on formal logic and other works (Ueberweg, 1889, p. 354). These writings, together with some or all of Plato's *Timaeus* (Plato, 1263/2012, 1925h, 1952w) available in Latin translation by Calcidius (circa AD 321), Apuleius (circa AD 123 – 180) and Augustine (AD 354 - 430), were standard materials for study in the cloister schools thereafter (Ueberweg, 1889, p. 367).

Isidorus Hispalensis (died AD 636), through his work in the encyclopaedic tradition of Cassiodorus (AD 485 – 585) and Boethius (AD 470 - 526), provides another insightful example of curriculum content in his discussion of the seven arts in *The Etymologies of Isidore of Seville*, (Isidore of Seville, 2010, pp. 39 – 108). The so-called seven arts of the Satyricon were now considered the “seven pillars of wisdom”, or the seven steps by which one may rise to perfect science” (Ueberweg, 1889).

Isidore extended his school's curriculum to include rhetoric and dialectic in a new combination named logic, a small but telling development in the rehabilitation of reason under the authority of the time. The encyclopaedic tradition continued in the voluminous work of the Venerable Bede (AD 673 - 735) and the seven liberal arts maintained their status as standard fare in the cloister schools founded by Alcuin (AD 736 – 804) at the behest of Charlemagne (AD 742 - 814).

Graves gives an example of the catechetical nature of the question and answer method still employed in the cathedral schools of Alcuin's day. Under a catechetical

method, students were “caused to hear” (Graves, 1909, p. 279) Christian truths before proceeding to the further benefits of education.

Pippin: What produces speech? Alcuin: The tongue
Pippin: What is the tongue? Alcuin: The whip of the air.
Pippin: What is the air? Alcuin: The guardian of life.
Pippin: What is life? Alcuin: The joy of the good, the sorrow of the evil, the expectation of death. (Graves, 1909, p. 29)

And again:

Pippin: What is rain? Alcuin: The reservoir of the earth, the mother of fruits?
Pippin: What is frost? Alcuin: A persecutor of plants, a destroyer of leaves, a fetter of the earth, a fountain of water.
Pippin: What is snow? Alcuin: Dry water. (Graves, 1909, p. 29)

The general construction of this rote learning method not only illustrates the benign presence of an interest in Science as the observation of beings, and the eliciting of relationships amongst them, but also the manner in which so-called correct answers are written in the metaphor of the scriptures. Graves subsequently suggests that Alcuin, by developing a palace school at Charlemagne’s request, established conditions for a return of discursive syllogism. He postulates that the more sophisticated courtly manners required at the palace schools altered curriculum content and teaching methods in a manner erosive of dogmatic correctness, but provides no examples.

Alcuin’s most famous student Rabanus Maurus (AD 776 – 856) enriched the liberal arts curriculum by adding literature to the study of grammar including reading of classical poets, by extending the study of arithmetic beyond the business of church festivals, and by “ascribing phenomena to natural laws rather than to some mysterious cause” (Graves, 1915, p. 34). The content of the seven liberal arts and aspects of teaching method used in Maurus’s time have been reconstructed by Cubberley (2004, pp. 102 - 109) from Maurus’ own description of it in *De Institutione Clericorum* (Rabani Mauri, 1900/2009) unavailable in English.

Maurus had invited natural philosophy into the cloisters but it was to be a long time before syllogistic reasoning, free from faith authority, might examine nature on its own terms, of which more later. Eriugena (AD c 808 – 877), who succeeded Alcuin as head of the school at Fulda, appears to have been as much a philosopher as a

schoolmaster. By Eriugena's time, teaching method for all the subjects of the seven liberal arts consisted of an exposition, by the master, of a relevant text. As the curriculum was extended, metaphysics and psychology at first, and then philosophy, were to be admitted into the dialectic and before long the system of learning was to amount to a kind of philosophical theology (Graves, 1915, p. 57). In this milieu Eriugena thus, *inter alia*, served the establishment of the Carolingian schools as a liberal arts master in the tradition of the *Satyricon*. As further discussed on pages 388 and 398, Eriugena substantially advanced the utility of Science for the work of the schools, but he was ahead of his time, and some of his work was subsequently condemned.

Makdesi (1974), in a discussion about the contribution Islamic culture made to the west, also provides insights into teaching method, and reason's advancement, through dialectic, in mediaeval scholarship. Makdesi explains that dialectic was an art of rational discussion in which a questioner and respondent reason with each other. So understood dialectic is different from the eristic of *On Sophistical Refutations* 171b – 172b5 (Aristotle, 1952l, pp. 236 - 237; 1958) which involves getting the better of an argument by any means. Dialectic is aimed at discovering fallacies and has other benefits such as enabling appreciation of the strengths and weaknesses of the many sides of an argument, and in establishing fundamentals of Science *Topics* 101a – 101b5 (Aristotle, 1952r, pp. 143 - 144; 1960b).

Dialectic is characterised by its social nature, it is a dialogue; by its honesty, the respondent must answer what they really think; by its continuity of argument, the respondent must answer and not plead ignorance; and by its disrespect for authority, the respondent is not allowed to answer on the basis of recognized authority but must answer in terms of the here and now of the discussion (Walton, 2007, pp. 51 - 52, 61).

Both syllogistic demonstration and dialectic were found increasingly useful during the high middle ages—accepted indicatively as that period from AD 1000 to 1300—where, in combination, they provided an intellectual method which subsequently informed a scholastic logic of obligations and consequences as an intellectual pursuit played out according to rules (Hamblin, 1970, pp. 260 - 264; Stump, 1989, pp. pp. 1 - 2). Under obligation-logic of the thirteenth and fourteenth centuries, a respondent

agrees to an obligation to uphold the negative or affirmative of a statement. There follows an exchange of sentences between opponent and respondent in which the respondent affirms or denies or expresses doubt. The exchange ends when the respondent fails their obligation if he or she grants a statement inconsistent with rules of the game, or the statement being upheld. Hamblin gives full details of the rules of obligation logic in Chapter 8 (Hamblin, 1970, pp. 253 - 282).

Before this time, syllogism and dialectic were to be combined with disputation. Abelard (AD 1078 – 1142) taught dialectic and two of the schools in which he taught were subsequently combined to form the University of Paris circa 1160 - 70. Abelard discusses dialectics in his *Dialectica* and *Theologia Christiana*, both available in Latin. Ueberweg (1889, p. 391) provides helpful insights: Abelard held Aristotle to be the highest authority in dialectic, and dialectic must distinguish between the true and the false. Logical distinctions are arrived at through discriminating between different applications of words. Physics is prior to logic. That is, objects precede words. Words were invented to express thoughts but thoughts must conform to things. Human speech is not arbitrary because it is always tied to the objects it expresses. Definition is the meaning of the word explained in other words and universals do not have an objective existence before the individual. The species arise from the genus by the addition of a form to the genus, but the genus is not prior to the species in time or existence (Ueberweg, 1889, p. 398).

Abelard's teaching method is not easy to reconstruct (Clanchy, 2000, pp. 85 - 90; Marenbon, 2006, pp. 36 - 53). Although Abelard employed rhetoric and used jocular exchange effectively, his dialectic needed to be robust in the face of the criticism his approach drew from both his superiors and young adversaries. He gave lectures, wrote them up as glosses both hastily and more formally, and transacted yes-and-no disputation, based on his collection of contradictory statements found in the work of church doctors. His method involves syllogistic demonstration in dialectic and yes-and-no disputation, those same ingredients which through refinement in time became central to scholastic method in the thirteenth and fourteenth centuries (Brower & Guilfooy, 2004, p. 9; Makdisi, 1974, p. 642). Compayre claims that through his method, Abelard brought "dialectic to theology and reason to authority" (Compayre, 1893, p. 19), a position compatible with the views of Medley (2004, pp. 77, 82) and

Adams (2007, p. 254). Abelard is now known for his dialectical theology but in his time theology as an academic discipline was in its infancy. Some years were to pass before Aquinas (AD 1225 - 1247) would unite theology and philosophy as compatible sciences under Christianity, and fewer years then again before Duns Scotus (AD 1274 - 1308) and Ockham (AD 1289 - 1349) would occasion philosophy's own estrangement from theology.

While Abelard's individual method might be difficult to pin down, the general method employed at his university, the University of Paris, is better known. For example, according to Williams, the liberal arts faculties of the University of Paris:

had become something like what we would think of as a philosophy department. The arts masters no longer thought of themselves chiefly as providing a preliminary grounding in the liberal arts for budding theologians, but as practitioners of a critical, philosophical discipline with its own independent dignity—a dignity that they were not shy of asserting both on their own behalf and on behalf of the discipline of philosophy itself. (T. Williams, 2009a, p. 19)

Pedagogical process was rigorous and exhaustive:

The topic would be announced in advance so that everyone could prepare an arsenal of clever arguments. When the faculty and students had gathered, the professor would offer a brief introduction and state his thesis. All morning long an appointed graduate student would take objections from the audience and defend the professor's thesis against those objections. (And if the graduate student began to flounder, the professor was allowed to help him out). A secretary would take shorthand notes. The next day the group would reassemble. This time it would be the professor's job to summarise the arguments on both sides and give his own response to the question at issue. The whole thing would be written up, either in a rough-and-tumble version deriving from the secretary's notes or in a more carefully crafted and edited version prepared by the professor himself. Records of such academic exercises have come down to us under the title 'disputed questions' (T. Williams, 2009a, p. 1).

The dialectic method used is also known. Within the pedagogical process of scholastic disputation of the kind outlined above, application of Aristotelian logic and metaphysics proceeded in the manner outlined in the quote which next follows.

The method consisted, first, in connecting the doctrines to be expounded, with a commentary on some work chosen for the purpose. The contents of this work were divided and subdivided until the separate propositions, of which it was composed, were reached. Then these were interpreted, questions were raised with reference to them, and (for the most part in strictly syllogistic form) the grounds for affirming and for denying them were presented. Finally the decision was announced, and in case this was affirmative, the grounds for the negative were confuted, or, in the opposite case, the grounds for the affirmative. The names of the persons holding the various opinions which were discussed were, as a rule, not given. No opinions were defended during

this period, which were altogether original and were not supported by some Authority.
(Ueberweg, 1889, p. 432)

This morphing of the liberal arts faculties from centres of clerical training to centres of exploration and creativity bespeaks philosophy's ongoing estrangement from theology.

To summarise, incremental change in syllabus structure and content, and teaching method, during the time from Augustine (AD 345 – 430) to Abelard (AD 1078 – 1142), allows insights into the nature of relationships amongst Science, Ethics and *Polis*. During this period education occurs in palace, cathedral and monastery schools but particularly through the latter. In effect, the Christian church is a kind of so-called state provider of education and it offered instruction on how to be ethical in a Christian way. Ethics thus remains faith Ethics and the *Polis* remains a city of God. Science changed from that free to roam Aristotelian syllogism for which the Church had no need, to Aristotelian syllogism as an indispensable part of reason understood as syllogistic demonstration in dialectic and yes-and-no-disputation, all be it under tight church scrutiny. Abelard successfully applied additional elements of rhetoric and the jocular to facilitate reason's effectiveness.

So much for what can be gleaned about changing relationships amongst Science, Ethics and *Polis* through enquiry into curriculum, syllabus and teaching method in mediaeval times—I now further enquire into such changing relationships by discussing the manner in which notable scholars of the times used Science and Ethics to help defend various views they held.

SPECIFIC WORK OF THE CHAPTER CONTINUES

Gleaning Understandings of the Key Terms Science, Ethics and *Polis* from their Presence in, and Efficacy to, Works by Scholarly Writers

A discursive approach, as opposed to unquestioning acceptance of rote, can be found emerging during the fifth, sixth, and seventh centuries. For example, Claudianus Mamertus (died AD 477) argued a position opposite to that in vogue (Ueberweg, 1889, pp. 353 - 354). The accepted position was that because all beings except God fell within the ten Aristotelian categories, and were thus material, so too the human soul was material. Mamertus argued that while the human soul possesses quality, that Table 15 category which determines or qualifies the nature of an object, it may not be predicated on quantity or magnitude, except in respect of virtue and intelligence.

Table 15 is located on page 207. So constituted, the human soul moves in time but not in space and in this way is differentiated from both God and the material beings of the categories. The work returns a touch of reason, understood as Science in dialectic, to theological speculation.

In a quieter presence, reason informed the position taken by Ratramnus (died circa AD 868), in his contest with Paschasius Radbertus, Abbot of Corbie (died circa AD 860), who, in an earlier work, *De Corpore et Sanguine Domini* (Paschasius Radbertus & Bedae Paulus, 1969), had taken the position that, in the Eucharist, the bread and wine actually turned to flesh and blood. Ratramnus, in his own *De Corpore et Sanguine Domini* (Ratramnus, 1974) held against Radbertus that it did not. Ratramnus' argument was in part based on an acknowledgement of the absence of sensible physical changes in the bread and wine (Mellone, 1918, p. 241).

Another controversy involved predestination. Predestination is understood as prescience or foreknowledge by God of His will and acts, combined with provenience, or God acting out his will and revealing his foreknowledge through all of nature (Martin, 1918, p. 226). In this controversy, the Church employed John Scotus Eriugena (circa AD c. 808 - 877) to combat the unorthodox position put by Gottschalk (Hampden, 1848, p. 35; Mellone, 1918, p. 241). Gottschalk had taken a stand in favour of foreordination to salvation and foreordination to damnation (Schaff, 1913, pp. 525 - 300) and Eriugena's defence of the church position was, unlike the scriptural proofs against Gottschalk offered by Rabanus Maurus (died AD 840) and Hincemar (died AD 882), a reasoned theological defence based on the proposition that no predestination could be evil because to accept that evil is prescient is to accept a duality in the divine nature (Martin, 1918, p. 232; Ueberweg, 1889, p. 364 - 65). Eriugena also defended Ratramnus's reasoned position on the Eucharist (Mellone, 1918, p. 242; Ueberweg, 1889, p. 365). Eriugena could not but urge against duality in the Divine because a unified single God is at the centre of his *De Divisione Naturae*, also known as *Periphyseon* (Eriugena, 1987), in which he sets out his system of emanation through which all physical real existing beings come from, and return to God. Eriugena proved to be most influential. He marks an important milestone in reason's liberation from the faith authority of the times and beginning in the next paragraph and continuing on until page 389 I articulate this

claim before returning to the main task of explicating key terms meanings and nuance from the works of scholarly writers.

In establishing his system Eriugena took a position against the so-called dialecticians (Ueberweg, 1889, p. 365), those who argued along Aristotelian category lines that substance alone is the primary existence in which the accidents, the remaining categories, inhere, and thereby exist in a secondary sense. As explained throughout Chapter 2, in the Aristotelian system, only individuals alone first exist independently, universals, species and genus, exist in a secondary and objective sense but in the mind. To argue against the dialecticians, Eriugena adopted a position akin to that of the Platonic ideas wherein the universals in perfect real template form exist before individuals, that is, he adopted the dictum of universals *ante rem* or universals before-the-thing (Ueberweg, 1889, p. 358). This “layman and philosopher by profession” (Hampden, 1848, p.36) accepted “that grammar and rhetoric, as branches of dialectic, or aids to it, relate only to words (*voces*), not things, and that they are not therefore properly sciences (*De Divis. Nat.*, V.4)” (Ueberweg, 1889, p. 364). Still, Eriugena “coordinates dialectic itself (*De Div. Nat.*, III. 30) with Ethics, physics, and theology, defining it as the doctrine of the methodological form of knowledge” (ibid., p. 364).

Unfortunately, Eriugena has not expanded on the details which inform this methodology, but his discussion of the Aristotelian categories in Book 1 of the *Periphyseon* (Eriugena, 1987) reveals that he employs “the four forms called by the Greeks division, definition, demonstration, and analysis” (Ueberweg, 1889), his intent being “the reduction of the derivative and composite to the simple, universal and fundamental” (ibid., p. 364). Armed with this arsenal, Eriugena was sought after for his erudition in reasoned theology and for his political skills. He became a favoured member of the French court (Moran, 2004, pp. 35 - 36) and, as previously discussed on page 364, played an important role in the schools established under the patronage of Charlemagne (J. O'Meara, 2004, p. 198). Hampden (1848, p. 36) and Moran 2006 (2006, p. 269) cannot be certain that Eriugena went beyond being a cleric to become a monk.

Irrespective of the source of a Christian Neoplatonic synthesis to be found in his *De Divisione Naturae*, or *Periphyseon*, and even in the face of new scholarship about

revisions of his work by hand or hands other than his (Jeauneau & Dutton, 1996), Eriugena is recognized for his firm belief in the independent existence of actual real objects created by God, outside of the human mind. His belief in such objects is confirmed in Book 1 of *De Divisione Naturae* wherein nature, for Eriugena all existence and non-existence, is divided into things-which-are and things-which-are-not. Non-existing “consists” of (1) that which is above the reach of the senses, (2) higher forms of emanation not known to lower forms of emanation, (3) that which is in potential existence, for example, the tree in the seed, (4) material existence, the matter in form and matter, in Eriugena’s case Christ’s substance and, (5) sin understood as the loss of the divine image (Mooney, 2009, p. 45; Ueberweg, 1889, p. 361).

The totality of nature, those things which-are and which-are-not, is divided into four sections:

(1) Nature which creates and is not created: such nature is *God* who is the first and only cause.

(2) Nature which creates and is created: such nature consists of the *primordial causes*. These primordial causes are the types of things formed by God before creation and in kind they are not unlike the Platonic ideas. They are God’s active efficient causes. They are in God, are made, and emanate from God, and the phenomena of nature outlined in (3) below are directly caused by them. Eriugena gives examples of the primordial causes in Book 1 of his *De Divisione Naturae*: goodness, essence, life, wisdom, truth, intellect, reason, and virtue (Eriugena, 1976; Yates, 1960, pp. 7 - 9). Yates discusses Eriugena’s incomplete definition of the primordial causes, those “divine names, ... those *principia exempla* ... goodness, truth, virtue, wisdom ‘and others of the like’” (1960, p. 7). They are also named “what the Greeks call ideas” (ibid., p. 7) and “as a unity, they constitute the *Logos*, the creative Word of God” (ibid., p. 8).

(3) Nature which is created and does not create: such nature consists of *created temporal effects*. This division consists of things that are subject to conditions of time and space and to change. In Eriugena’s system they emanate from God, and through his primordial causes they are separated into effects understood as concrete, existing

things outside of the human mind. This reality is rigorous in Eriugena and in the theology Eriugena's earthly world of real objects is said to be a hypostasized world. The phenomena are ideas intertwined with matter. In spite of the active ideas, these primordial causes, acting as efficient causes, Eriugena's hypostasized existing real world is as independent in time and space as is the world of Aristotle's independently existing things. God alone is real, but God is the substance of all things. Thus for Eriugena "the whole realm of created being has no independent reality: it exists, because it exists in God. Creation and revelation are one" (Mellone, 1918, p. 242)—a neat conclusion and a point can be made that Greek gods in nature have been replaced by God in nature. Mooney makes a similar claim (2009, p. 196). But while existing material beings consist of God's substance as the first stuff of the world, rather than Aristotelian potential being that stuff, Aristotle is still present in Eriugena's system, of which more later.

(4) Nature which is neither created nor creates: such nature is non-being. This category is seen as the return of all things to God. Here God, the only efficient cause, is also in a sense the final cause.

Divisions (1) and (4) refer to God. Divisions (2) and (3) are cause and real effects and Eriugena's explanation is theological, psychological explanation being less important in Eriugena (W. Turner, 1903/2012, p. 254). "The four stages form a process from God to God, which through our finiteness we think of in time; but in itself it is eternal and beyond time itself" (Mellone, 1918, p. 242). Eriugena makes use of both positive and negative reasoning. Positive reasoning proceeds towards establishing what God is. Negative reasoning, referred to as reasoning by apophasis (McIntosh, 1998, p. 124), proceeds towards understanding what God is, by establishing what God is not.

In the Greek and/or Byzantine scholarship, that is, in the non-Latin scholarship from the time of Christ onwards, the apophatic method can be found in two streams of thought. One stream can be called Neoplatonism and it flowed in a direct line from Plotinus (AD c. 204 – 270), who lived in both the East and West, through Proclus (AD 411 - 485) to Pseudo Dionysius, probably extant in the late fifth century, probably Syrian. The other stream may be called Byzantine (Meyendorff, 1979, pp. 11, 12) it being most visible in the work of the Cappadocians Basil (died AD 379),

Gregory of Nyssa (AD 331 - 394), Peter (AD 340 - 391), and Gregory of Nazianzen (born AD c. 336). The three brothers Basil, Gregory of Nyssa, and Peter, were part of a monastic family in Asia Minor. Gregory of Nazianzen was a close friend who also retired to a monastery. Armstrong (1979) contends that the two streams had very little influence on one another. Generally, both streams are referred to as mystical or religious in nature (E. Moore, 2007, n. p.). In both systems the apophatic method employs reason in affirmation of knowledge. In both systems, the real world, God's created real world in the one, and the Neoplatonic hypostasized world in the other, exist independently and are respectively central to functioning of reason.

Eriugena's apophasis comes predominantly from the Neoplatonic line not the Byzantine (Liebregts, 2004, p. 219) and his general argument is that all of the Aristotelian categories ranging from quantity through to affection as revealed in Table 15 on page 207, are applicable to sensual phenomena, that is to real individuals, and to intellectual phenomena within the liberal arts, but they are not applicable to God. God's hypostasised world exists by virtue of God's pleroma or unfolding. Yates claims that Eriugena treated the categories as modes of abstracting from the sensual real world phenomena, "the reality behind them" (Yates, 1960, p. 6) and employs this explanation to explain Ueberweg's claim that Eriugena's mistake was to hypostatize the *Tabula Logica* (A. H. Armstrong, 1967, p. 531; J. O'Meara, 2004, p. 219; Ueberweg, 1889, p. 360; Yates, 1960, pp. 2 - 13), that is, to predicate God's emanation on the basis that "the degrees of abstraction correspond to the degrees of real existence" (Yates, 1960, p. 6). Tracing back from the sensed real world objects through the levels of hypostatisation leads to the reality of a Christian God, not the Greek condition of substance as potential.

Newman and Scott (1917, p. 149) trace hypostatisation ideas to their origins in the Cult of Mithra (Cumont, 1903a, p. 104) whose first G(g)od or Aeon, or Time, was itself ineffable and inconceivable. Gnostics initially knew only a single aeon. But under Valentinus this unity is able to manifest itself as a plurality (Mead, 1900, pp. 307 - 09). Later Gnostics were thus able to allow aeons of time to descend first through successive steps to the materiality of mankind's world by virtue of male and female procreating pairs, and subsequently by projection or emanation from the one God. In this manner, the Divine nature unfolds itself in its fullness or pleroma and

higher reality, which higher reality is separated from the sensed phenomena of the world by a great gulf.

In the version of Valentinus, this gulf was bridged by the actions of the last higher reality Achamoth or Lower Wisdom who attempted to produce further aeons without conjugating with a male partner (Kemp, 2004, p. 46). As a result “[Achamoth] brought forth a ‘formless and undigested substance’ (the Demiurge) which evolved into the present order of things with its mixture of good and evil, and with man whose spirit is enslaved by matter” (A. H. Newman & Scott, 1917, p. 149, my square brackets). The strife caused by Achamoth’s action was finally calmed when the now Christian God, noting the distress felt by Achamoth, and the humble and sincere pleas of the other Aeons, allowed *Nous* and Achamoth to project Christ and the Holy Ghost for the purpose of destroying the Demiurge and restoring form to mankind by liberating light and life from the debilitating substance in which it had been imprisoned (Kemp, 2004, p. 46).

Of the doctrine of the Aeons, Newman and Scott note that from the very beginning Aeonic theory began in nature through its recognition of “Infinite Time as the ultimate fact in nature” (A. H. Newman & Scott, 1917, p. 149) and that it failed in its attempt “to open a way out of the bondage of the natural world [because] it was itself grounded in ideas derived from nature worship” (ibid., p. 149, my square brackets). Bearing in mind this insight Newman and Scott have provided, and in the light of Yates’ view that Eriugena employed the Aristotelian categories as the realities behind the sensual real world pleroma, Eriugena’s ontology might be seen as circular. It is hard not to have threads of Presocratic reincarnation-cycle thinking intrude in attempts at understanding Eriugena’s journey along the categories ladder to God, and back again by emanation, to those objects.

Mellone, in the quote next following, comments on conflict in Eriugena’s being able to say what God is not, by apophasis, and what God is, through nature.

No predicate applicable to finite being is applicable to God; He is above and beyond all qualities that we experience in finite being. Hence ultimately we can say what God is not rather than what He is. On the other hand the whole realm of created nature is in its measure a ‘theophany’ whereby we may attain to a knowledge of God, perceiving his being through the being of created things, His wisdom through their order and harmony, His life through their activity and movement. (Mellone, 1918, p. 242)

Even in the face of Mellone's no-predication comment, Eriugena is able to understand God by His being the "Father, by his wisdom, the Son, and by his life the Holy Ghost" (Ueberweg, 1889, p. 361). In defending Eriugena's use of negative and positive theology, Ueberweg explains that Eriugena posits that God's creative and uncreated nature is superior to Aristotle's ten categories, and that he, Eriugena, acknowledges the limitations of language terms, all of which have their opposites or negatives in meaning, there being no opposite to God.

In particular, Eriugena goes beyond Augustine and identifies true philosophy and true religion as the same thing (Alvarez, 2000, p. 527; Moran, 2004, pp. 83, 239; W. Turner, 1903/2012, p. 264). He also asserts that reason is central for human access to God (Moran, 2004, p. 90). In particular, Eriugena argues that true religion is not merely ecclesiastical authority, and that when reason is at odds with authorized but conflicting interpretations of the scriptures, preference might, within the boundary of faith in revealed truth, be given to reason (Eriugena, 1976, I. 71; Ueberweg, 1889, p. 360). Reason then is useful in deciding, when reading the Church Fathers, which teachings are more in accordance with the scriptures. Turner (1903a, p. 248) finds in Eriugena *qua* first Schoolman an expression of Scholasticism's characteristic trait: the unification of reason and revelation. Moran explains that in Eriugena the rational domain of human nature is free. Moreover, especially in respect of the rational domain of human nature, he notes Eriugena's claim that:

the highest dignity of human nature is that it uniquely mirrors transcendent divine nature. Only of human nature can it be said that it is made in the image and likeness of God. Not even the angels are accorded that honor, so in a sense man is greater than the angels. *Periphyseon* (IV.758b). (Moran, 2006, n.p.)

In addition, human rationality can, by virtue of its being both of the animal and intelligible worlds, mediate between them:

Eriugena, however, recognizes the role of human nature in mediating between the divine and created things. Human nature is the 'workshop of all things' (*officina omnium*, II.530d; IV.755b). Human nature is a *medium* between animal and angel, a *medietas* between the earthly and the intelligible worlds. Human nature contains not only elements from the corporeal world but also belongs to the intelligible world. (Moran, 2006, n.p.)

Human nature in Eriugena also “resembles the divine nature which too is ‘both beyond all things and in all things’ *Periphyseon* (IV.759a - b)” (Moran, 2006, n. p.). Moran offers the following insight:

Eriugena's cosmological account has been criticized for collapsing the differences between God and creation, leading to a heresy later labelled as pantheism. There is no doubt that Eriugena's theological intentions are orthodox, but he is a bold, speculative thinker, who believes that philosophy uncovers the true meaning of faith. (Moran, 2006, n. p.).

In Eriugena's dialectical and highly rational approach to theology, rationality need only be helped by “the opinions of the holy fathers where ‘the gravest necessity requires that human reason be supported for the sake of those who, being untrained in it, are more amenable to authority than reason’ *Periphyseon* IV.781c - d” (Moran, 2006, n.p.). William Turner, like Moran, also notes the enigmatic nature of Eriugena's reasoned dialectic and argues that although Eriugena's dialectic was rational his Neoplatonism is supreme and that he is Platonic or mystical before rational (W. Turner, 1903/2012, p. 248). Eriugena, according to Turner, rather theosophied philosophy than rationalized theology (*ibid.*, p. 249) but this fine distinction will not be pursued further—it is clear though that it is not a simple matter to separate his reason from his faith.

Eriugena's knowledge cycle proceeds from God as knowledge, to primordial causes, to internal sense knowledge of concrete things, and then to knowledge of the things themselves, and then back again over the same route (W. Turner, 1903/2012, p. 255). The cognitive faculty is sensible, wherein it is referred to as a faculty which employs the sense organs grouped as one, and supersensible, wherein it is a faculty which mirrors the Trinity. There is intellect, the mind contemplating God; reason, the mind contemplating the primordial causes; and internal sense, the mind attaining knowledge of the real existing world. All knowledge is said to begin in God. Intellect, which includes will, is the soul's essence, reason is its power, and sense is its actuality. Turner suggests of Eriugena's epistemology that his “psychological doctrines do not occupy an important place in his [Eriugena's] thought” (W. Turner, 1903/2012, p. 254, my square brackets). Turner is a Jesuit.

Nonetheless Eriugena's position admits an understanding that human reason can occasion reliable knowledge about the world, all be it God's hypostasized world, and

through that knowledge, further understanding about God. A more formal scientific and logical dialectical method is being rehabilitated and strengthened and other traces of Aristotle may remain in Eriugena's work as well. Ueberweg (1889, p. 363) finds traces of Aristotle's ontological division of beings—unmoved mover, moved and moving, moved and not moving—in the first three of Eriugena's four divisions of nature.

Platonic ideas too are said to be present. Plato, through Pseudo-Dionysius, furnishes the fourth division of all things returning to God (ibid., p. 363). On this matter many of Eriugena's sources are known (Moran, 2004, pp. 103 - 122): he drew on Cicero (BC 106 - 43), Gregory of Nyssa (c. AD 330 - 394), Basil (died c. AD 379), Augustine (AD 354 - 430), Martianus Capella (5th century AD), Pseudo-Dionysius (late 5th century), Boethius (AD 470 - 526), and Maximus Confessor (AD c. 580 - 662). *Timaeus* (Plato, 1925h, 1952w) was also known to Irish scholars. As discussed earlier on page 385, Eriugena's exposure to the apophatic method came mainly from the Neoplatonic line and not from the Byzantine. His awakening, and the flowering of his *De Divisione Naturae*, is by his own acknowledgement, a main consequence of his translations of Pseudo Dionysius (AD late 5th early 6th centuries) if not of Maximus Confessor (AD 580 – 662). Thus, traces of an attempt made by Christian theology during the period from the Council of Nicaea (AD 325 – 400) to replace a so-called heretical Neoplatonism of some Gnostics with a more original Platonic teaching (W. Turner, 1903/2012, pp. 218, 222) might be still seen working itself out in Eriugena's work.

In arguing that religion and philosophy are one and the same, and that reason is essential for mankind's access to God, Eriugena is something of an early fish jumping out of the faith authority water.

To summarise, in their reasoned argument about church dogma, scholars such as Mamertus (died AD 477)), Ratramnus (died circa AD 868), and Eriugena (AD c. 808 - 877) played an important role in Science's journey to independence. In their works, reason as syllogistic demonstration is beginning to morph into reason as syllogistic demonstration in dialectic under faith authority. Revealed truth remains revealed truth. Eriugena's Science and faith are one in theology because they both share in the one divine human reason. In the next paragraph, in fulfilment of the intension

expressed earlier on page 381, I resume the task of gleaning key terms meaning and nuance from the works of scholarly writers.

Specific Discussion About Eriugena Now Having Ended Gleaning of Key Terms Meaning and Nuance Resumes

To wit: reason's survival was also aided by the work of the rigorously careful schoolmaster Alcuin (AD 736 – 804) and his work in establishing the palace school. Following Alcuin, the seven liberal arts were consolidated as everyday curriculum fare in the cloister and cathedral schools at Fulda—*De Rerum Naturis* or *On the Nature of Things*, by Hrabanus also called Rabanus Maurus (c. AD 780 – 856); at Aurillac—*De Rationai et Ratione Uti* or *On Rational and to Use Reason*, by Gerbert (AD c. 946 - 1003) who pursued his interest in Science and mathematics, and reason and its uses (Ueberweg, 1889, p. 369); and at Chartres by Fulbert (AD 952 or 962 – 1028) through his administrative capability rather than his written works. Gerbert is of particular interest. He was influenced by Arab scholarship from Spain. Arab scholars, there in possession of much of Aristotle's corpus appear to have focussed, *inter alia*, on its scientific content, of which more later, and there is some evidence of Gerbert's use of experiment in his work, whether such work be branded Science or magic (Thorndike, 1923a, pp. 704 - 705, 697 - 718).

For example, Crombie (1953, p. 11) suggests that Gerbert obtained the astrolabe from the Arabs, that he made a technical improvement to the abacus (*ibid.*, p. 214) by introducing apices or turned horn buttons or disks on which Arabic numbers were written, and crafted a water clock with puppet show figures for the monastery at Madgeberg (*ibid.* p. 185). These water clocks were calibrated each evening by a reading taken from the pole star. By AD 1050, in response to calls from orthodox scholars voicing their concerns that reason in dialectic would dominate the Holy Scriptures, the Church asserted that reason should remain subordinate to the revelations of the scriptures. But reason would not behave as required.

For example, in a contest between the orthodox Lanfranc (c. 1005 AD - 1089) and the dialectician Berengarius (c. AD 999 – 1088), Berengarius, a student at the school of Chartres founded by Fulbert (AD 952 or 962 – 1028), himself a student of Gerbert (AD c. 946 - 1003), further articulated the so-called reasonable doctrine of the Eucharist defended earlier by Ratramnus. In urging against the view that the bread

and wine, while retaining their outward appearance throughout the Eucharist, actually turned to flesh and blood, Berengarius relied on the work of Eriugena. The dispute was resolved in favour of Lanfranc an outcome which checked, for a time, reason's rehabilitation to free syllogism in dialectic and disputation, and resulted in condemnation of Eriugena's *De Eucharistia* by the Synod of Vercelli in 1050. Berengarius' defeat notwithstanding, the extent to which the revealed truth of faith authority had allocated reason an important and enhanced yet very limited serf and villein role can be determined by the existence of a book (*Elucidarium Sive Dialogues Summan Totius Theologiae Complectens*) of uncertain authorship (Marx, 2000, p. 1) in which "the whole substance of the dogmatics of the time is set forth in genuine scholastic manner, in syllogistic form and with a dialectical examination of proofs and counterproofs." (Ueberweg, 1889, p. 371). Yet reason is kept under a strict ask-and-hear-the-desired-answer transaction between master and student which frames the content of the work (Marx, 2000, pp. 26 - 53). In an attempt to impose transubstantiation from bread and wine to flesh and blood, the Church had fought reason with reason and before long, and particularly first through the works of Anselm (AD 1033 – 1109) and Abelard (AD 1079 – 1142), reason was to become indispensable to faith authority.

Anselm (AD 1033 – 1109), the "second St Augustine" and Italian Archbishop of Canterbury, took issue with Roscellinus (c. AD 1050 – 1125). Roscellinus, like Berengarius (AD c. 999 – 1088), had employed nominalism in his logical metaphysical argument in respect of the Trinity (Bishop, 2008, p. 110), that three Gods should be spoken of, not one. Roscellinus, argued that the universal, the unified God, could only be abstracted from the three singulars, the Father, Son, Holy Ghost (Anselm, 2009, pp. 289 - 291). Furthermore, if God were one thing in which three states existed, then the Father and the Holy Ghost should have accompanied the Son into the flesh. Anselm countervailed using the realist logic that the generic unified God was a unified whole of the three (Colish, 1983, pp. 84 - 85; Ueberweg, 1889, p. 372).

Reason consisting of Science as syllogistic dialectic in disputation, was also used by Abelard (AD 1079 – 1142) against the extreme realism (Vanderjegt, 2006, p. 736) of William of Champeaux (c. AD 1070 – 1121), who took the position that the

universals were essentially present in each of the individuals amongst which there was no diversity of essence but rather a variety of accidents. Abelard, of whom more later, countervailed on the reasoned basis that, were it true, each numerically different individual would need to receive mutually incompatible accidents. The confrontation (Clanchy, 2000, pp. 67 - 75) again illustrates the utility of reason for faith authority, as do works by Anselm about redemption and atonement *Cur Deus Homo* (Anselm, 1926a), and God's existence *Monologium* (Anselm, 1926b, 1926c).

Anselm (AD 1033 – 1109) well illustrates the important but subordinate position of reason to faith authority. Relying on extreme realism, Anselm argued that faith is a condition of the emotions and will but that capable humans must work through reason to obtain a comprehensive understanding of faith (Clanchy, 2000, pp. 7, 272; Mellone, 1918, p. 243). Faith, defined as religious truths revealed from the scriptures, plus personal religious experience, plus defined authorized dogma of the Church, precedes reasoned knowledge experience. Anselm's so Greek-reasoned starting point is that:

It is, therefore, established that rational nature was created for this end, viz., to love and choose the highest good supremely, for its own sake and nothing else; for if the highest good were chosen for any other reason, then something else and not itself would be the thing loved. But intelligent nature cannot fulfil this purpose without being holy. Therefore that it might not in vain be made rational, it was made, in order to fulfil this purpose, both rational and holy. (Anselm, 1926a, Book 2, Ch. 1)

Anselm acutely fixed the nature of the relationship between faith and reason as a problem for scholasticism—reason can have free play but it must not contradict the established dogma of the Church. In later periods of scholasticism, philosophy on the side of free reason, and theology on the side of reasoned faith, would form a more equal alliance before separating, sometimes violently, and going different ways.

Anselm's proof of the existence of God in Chapters 1 to 7 of the *Monologium* (Anselm, 1926c) is a realist, logically reasoned ascent from the particular to the universal along the lines of the Platonic ideas. From this imperfect world of existing singulars we are driven to the cause of causes, the perfect *per se* and objectively real God so reached through experience. His argument begins with the Platonic idea of the perfect as that which is caused by no other and from which all other is derived, and proceeds from that *a priori* through a long inductive chain to the proof of God's

existence. Brief quotes from the early stages of the proof are enough to demonstrate the kind of reasoned logic Anselm is applying:

For, everything that is, exists either through something, or through nothing. But nothing exists through nothing. For it is altogether inconceivable that anything should not exist by virtue of something.

Whatever is, then, does not exist except through something. Since this is true, either there is one being, or there are more than one, through which all things that are exist. But if there are more than one, either these are themselves to be referred to some one being, through which they exist, or they exist separately, each through itself, or they exist mutually through one another. (Anselm, 1926c, *Monologium*, Ch. 3)

and

Since, then, it is most patent that the essence of all beings, except the supreme Essence, was created by that supreme Essence, and derives existence from no material, doubtless nothing can be more clear than that this supreme Essence nevertheless produced from nothing, alone and through itself, the world of material things, so numerous a multitude, formed in such beauty, varied in such order, so fitly diversified. (Anselm, 1926c, *Monologium*, Ch. 7)

In the *Proslogium* Anselm (1926c) continues his argument of the existence of God but this time he uses a shorter deductive approach. A short quotation from Gaunilon's refutation of Anselm will suffice both to articulate Anselm's short deductive proof and to illustrate the reasoned logic being employed in the debate.

If one doubts or denies the existence of a being of such a nature that nothing greater than it can be conceived, he receives this answer:

The existence of this being is proved, in the first place, by the fact that he himself, in his doubt or denial regarding this being, already has it in his understanding; for in hearing it spoken of he understands what is spoken of. It is proved, therefore, by the fact that what he understands must exist not only in his understanding, but in reality also.

And the proof of this is as follows.--It is a greater thing to exist both in the understanding and in reality than to be in the understanding alone. And if this being is in the understanding alone, whatever has even in the past existed in reality will be greater than this being. And so that which was greater than all beings will be less than some being, and will not be greater than all: which is a manifest contradiction.

And hence, that which is greater than all, already proved to be in the understanding, must exist not only in the understanding, but also in reality: for otherwise it will not be greater than all other beings. (Gaunilon, 2009, Paragraph 1, n.p.)

The argument goes on and although interesting its details are not central to the point being established, namely, that within the bounds of revelation, and on the eve of the

West's rediscovery of Aristotle's greater corpus, Anselm employed logical reason in the Greek sense outlined in earlier chapters of this enquiry. He employed it to prove the existence of the God from which faith derived its authority.

Abelard (AD1079 – 1142), himself a student of both the extreme nominalist Roscellinus (AD 1050 – 1125), and the extreme realist William of Champeaux (c. AD 1070 – 1121), takes as his starting point the proposition that reason must prepare the way for faith, we reason so that we might believe, such reason being that which brings faith its truth. He reminds his readers that “St. Jerome, also, when he preferred some ecclesiastical doctors to the rest, thus counselled us that they should be read in order to judge among them rather than merely accepting them” (Abelard, 1976, Prologue).

Indeed this first key of wisdom is defined, of course, as assiduous or frequent questioning. Aristotle, the most clear-sighted philosopher of all, advised his students, in his preface 'Ad Aliquid', to embrace this questioning with complete willingness, saying (cited by Boethius, In *Categorias Aristotelis*, ii): "Perhaps it is difficult to clarify things of this type with confidence unless they are dealt with often and in detail. However, it would not be useless to have some doubts concerning individual points." *And indeed, through doubting we come to questioning and through questions we perceive the truth* [italics added]. In consequence of this, Truth herself says (Matthew 7:7), "Ask and it shall be given you; knock and it shall be opened to you." Teaching us this spiritual lesson with Himself as an example, He let Himself be found, at about twelve years of age, sitting and questioning in the midst of the teachers, showing Himself to us in the model of a student with His questioning, before that of a schoolmaster in his pronouncements, although His knowledge of God was full and complete. (Abelard, 1976, Prologue, my square brackets)

In short, doubt paves the way for investigation and investigation is the true believer's duty. Only the canonical scriptures “in which one should have undoubting faith” (Abelard, 1976, Prologue) are exempt, and no one church father is equal to the authority of the Apostles. Some of the questions addressed were quite confronting:

Should human faith be based on reason, or not; is God tripartite, or not; do the Divine Persons mutually differ, or not; is God the Father the cause of the Son, or not; can God be resisted, or not; does God know all things, or not; Did man's first sin begin through the devil, or not; do we sometimes sin unwillingly, or not; does God punish the same sin both here and in the hereafter, or not. (Graves, 1915, pp. 53 - 54)

The term *aliquid*, as Abelard employs it in the penultimate quote above, is a term used in a controversy about the Trinity which raged in Abelard's time. Was Christ one or two persons, God and human, or one unified person, or something *aliquid*, something otherwise or anything else again? Abelard held that God, Christ the Son,

and the spirit or Holy Ghost were the one essence. The debate rages to hair-splitting dimensions and will not be pursued in this enquiry.

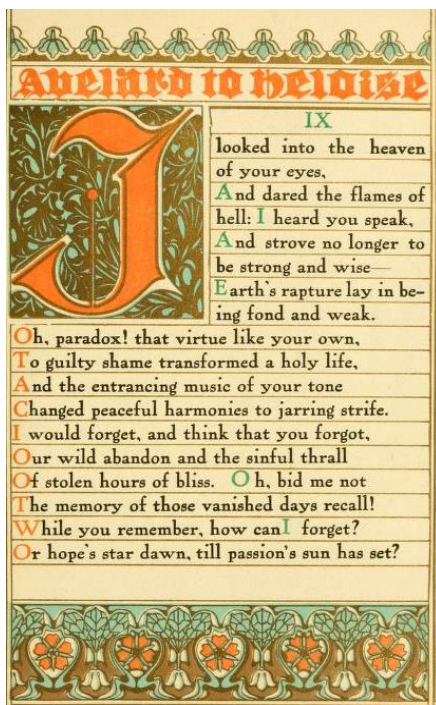
Just where Abelard ends up between realism and nominalism is not clear and his so-called conceptualism remains a matter of dispute, it being in his system something close to both the word and the object. There is also in Abelard the presence of Platonic-content ideas which exist in the divine understanding in the patterns of things even before they, the things, are created (Ueberweg, 1889, p. 393). A good understanding of the perceived closeness of reason to God can be glimpsed through Abelard's comparison of the three parts of the Aristotelian syllogism with the Trinity; the unity of the three parts of the syllogism reflects the unity of the essence of the Father, Son and Holy Ghost. Ueberweg (1960a, p. 394), directed to this finding by Otto of Freising in his *De Gesta Friderici* or *Deeds of Emperor Frederick* at I: 47, argues that Augustine had earlier come close to suggesting the same thing in *De Vera Religione*, 13, but that the introduction of the syllogism into the comparison, to be found in Abelard's *Introduction to Theology* (II), was entirely Abelard's own doing.

Abelard's application of dialectic to theology was to place him in many difficult situations throughout his lifetime but he was first and foremost a Christian believer and "would not be an Aristotle if this should keep me away from Christ" (Workman, 1908, p. 17). For that matter, Aristotle, for all his brilliance, could not either always keep Abelard from thinking about Heloise (Abelard, 2009, p. 45).

Where reason fails and a rigorous demonstration cannot be provided, moral consciousness must guide. The appropriate location in Abelard is *Introduction to Theology* III, page 119 of the Latin version used by Ueberweg (1889, p. 395). Abelard's position on Ethics, written as it was on the eve of the mediaeval rediscovery of the greater Aristotelian corpus, is something of a reformulation of the natural law of morals (ibid., p. 395) all be it wrapped in absolute and apposing terms of good and bad.

The appropriate location in Abelard is page 1211 of the Latin text of *Theologia Christiana* II used by Ueberweg (1889, p. 395). Abelard's position appears to be that sin consists of consent or intention to forego the Church's moral prohibitions

(Luscombe, 1971, p. 49). At this time both dialecticians and faith authoritarians express a belief that the good hate sin for love of virtue and not for fear of punishment. Ueberweg (ibid., p. 395) further explains on the basis of Abelard's *Dialogus inter Philosophum, Judaeum et Christianum* or *Philosophical Dialogue between a Christian and a Jew*, and the Prologue and Chapters 3, 13 and 15 of his *Scito te Ipsun*, or *Ethics* or *Know Thyself* (Abelard, 1971), that God is the highest good, human reason leads the way to it, and intention is the criterion which differentiates virtue as moral good, from moral evil.



Source:(Fischer, 1907).(artist). *Love Sonnet IX Abelard to Heloise* (illuminated page). Cropped by Ian Eddington from (Wilkcox, 1907) *The Love Sonnets of Abelard and Heloise*. Hammond: W. B. Conkey and Co. Wilcox has transformed the letters into sonnets.

Both good and evil inhabit the person. Intention is their release: natural inclinations such as lust and gluttony are in themselves not sins. Actions *per se* are indifferent. Sin inheres in the 'consent to absolute Christian moral prohibitions'. Moral consciousness can be faulty but, outside of such fault, sin occurs through consent to action which is against moral consciousness, and moral consciousness is what it ought to be when the individual subjective consciousness, occasioned through love of God, is coincident with the objective absolute commandments. They are virtuous who direct their will according to these twin guides so that under the human condition sin can only be avoided with great difficulty (Abelard, 1971, Ch 15). Whether reason might not instead be the slave of the will remained less

than a fully explored question.

Anselm (AD 1033 - 1109) and Abelard AD (1079 – 1142), both profound in their Christian faith, are, in a narrow sense, opposites in their husbandry of reason. As noted, for Anselm we reason because we believe. For Abelard we reason in order that we might believe and we believe by conviction rather than by authority. By Abelard's time, Science in reason, that is, syllogistic demonstration in dialectic and yes and no disputation of matters theological, was acceptable, subject to the

inviolability of the articles of faith. That same reasoned theology informed would-be citizens of an eternal *Polis* and city of God of the ethical behaviour required of them for entry to that city. Sufficient wilful control of the emotions so as ‘not to consent to the Christian prohibitions’ was their passport to the eternal city of God.

Anselm and Abelard mark a significant milestones in both reason’s journey to freedom and Science’s escape from faith Ethics. They also well illustrate the extent to which, during the period from Eriugena (AD c. 808 – 877) to circa 1200, Aristotelian Science as syllogism found in dialectic and *yes* and *no* disputation was recognised as an essential part of reasoned theology. They also illustrate the extent to which Neoplatonic idealism was blended and melded into church doctrine.

Works by some of Abelard’s contemporaries provide tastes of various other surrogate ingredients in this blending church doctrine and I now briefly discuss a selection of them. Bernard of Chartres (circa AD 1070 or 1080 – after 1124), William of Conches (AD 1090 – after 1154) and Adelard of Bath (AD 1080 - 1152), while each basing their teachings on Plato, still managed to accommodate the opinions of Aristotle (Ueberweg, 1889, p. 397). Bernard of Chartres saw fit to argue that the world soul, after emerging from the permanent unchanging ideas of divine reason as the Logos of God, fashioned matter into existing things on the basis of those unchanging ideas—which is very Platonic. His belief in native forms which infiltrate matter is not well documented (W. Turner, 1903/2012, p. 293). William and Adelard are of particular interest because of their engagement with nature.

William of Conches (AD 1090 – after 1154) abandoned theology for the study of nature after having been warned not to identify the Holy Ghost with the Platonic world soul (W. Turner, 1903/2012, p. 295). In his studies of nature he was influenced by Arabian Science (Southern, 2001, p. 68). While little allowing that the Church Fathers should have authority in matters of physics, he nevertheless recognizes their spiritual authority and the superiority of Christian doctrine above Platonism (Ueberweg, 1889, p. 398).

Adelard of Bath (AD 1080 – 1152) is also a harbinger of what was to come when keen intellects savoured the scientific flavour of Arabian interpretations of Aristotle. Adelard of Bath had travelled widely in Arabia and had translated Euclid (BC c.

300). He placated the church masters by arguing, after he had declared Aristotle to be right in finding the species and genera inherent in, and abstracted from, the individuals, by claiming that Plato was still correct in holding that in their purest forms and apart from material things, individuals, species and genera exist in the divine mind (Ueberweg, 1889, p. 398). One of Adelard's books, *Quaestiones Naturals*, is available in English and it well illustrates his interest in natural philosophy (Adelard of Bath, 1920, p. 89 - 90).

Gilbert of Poirée (AD 1070 - 1154) felt the wrath of the establishment when he argued in *De Sex Principiis* that quantity, quality and relation are contained in the substance category (Ueberweg, 1889, p. 399). Herein lies a possibility, through relation, that things in themselves, and of themselves, might interact without God's say, a sure controversy in the making. A work by Peter Lombard (AD 1100 - 1160), his *Sentences* (Lombard, 2010), written in this period and not completely free (Deely, 2001, p. 249) from the influence of Abelard's *Sic et Non* (P. Abelard, 1978), became the departure point for masters classes in the dialectical treatment of questions of theology. According to Ueberweg (1960a, p. 400), the mystics Bernard of Clairvaux (AD 1091 - 1153) and Hugo of St Victor (AD 1097 – 1141) continued to argue that the pursuit of knowledge for its own sake was heathenish and that uncorrupted knowledge could not be obtained by reasoning, which they held to be inferior to mystical contemplation. Ueberweg, referring to quotes from works by Boulay and Launoy not available in English, reports that around AD 1180 the mystic Walter of St Victor (AD 1097 – 1141) accused Abelard (AD 1079 – 1142), Peter Lombard (AD 1100 – 1160), Gilbert (AD 1070 - 1154) and Peter of Poitiers (AD c. 1130 – c. 1215) of being so possessed of the spirit of Aristotle that they “had treated with scholastic levity of the ineffable Trinity and the Incarnation” (Ueberweg, 1889, p. 400). John of Salisbury (AD 1120 - 1180) defended logic (1962). Works by Almarich of Bena (died c. 1204 – 1207), who evidently too directly identified the Creator with His creation, and David Dinant (AD c. 1160 – c. 1217), who also evidently offended in the manner in which he identified God with *nous* and the original matter of the universe, were from 1209 to 1215, along with Eriugena's works, and Aristotle's *Physics* and *Metaphysics*, forbidden to be read (Hodge, 2010, p. 166; Ueberweg, 1889, p. 401). In the next chapter I demonstrate, among other things, that this condemnation of Aristotle's works was to be short lived.

In summary, the specific purpose and work of the chapter, the same destination is reached whether the relationship between Science and Ethics is traced through an enquiry into curriculum structure, syllabus content and teaching method, or through an analysis of how leading scholars employed Science and Ethics to express and defend their beliefs. Reason has been brought to the aid of revelation and has produced the Science of theology which is compatible with revealed faith. They are ethical who do not transgress Christian prohibitions.

Even now, before the European development of the printing press, Aristotle's wider works were soon to be more fully discovered. But essentially, on the eve of this development, Science as syllogistic reasoning, as an essential ingredient of dialectic in yes and no disputation for truth about theological matters, is now a surrogate presence in that emerging combination of dialectic and rhetoric named logic. Science so understood, by making itself efficacious to the Ethics of faith authority, had made good ground in its march to independence, and some hard line theologians, being threatened by Science's rehabilitation, were critical of those who used it. Humans act ethically when, as explained, they summon the will not to consent to Christian prohibitions and earn by such behaviour cognitive entry to the eternal city of God.

CONCLUSION

In respect of the general work of this enquiry Science as syllogistic demonstration had, in the period under discussion, established its relevance as part of a reasoned approach to theology. In this approach rhetoric, dialectic and yes-and-no disputation could be employed as valid means of enquiry into questions of dogma, subject to an embargo which forbade questioning of the articles of faith.

The key terms nuance impact of these developments is summarised in Table 41, the content of which has been extracted from the discussion of the present chapter. Table 42 on page 401 carries that key terms nuance to articulation of the Thesis Proposition Statements.

The incremental key-terms nuance captured in Table 41 is coincident with a re-emergence of an interest in experimental Science. The first whisperings of a fledgling secondary counter discourse between Science and Ethics can be found in Gerbert (AD c. 946) and Adelard of Bath (AD 1080 – 1152). Overriding all of these

incremental changes, and the secondary counter discourse too, but devalued somewhat by being ahead of its time, was Eriugena’s claim that Science and faith are the same thing.

Table 41: Key Terms Nuance—Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>		
	Method	Sphere of Operations	Constraints
Science	Syllogistic demonstration through dialectic and-yes-and-no disputation of truth about Christian scriptures but outside of the articles of faith: the syllogistic demonstration of the true from the false.	God’s created holy rational nature in its act of love and choice of the highest good which as a human condition prepares the way for faith.	The articles of faith.
Ethics	Reasoned understanding of, and inherence in, religious truths revealed in Christian scriptures and associated authorised church dogma.	Faith as a condition of emotions and will: moral consciousness understood as the degree to which individual subjective consciousness is at one with consciousness of the absolute commandments.	Weakness of human will resulting in consent to transgress Christian moral prohibitions. Good intention’s fall to evil.
<i>Polis</i>	Ratification, through reasoned faith and love of God, of citizenship of an eternal city of God. Uncompromising unquestioning belief in the articles of faith realised through human will’s refusal to consent to transgress Christian prohibitions.	Intention and consent: that cognitive state occasioned when, within moral consciousness of the good and evil inhabiting the person, the will, under reason, consents, through love of God, to good above evil.	Intention’s temptation by, and fall to, evil.

Table 42 begins on the next page due to formatting and layout restrictions imposed by the software so that the remainder of this page is intentionally blank.

Table 42: Progressive Articulation of Thesis Proposition Statements—Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. <i>Polis</i> becomes a cognitive gathering or eternal city of God predicated on acceptance of His grace. Reason remains divine as a gift of a Christian God who is all reason and who is present in the human soul. Virtue is obedience to God's laws through acceptance of His grace.
		Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	There is no nuance of the term Modern Age. <i>Polis</i> remains a cognitive gathering bound through reasoned faith and love of God. Reason remains divine as a gift of a now Christian God. Virtue remains obedience to God's laws through acceptance of His grace and is practised by refusal to transgress Christian prohibitions.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by unquestioning life in Christ. Science as reasoned demonstration of natural truths is banished to irrelevant oblivion. Practical Ethics is replaced by faith Ethics.
		Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by reasoned life in Christ. Science becomes syllogistic reasoning in dialectic and yes and no disputation predominantly within the confines of faith authority and within a developing scholastic method. Science as observation and reasoning about natural phenomena, and engagement with them, begins to reappear in the form of experimental Science. Virtue is obedience to God's laws through acceptance of His grace and practical Ethics is living life under reasoned interpretation of those laws <i>qua</i> church doctrine. To be ethical is to act so as not to transgress Christian prohibitions.

Table 42 (Continued): Progressive Articulation of Thesis Proposition Statements—Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. Aristotelian practical Ethics becomes faith Ethics.
		Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	There is no nuance of the term Modern Age. Practical Ethics remains living of life under reasoned interpretation of the doctrine of the Church and consists in refusing to transgress Christian prohibitions.
<u>Integrating Summary of Part Two</u>			
<p>Aristotle’s unified political philosophy fractured under an intermingling of Greek heritage and Jewish revelation doctrine and the ongoing development of Christianity. By the time of Augustine (AD 354 – 430), Greek rational Ethics had been replaced by revealed faith Ethics, Christ as divine <i>Logos</i> had replaced <i>nous</i> as <i>logos</i>. Aristotle’s categorical explanation of being had been replaced by divine revelation’s announcement of God as the creator of the world and its beings. A personal Christian God of love became available as an alternative to a Jewish God of wrath and both had replaced an impersonal Greek god or one. A Greek city of ideas had been replaced as <i>Polis</i> by a Christian city of God. Science, now irrelevant to faith, and no longer recognised as the arbiter of truth under theoretical and practical reason, or knowledge of the four causes, but recognised as syllogistic method, is ignored to survive as best it can. Ethics inheres in overcoming the absolute sin outlined in the commandments. During the time from Augustine (AD 354 – 430) to the close of the twelfth century, church dogmatists could not wholly ignore the utility of reason which established itself as syllogistic demonstration in dialectic and disputation. Employed in this form under strict control by the authority of faith, reason begot a new Science of theology. Ethics inheres in willing oneself not to transgress Christian prohibitions and Ethics could employ reason subject to the constraints of the mysteries of faith. Science <i>qua</i> syllogistic demonstration and Ethics became compatible and reason and faith became one by virtue of faith Ethics’ acceptance of reason. Earlier Eriugena (AD c. 8008 – 877) had pronounced Science and faith to be the same thing. Abelard (AD 1078 – 1142) is something of a milestone of this development and at the time of his life, on the eve of the rediscovery of Aristotle’s wider corpus, Science is syllogistic reasoning within dialectic and yes and no disputation about truth in theology, Ethics remains that act by which humans will themselves not to transgress Christian prohibitions, and <i>Polis</i> is a city of God. During this time dialectic and rhetoric beget logic and a re-emergence in interest in experimental Science is discernible.</p>			

Chapter 6

Science, Ethics and *Polis*—Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274) and Aquinas to Buridan (AD c.1300 – c.1358)

INTRODUCTION

The general work and purpose of this chapter is to provide a historical framework for the chapter's specific work and purpose and is completed in one step on pages 403 to 408. The specific purpose and work of this chapter is to trace relationships amongst Science, Ethics and *Polis* from the death of Abelard (AD 1079 – 1142) until the time of Buridan (AD c.1300 – c.1358). It is completed in two steps, separated by Aquinas (AD 1225 - 1274), and occupies pages 409 to 438. During the time covered by this chapter, a developing secondary counter discourse on experimental Science can be discerned in the literature, which emerging counter discourse and its attendant advance in experimental method is discussed in the next chapter.

GENERAL WORK OF THE CHAPTER BEGINS

Major social events and changes occurred during the period under discussion. Nine major crusades were waged from AD 1090 to 1291 and a crusading venture in one form or another became part of a liberal education. A so-called age of chivalry began to emerge towards the middle of the twelfth century and in the second half of that same century, and continuing on into the next, some mediaeval cathedral schools began to morph into universities.

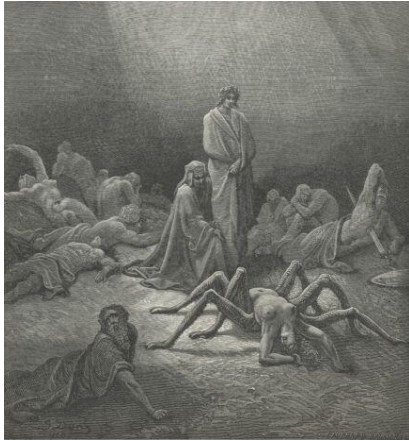
Mediaeval cities began to grow in sophistication and along with that growth European city-states emerged. During the thirteenth century building began on Gothic cathedrals some of which are still in use today. Frescos Giotto (AD 1266 – 1333) painted on walls of some then extant churches remain viewable in the second decade of this twenty-first century, for example in the Arena Chapel in Padua. As the Middle Ages began to draw to a close Durante degli Alighieri (AD c.1265 – 1321) captured for posterity a snapshot of some of its practices and beliefs (Dante Alighieri, 2010).

The Renaissance had begun in now-called Italy. Petrarch (AD 1304 - 1374) gave nascent humanism a poetic muse (Ullman, 1972, p. 35; Witt, 2000, p. 230) which humanism, during the remainder of the fourteenth and through the fifteenth century

(Fubibi, 2003; Krays, 1998; Liebrechts, 2004), flowed northwards from Naples and Florence to join the main stream of the Renaissance and feed into the Reformation.

Humanism gave rise to a humanities syllabus of grammar, rhetoric, history, poetics,

**Saul and Arachne in the First or Pride
Level of Purgatory**



O Saul!
How ghastly didst thou look! on thine
own sword
Expiring in Gilboa, from that hour
Ne'er visited with rain from heav'n or
dew!
O fond Arachne! thee I also saw
Half spider now in anguish crawling up
Th' unfinished web thou weaved'st to thy
bane!

Arachne is now half woman, half spider and
Saul is depicted fallen on his sword.

Source: Cropped by Ian Eddington from (Dore,
1832 - 1883). (artist). *Virgil and Dante*.
Looking at the Spider Woman. (Engraving and
text from *The Divine Comedy* (Dante, 1901).

and philosophy. The arrival of gunpowder in the Christian West, perhaps facilitated by William of Rubrick (AD 1220 - 1293) and Roger Bacon (AD 1214 - 1294), was to weaken the power of the Feudal Knights. The *Magna Charta* was signed in AD 1225, and in a revised form in AD 1279, and is symbolic of a passage of power from castle to city. The dawn of the fourteenth century brought with it an arrival of national states and parliamentary governments. Constantinople fell in AD 1452.

**General Work Continues: Aristotle's Wider Corpus and
Other Greek Works Return to the West**

During the twelfth and thirteenth centuries a wider corpus of Aristotle's works was, in what is now Spain, translated from Arabic to Latin. So translated, Aristotle's works became a medium through which Greek knowledge returned to a Christian West. This flow of knowledge not only

confronted existing clerical Western understandings but also carried seeds of scientific nuance. Circumstances surrounding the survival of Aristotelian learning in Arab Spain help explain how Greek Science was preserved and subsequently came to influence in the Christian West.

For example, the Assyrian Church of the East separated from the Eastern Christian Churches which supported the condemnation of Nestorianism by the First Council of Ephesus in AD 431. The Nestorians—who after Nestorius (AD 386 - 451), Archbishop of Constantinople, held that the human and divine in Christ as *Logos* were two separate identities—avoided ongoing persecution by accepting refuge first in Assyria, and later in Persia under the last pre-Islamic kings of the Sassanid

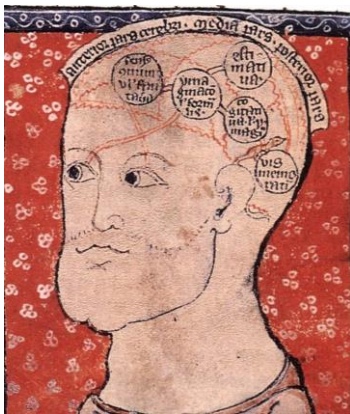
Empire. This last pre-Islamic Persian Empire began in AD 226 with the reign of Ardashir I and ended with the defeat of its last king, Yazdegerd III (died AD 651) in AD 636. At its height, the Sassanid empire rivalled the Roman Empire and occupied much of present day Iran, Afghanistan, Iraq, Syria, Central Asia in the southwest, much of Turkey, coastal regions of the Arabian Peninsula, the surrounds of the Persian Gulf and south-western parts of Western Pakistan. It is the empire of the book of the *Thousand and One Nights* (Lane, 1847). The Nestorian schools, first at Nisbis in Assyria, and later at Edessa in Persia, taught religion, philosophy and medicine and were, in essence, centres of Aristotelian learning which held Science in general, and medical Science in particular, in high regard. Nearby at Gandisapora was a school which taught Greek medicine and philosophy and at Rasiana and Kinnesri, were Monophysite schools which also imparted Aristotelian learning. Again, the scientific dimension was preserved. The Monophysites, who against the Nestorians held that Christ had only one nature, were also persecuted by the Orthodox Church. By virtue of the custodianship of Aristotelian learning provided by these schools, and the fall of the Sassanid Kingdom to Islam in AD 636, a wider Greek corpus, largely lost to the West, was brought to, and survived by virtue of Arab scholarship.

Ueberweg (1889, p. 408 - 410) reports Sprengar's view (Sprenger, 1869, p. 17) that the rise of Mohammedanism amongst Arabs was occasioned by their need for a religion both monotheistic and anti-trinitarian but was also fuelled by a reaction against suppression. He further explains that in spite of a fanaticism the Arab reaction soon occasioned, and a natural anathema it engendered for the Greek way, Aristotle, by virtue of his one-god metaphysics and theology, and his work in physics and natural Science, was soon found compatible and acceptable with Arab hegemony. It is not surprising that scholars in the Christian West, when confronted with an emerging Arab heritage of Aristotelian thought, including the spurious attributions to Aristotle, would, through disputation, refashion those works so as to render them more compatible with Christian beliefs.

The Islamic East then consisted of Central Asia, Iran, Egypt, and Syria, and scholars there, of fame then and now, include Alkendi (died AD 870), Alfarabi (died AD 950), Avicenna (AD 980 – 1037), and Al Ghazali (AD 1059 – 1111). In the Islamic

West, consisting of Northern Africa and Northern Spain, Avempace (died AD 1138), Abubacher (AD 1100 – 1185), and Averroes (AD 1126 – 1198) were and remain, well known. Al Mumum (AD 786 – 833), from whose time onwards Greek philosophical works were translated into Syriac and Arabic by Syriac Christians is, like Charlemagne in the West, remembered for his commissioning and dissemination of Greek learning in the Arab world.

The well-travelled and most widely respected *Jewish* scholar, Moses Maimonides



Source: Cropped by Ian Eddington from an unknown English miniaturist. (miniaturist illumination on parchment). Cambridge University Library: Philosophers and Philosophy in Art. (English Miniaturist, circa 1300).

(AD 1135 – 1204), in his *Guide to the Doubting* or *Guide of the Perplexed* (Maimonides, 1904, 1963) named Aristotle the authority on matter’s scientific and sub-lunar but affirmed revelation as the authority in matters divine (Ueberweg p. 419). It is not easy to find such a division so simply expressed in any one place in the book but Maimonides (1951) comes close to it on page 210. Maimonides is squaring Aristotle with the Jewish scriptures, sponging away some of Aristotle’s so-called blasphemy and he benchmarks against Aristotle from beginning to end (ibid., pp. 18, 68, 103, 121, 135, 148-149, 151, 152, 153, 156, 157, 158, 159, 160, 163, 176, 178-200, 226, 234, 249, 255, 262, 265, 273-275, 277, 281-287, 302, 319, 353) addressing *inter alia* some twenty-six propositions used by philosophers to prove God’s existence (ibid., pp. 145 – 250). Maimonides’ knowledge of Aristotelian works is instructive and except for *ex nihilo* being a superior explanation of eternity of the universe he would find Aristotle acceptable (ibid., p. 156) subject to some difficulties (ibid., pp. 176 – 178, 189 – 190, 195 – 196). Some of Strauss’ University of Chicago lectures on Maimonides are available (L. Strauss, 2011, recorded lectures) and in them Strauss comments on how Maimonides attempts to explain how Jews might square Science with their religious faith and how, *inter alia*, the work itself has levels of meaning, a subject not pursued further in this enquiry. Maimonides entices further reading of his work by claiming that it will bring enlightenment about the “pin upon which everything hangs, and the pillar upon which everything rests” (Maimonides, 1885, p. 3). He allowed only general headings and there is quite some wonder about whether the guide reduces perplexity at all

(Shatz, 2002; L. Strauss, 1963, pp. xi - lvi; 1987). As has been discussed on pages 390 and 397, some limited exposure to Arab scholarship from Spain was evident in the Christian West as early as Gerbert (died AD 946) and Adelard of Bath (AD 1080 - 1152).

Also, as previously discussed on page 375, before this time, Western Christian



Source: Cropped by Ian Eddington from (Andrea da Firenze, 1365 - 68). (artist). Detail of Averroes (Ibn Rushd, 1126-1198) from *Triumph of St. Thomas and Allegory of the Sciences*. (1365 - 1368). (fresco). Cappella Spagnuolo, Santa Maria Novella, Florence.): *Philosophy and Philosophers in Art*. (Andrea da Firenze, 1365 - 68).

scholars were already acquainted, via Boethius and others, with most of Aristotle's *Organon* consisting of the *Categories* (Aristotle, 1938a, 1952a), *On Interpretation* (Aristotle, 1938b, 1952j), the *Prior Analytics* (Aristotle, 1938c, 1952q), the *Posterior Analytics* (Aristotle, 1952p, 1960a), and the *Sophistical Refutations* (Aristotle, 1952i, 1958). It was the translation into Latin of the wider works of Aristotle (BC 384-322) and others, for example the Persian Islamic writers Avicenna (AD 980 - 1037) and Al Ghazali (AD

1058 - 111), the Islamic scholar Alfarabi (died AD 950) born in either present day Kazakhstan or Afghanistan, and the Andalusian Jewish poet-philosopher Avicbron (AD 1021 - 1058), that catalysed new activity in the West. Archbishop Raimund of Toledo (AD 1125 - 1152) had ordered that translations of the wider works be made circa AD 1150 and at first there was burning of some of the newly translated Aristotelian works. Yet the translations had their effect in the Christian West (McInerny, 2004, pp. 20 - 24; Rubenstein, 2003, pp. 12 - 46). Prohibitions against reading them existed until circa AD 1231 to 1277 (Turley, 2004, p. 80; Ueberweg, 1889, p. 432). Williams (2006, p. 36) finds the flow from Spain beginning in the tenth century.

In spite of prohibitions church doctors were, circa AD 1254, widely reading these translated works which were set as reading in liberal arts at the University of Paris the now-called Sorbonne presently partly located on its Mediaeval foundations, the wider body of Aristotelian works being available in Latin from AD 1210 to 1225 (Ueberweg, 1889, p. 432).

As universities grew and spread so did increasingly secular discussion of the newly translated Aristotelian works. The University of Paris was founded circa AD 1160 –



Source: Detail cropped by Ian Eddington from Lippi, F. (artist). *The Triumph of St Thomas Aquinas over the Heretics*. (fresco). Carafa Chapel of Santa Maria sopra Minerva, Rome: Web Gallery of Art. The so-called triumphed over heretics are likely Arius, Apollinarius, and Averroes. (Lippi, 1489-91).

1170 or in AD 1208 according to differing definitions. Other foundation-date claims are Oxford AD 1167, Modena AD 1175, Valencia AD 1208, Cambridge AD 1209, Salamanca AD 1218, Montpellier AD 1220, Padua AD 1222, Naples AD 1224, Toulouse AD 1229, Orleans AD 1235, and so the new knowledge spread.

Not only by virtue of such progress was Aristotle, like Plato before him, to be further reconciled with church understandings, but also church doctors were to indulge themselves in removal of Arab nuance from Aristotle. Many names are of note. Of fame are Alexander of Hales (died AD 1245), William of Auvergne (died AD 1249), Robert Grosseteste (died AD c. 1252), and Bonaventura (AD 1221 – 1274) but among the most notable are Albert Magnus (AD 1193 – 1280) and his pupil Thomas Aquinas (AD 1225 – 1274).

In summary of the general work of this chapter. Partly due to the crusades, and partly due to scholarly enquiry, a wider Aristotelian caucus together with elements of Arab scholarship became known again in the West from circa AD 1150 onwards. The period covered was one of great social change. For example, the Crusades, the Age of Chivalry, the Renaissance, the Reformation, Humanism, the arrival of gunpowder in the West, and the beginnings of the city state, all played their parts.

SPECIFIC WORK OF THE CHAPTER BEGINS

The specific work and purpose of the chapter is discussed in two steps. The first step, ranging over pages 409 to 425, covers the period from the death of Abelard (AD 1079 - 1142) to the whole life of Aquinas (AD 1225 – 1274) in whose work reason and faith are coeval in the Science of theology. The second step, occupying pages 425 to 438, covers the period from the death of Aquinas to the whole life of Jean Buridan (AD c. 1300 – c.1358) during which time the unity of faith and reason is

beginning to fracture and estrangement of philosophy, theology and metaphysics each from the other is discernible. In both steps, I trace esoteric relationships amongst Science, Ethics and *Polis* through an analysis of some of the works of noted scholars and the changing meanings of the key enquiry terms that can be extracted from those works.

At the start, key terms are as they were at the end of the last chapter. Science is the syllogistic-demonstration part of reason's method of syllogistic demonstration in dialectic and yes and no disputation. Ethics is reasoned understanding of the revealed truths of scriptures actualised by uncompromising belief in the articles of faith and a refusal of will to transgress Christian prohibitions. *Polis* is a cognitive gathering of the city of God ratified by reasoned faith and love of Him.

Step One: Science, Ethics and *Polis* from Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)

Before the end of the thirteenth century, largely due to the work of Albert Magnus (AD 1193 – 1280) and Thomas Aquinas (AD 1225 – 1274), a contention that faith and reason are the same thing, in so far as it could be demonstrated, appears to have been demonstrated. Although Science and faith each begin from separate premises—Science from the intuitive truths of reason, and faith from the revealed truth of scriptures—Thomas Aquinas was able to find them consistent in truth.

But before Aquinas came Magnus his teacher.

Step One Continues: Albert Magnus (AD 1193 – 1280)

English translations of Magnus's works are scarce and in seeking to trace his contribution to evolving relationship between Science and Ethics I have had to rely heavily on secondary sources. All the same, the recent publication in English of his work on animals (Magnus, 1999) provides ample evidence of his prodigious output in natural Science. Of Magnus, Schaff holds him to have been “a philosopher, naturalist, and theologian; a student of God, nature, and man, [one who] wrote on the vegetable, [one who was] indefatigable in experimentation, the forerunner of the modern laboratory worker, and [one who] had much to do with arsenic, sulphur, and other chemical substances” (1997, Vol. V, Ch. XIII, §107, my square brackets). Turner (1903/2012, p. 341 - 342) supports this view and names Magnus as being unwilling to mention in his commentaries many doctrines he learned from natural

Science (ibid., p. 342). Ueberweg finds him to be the “first Scholastic who reproduced the whole philosophy of Aristotle in systematic order, with constant reference to Arabic commentators, and who remodelled it to meet the requirements of ecclesiastical dogma” (1889, p. 436).

Magnus posits that the lower vegetative, animal and motive faculties of the soul are at one with *nous*, Aristotle’s divine something from without, and that together with *nous* these faculties of soul are immortal. In a sense, Magnus appears closer to the present church doctrine of resurrection of the body which doctrine Aristotle could never hold. Magnus recognises the Greek cardinal virtues of prudence, justice, temperance and fortitude, and the Christian virtues of faith, hope, and love or charity, as equals, and makes freedom of the will a central tenet of Ethics.

Between that which the reason recognises as desirable, and that which natural propensity desires, free will (*liberum arbitrium*) decides; through this decision desire is transformed into perfect will (*perfecta voluntas*). The law of reason (*lex mentis, lex rationis et intellectus*), which engages us to act or not to act is conscience (*conscientia*): this is inborn and imperishable, in so far as it is the consciousness of the principles of action. (Ueberweg, 1889, p. 440)

The conscience explained in the preceding quotation is not a moral capacity. Whereas for Aristotle the lower moral virtues consist of mental positions taken under the aegis of the intellectual virtues, about matters of value and just desire, for Magnus, moral virtue as a means of right living is a quality of mind produced by God. Ethics remains faith Ethics occasioned by virtue of God’s grace. Free will, which appears to make its own decisions, seems to be something which accommodates tensions between reason and bodily need. Questions arise. For example, in humans, is reason really superior to will and hence able to advise it?

Magnus (AD 1193 - 1280), who engaged Aristotle through Avicenna (AD 980 - 1037) and Maimonides (AD 1135 - 1204), and who kept the doctrine of the trinity and its associated mysteries outside of the reach of reason (Magnus, 1651, Vol. XVII, p. 6; Ueberweg, 1889, p. 438), had no option but to disagree with Aristotle on the eternity of the world.

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and its associated mysteries outside of the reach of reason (Magnus, 1651, Vol. XVII, p. 6; Ueberweg, 1889, p. 438), had no option but to disagree with Aristotle on the eternity of the world. Creation as revealed in *Genesis* is, in the view of Magnus, an act in time. For Magnus, as for Aristotle, matter gives individualisation and form



Top from left to right: Dante Alighieri, front and Beatrice back, then Albert Magnus back and Thomas Aquinas, front.
Bottom from left to right: Johannes Gratin, Peter Lombard, Dionysius the Areopagite, King Solomon, Unknown, Paulus Orosius, Boethius, Isidore of Seville, Venerable Bede, Richard St Victor, Siger of Brabant

Source: Cropped by Ian Eddington from (Giovanni di Paolo, between 1442 and 1450). *The First Circle of the Twelve Teachers of Wisdom Led by Thomas Aquinas*. (illuminated manuscript). The British Library, London: Philosophy and Philosophers in Art. (Giovanni di Paolo, between 1442 and 1450).

gives essence, thingness or name, and universals exist only in the intellect. For Magnus, God as first cause is known not through reasoned knowledge of nature alone but also through faith, reason being able to access only secondary causes found in natural philosophy, that is, physics and its associated Sciences (Ueberweg, 1889, p. 439). For Magnus, Logic is a Science which teaches how to proceed from the known to the unknown (Ueberweg, 1889, p. 438). Science remains syllogistic demonstration in the sense of Aristotle. Ethics remains faith Ethics and *Polis* remains a city of God.

Step One Continues: Thomas Aquinas (AD 1225 – 1274)

Just how far natural reason could bring humans from the known to the unknown was further clarified by Thomas Aquinas who, in clearly stating limitations imposed on natural reason by the mysteries of the faith, actually loosened the shackles of reason's serfdom to revelation. Under Aquinas, objective truth can be obtained by the human mind. Such objectivity allows humans to rethink the thoughts of the divine mind. First premises of truth are revealed in the scriptures and are to be developed by fathers of the Church. When philosophy extends beyond theology then a solution is to be found by reflection on Aristotle (Davies, 2003, p. 15; A. McGrath,

2011, pp. 38 - 39, 90, 213, 417) and the working out of every principle to its logical conclusion (Mellone, 1918, p. 240).

Aquinas made natural reason a necessary precondition for engagement with the mysteries of faith. In his unfinished *Summa Theologica* (Aquinas, 2009c), the first of the three sections deals with God and the unfolding of all things from Him. In his answer in Book 1 to Question 32, (Article 2) which question asks whether the persons of the Trinity can be known through natural reason, Aquinas argues first that although:

reason be employed in two ways to establish a point: firstly, for the purpose of furnishing sufficient proof of some principle, as in natural science, where sufficient proof can be brought to show that the movement of the heavens is always of uniform velocity ... [and that although] reason is employed in another way, not as furnishing a sufficient proof of a principle, but as confirming an already established principle, by showing the congruity of its results, as in astrology the theory of eccentrics and epicycles is considered as established, because thereby the sensible appearances of the heavenly movements can be explained. *Summa Theologica* (Aquinas, 2009c, Book 1, Question 32, reply to Objection 2, my brackets)

then adds a qualification that:

it is impossible to attain to the knowledge of the Trinity by natural reason. For, as above explained (12, 4, 12) man cannot obtain the knowledge of God by natural reason except from creatures. Now creatures lead us to the knowledge of God, as effects do to their cause. Whoever, then, tries to prove the Trinity of persons by natural reason, derogates from faith. *Summa Theologica* (Aquinas, 2009c, *ibid.*)

It is impossible to prove the Trinity of persons because:

our intellect cannot attain to the absolute simplicity of the divine essence, considered in itself, and therefore, our human intellect apprehends and names divine things, according to its own mode, that is in so far as they are found in sensible objects, whence its knowledge is derived" (Aquinas, 2009c, Book 1, Question 32, Article 2).

In respect of the three preceding quotations from Aquinas, the theory of eccentrics and epicycles Aquinas speaks about in the first quotation is an intricate machinery of circles moving on circles constructed to make the observed movements of the heavens fit with the requirements of Aristotle's geocentric or earth-centred universe (Koestler, 1990, pp. 47 – 48, 70 - 71; Kuhn, 1957, pp. 59 - 64, 66 - 73; Ptolemy, 1952, pp. 270 - 478).

Of the *Summa Theologica* as a whole, the third section, which was allocated to Christ and the sacraments, ceases after the sacrament of penance and, according to J. M. Heald (1817, p. 657), on the authority of commentaries by de Rubeis in an incompletely referenced twelve volume edition of the works of Aquinas, this third sector was completed by adding the eschatology from Aquinas' *Commentary on the Sentences of Peter Lombard* (Aquinas, 2009a). When asked why he did not complete the third part, Aquinas is said to have answered that his former writings now appeared to him as straw (B. Davies, 1992, p. 9). Speculation runs to rejection, stroke, or nervous breakdown. Nonetheless, Aquinas draws fine distinctions in his engagement with Aristotle's works and, as mentioned on page 6, this chapter progresses slowly in its identification of such distinctions.

In general, Aquinas applies his Aristotelian explanation of the psychology of human

Table 43: The Articles or Mysteries of Faith

(1) The creation of the world in time (2) Original sin (3) The incarnation (4) The sacraments (5) Purgatory (6) The resurrection of the body (7) Salvation and damnation and the final judgement of the world
Source: Extracted by Ian Eddington from Ueberweg, F. (1889). <i>History of Philosophy from Thales to the Present Time</i> . (p. 443). New York: Charles Scribner's Sons.

mind to render the articles of faith free from reason's grasp thereby further prescribing natural reason's limitations, and in a sense, its freedom. If natural reason is unable to prove the mysteries of faith, by what method does faith receive its

own proofs? Aquinas answers that faith receives its own proofs in three ways, namely, by acceptance of God's invitation to faith, by evidence of His fulfilled prophecies, and by natural reason's ability to grasp certain truths which are believable through demonstration and which serve as preambles to faith. For example, in the following quotation, Aquinas argues the unity of God as one of the *preambula fidei* or preambles to faith:

I answer that Demonstration can be made in two ways: One is through the cause, and is called "*a priori*," and this is to argue from what is prior absolutely. The other is through the effect, and is called a demonstration "*a posteriori*"; this is to argue from what is prior relatively only to us. When an effect is better known to us than its cause, from the effect we proceed to the knowledge of the cause. And from every effect the existence of its proper cause can be demonstrated, so long as its effects are better known to us; because since every effect depends upon its cause, if the effect exists, the cause must pre-exist. Hence the existence of God, in so far as it is not self-evident to us, can be demonstrated from those of His effects which are known to us. *Summa Theologica* (Aquinas, 2009c, Book 1, Question 2, Article 2)

We have met such *a priori* methodology before with Aristotle on page 258. The individuals, that is, the effects—that lady Hypatia or that man Crito say—are known to us before or relatively prior to their causes in this sense: to know the parentage or cause of that lady Hypatia or that man Crito, we must first know of the existence of Hypatia and Crito the relatively prior ‘effects’. It may then be possible to work *a posteriori* to the parentage whose act(s) of causation were temporarily and absolutely prior to the ‘effects’—Hypatia and Crito—which effects as noted are relatively prior or known first to us. Put simplistically we must first know the children before we can know their parentage. The children are the effects, the parents are the cause, and tracing backwards from effects to cause is *a posteriori* method.

Aquinas, who would have nothing of Anselm’s *a priori* proofs of God’s existence, offers five proofs (Aquinas, 1952, pp. 12 - 13, Part 1, Question 2, Article 3) , favouring the first one based on Aristotle’s *Metaphysics* XII 6 - 10, (Aristotle, 1952d, pp. 601 - 606; 1989) and *Physics* VIII 250b15 – 252b5 (Aristotle, 1952n, pp. 334 - 336; 2004), and focussing on motion. Copleston (1971, p. 341) claims that the third proof, which came to Aquinas from Avicenna (AD 980 - 1037), via Maimonides (AD 1135 – 1204), should be preferred. His third proof has also been linked, *inter alia*, with Aristotelian unmoved mover reasoning (Aquinas, 2009c; B. Davies, 1992, p. 31; Elders, 1990, pp. 83 - 139; A. McGrath, 2011, p. 176).

The mystery of true revealed faith, the particular *articuli fidei* in the case under discussion, is knowledge of the persons of the Trinity. The naturally reasoned proof given above of the possibility of an existing God serves as a preamble to the article of faith *per se*, which article cannot be proved by natural reason and consequently might only be revealed to those accepting God’s call. Truth is occasioned by faith when, through confidence in God, intellect accepts God’s infusion of the theological virtues of faith, hope, and charity or love, together with a parallel set of virtues to match the natural virtues of prudence, justice, temperance and fortitude. I discuss the infused virtues in more detail on pages 421 to 423. Science as syllogistic demonstration is of little consequence in demonstration of the mysteries of faith but it might be used to demonstrate the preambles of faith.

In particular, in Aquinas’s system, sacred doctrine is a Science. Just as perspective is a higher Science illuminating the rules of geometry, and music is a higher Science

illuminating the rules of arithmetic, so theology, the Science of God, illuminates the rules of natural reason (Aquinas, 2009c, Book 1, Question 1, Article 2). Unfortunately for Aquinas, comparison is no longer considered to be sufficient for proof, and few might now accept that syllogistic reasoning in dialectic about metaphysics is a Science rather than a theology. Nonetheless, at this time of compatibility between faith and reason, theology is a Science by which, *a posteriori*, it is possible to prove God's existence. By virtue of it both faith and reason each share in truth, and natural reason is now a more senior partner because of the role it plays in the preambles to faith. Theology is a special Science with its own revealed truth, and it informs faith Ethics. That other Science, which reveals its presence through its method of syllogistic demonstration, remains a central part of reason wherever reason is applied.

So far this chapter contains only general analysis of a relationship between Science and Ethics in Aquinas' system. I now turn to specific analysis of that relationship.

Aquinas addresses Ethics in Book 2 of *Summa Theologica* (Aquinas, 2009c, pp. 1 – 198, 380 - 620), in the third part of *Summa Philosophica* known also as the *Summa de Veritate Catholicae Fidei contra Gentiles* or *Summa Against the Gentiles* (Aquinas, 1905, pp. 183 - 336; 1957) and in *De Virtutibus* or *Disputed Questions on Virtue* (Aquinas, 2005, passim). Following Aristotle, Aquinas agrees that “the contemplative life has greater merit than the active life” (Aquinas, 2009c, Book 2 Part 1, Question 57, Article 1). He accepts the presence of intellectual virtues of which he names three, wisdom or theoretical reason, Science or syllogistic reasoning, and understanding or intellect. As earlier discussed he also accepts the presence of moral virtues of which he names four: prudence, justice, temperance and courage which four he calls the cardinal or principal virtues. In addition, Aquinas names three theological virtues, faith, hope, and charity or love. Hierarchically, the intellectual virtues are higher order virtues than the moral virtues but above both these categories stand the theological virtues which complete the chain to God. Love captains the theological virtues and wisdom and prudence respectively captain the intellectual and cardinal virtues. Table 44 sets out Aquinas's hierarchy of virtues.

Of the cardinal virtues, prudence, operating not unlike practical wisdom, officiates over correct actions between mankind wherein it informs the virtue of justice (Aquinas, 2009c, Bk. 2, Part 2, Q. 58, Art. 2; Bk. 2, Part A, Q. 113, Art. 1).

Table 44: Aquinas—Virtues and Their Functions

The Virtues	The Functions of the Virtues
<u>Theological Virtues</u>	<i>Generally “the virtues of man as sharing the Grace of God” (Aquinas, 2009c, Bk. II, Part I, Q. 58, Art. 3)</i>
charity (love)	Renders the will, that is, transforms the will into oneness with the divine end.
faith	Renders truth complete, that is, occasions rectitude of the wholeness of our knowledge through the truth of revelation.
hope	Renders the divine end above nature.
<u>Intellectual Virtues</u>	<i>Generally rectitude of thought</i>
wisdom	Contemplation of truth about metaphysical causes and to judge the conclusions of Science and the principles or understandings on which these conclusions are based.
Science	Contemplation of truth about material beings and their causes.
understanding	Contemplation of truth about principles which inform scientific enquiry, which principles are understood by the intellect.
<u>Moral Virtues</u>	<i>Generally rectitude of actions and passions</i>
prudence	(i) Rectitude of any actions or passions whatever in respect of appetite. (ii) Prudence, as wisdom, is also “an intellectual virtue ... needed in the reason, to perfect the reason, and make it suitably affected towards things ordained to the end” (Aquinas, 2009c, Book 2, Part A, Question 57, Article 5). It is an intellectual virtue which when assigned to adjudicate things to be <i>made</i> is <i>art</i> and when assigned to things to be done is prudence as wisdom.
justice	Rectitude of actions toward others.
temperance	Rectitude of desire or passions resulting from the concupiscible appetites.
fortitude	Rectitude of desire or passion resulting from the irascible appetites.
Source: Constructed by Ian Eddington from Aquinas, T. (1952). <i>Summa Theologica</i> . (Bk. II, Part B, Q. 58, Art. 2; Bk. II, Part A, Q. 113, Art. 1; Bk. II, Part B, Q. 60; Bk. II, Part A, Q. 60, Art. 1; Bk. II, Part A, Q. 61, Art. 1; Bk. II, Part A, Q. 58, Art. 3; Bk. II, Part A, Q. 57, Art. 4; Bk. II, Part A, Q. 61, Art. 3). In R. M. Hutchings <i>Thomas Aquinas II</i> . Chicago: William Benton. (Aquinas, 1952).	

Prudence also adjudicates in the realm of the passions within mankind wherein it informs the virtues of temperance and fortitude (Aquinas, 2009c, Book 2, Part 2, Question 60, Article 1). Virtue, as temperance, is a limiting countervailing power which emerges when prudence directs correction of the thwarting of reason arising from the passions of the concupiscible faculty. Virtue, as fortitude, is the equivalent countervailing power which emerges when prudence corrects the thwarting of reason resulting from the passion of fear, or of dislike of work, which passions arise from the irascible faculty.

In particular, human virtue is a limiting of power attributed to reason (Aquinas, 2009c, Bk. 2, Part 1, Q. 55, Art. 3), is found in, or exists as, active habit (Aquinas, 2009c, Bk. 2, Part 1, Q.55, Art. 1), is a habit of the appetitive faculty (Aquinas, 2009c, Bk. 2, Part 1, Q.60, Art. 1), and is perfectly defined as that “good quality of

the mind, by which we live righteously, of which no one can make bad use, which God works in us, without us" (2009c, Bk. 2, Part A, Q.55, Art 4). In short, "the act of virtue is nothing else than the good use of free will" (Aquinas, 2009c, Bk. 2, Part 1, Q .55, Art. 1).

What then is free will and how is its good use to be understood?

Just as the intellect of necessity [naturally] adheres to the first principles, the will must of necessity adhere to the last end, which is happiness; since the end is in practical matters what the principle is in speculative matters (Aquinas, 2009c, Book 1, Question 82, Article 1, my square brackets).

The first principles Aquinas is speaking about are those earlier discussed on page 260. They are, first, the principle of non-contradiction or that it is impossible to be or not to be the same thing at the same time under the same conditions *Metaphysics* IV 1005b35 – 1006a (Aristotle, 1952d, p. 525; 1989); second, the principle of the excluded middle or that contradictories cannot be at the same time true of the same thing so that there cannot be an intermediate or middle between contradictories *Metaphysics* 11011b20 – 25, (Aristotle, 1952d, p. 531; 1989); and third, the principle of identity or that a thing is itself and is inseparable from itself *Metaphysics* VII 1041a15 – 20 (Aristotle, 1952d, p. 565; 1989).

So the will is necessitated by happiness and is not free to dismiss this necessity. The

Electrochemical Moral Worlds

The time will come when the issue of human responsibility, in general moral terms as well as on matters of justice and its application, will take into account the evolving science of consciousness. Perhaps the time is now. Armed with reflexive deliberation and scientific tools, an understanding of the neural construction of conscious minds also adds a welcome dimension to the task of investigating the development and shaping of cultures, the ultimate product of collectives of conscious minds. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain*. (p. 29). Random House. Kindle Edition. (Damasio, 2010, p. 29)

will, as the appetite of the intellect (Aquinas, 2009c, Book 2, Part A, Question 82, Article 2) is, notwithstanding this desire and necessity for happiness, and even though it is closely allied to reason, an intellective power rather than a

rational power. While of necessity the will adheres to the end, which is happiness, humans freely choose the means to that end, and this free choice, known as the contingent will, operates in choosing between the practical alternatives which might lead to happiness.

Windelband explains that when reading Aquinas it is helpful to understand contingent as the "possibility of being otherwise or a power of the contrary"

(Windelband, 1914, p. 330). The free will can be counselled by virtuous reasoned desire, of which more later, but in and of itself “the free will is indifferent to good and evil choice” (Aquinas, 2009c, Book 1, Question 82, Article 2).

The necessary will, this higher appetite and companion of the intellect, fixed as it is to realisation of mankind’s potential, which is happiness, is the appetitive part of the soul and it is not affected by corporeal impressions, that is, by vegetative and sensitive impressions, because the intellectual part of the soul “is not the act of a

Damasio on How Self Comes to Mind

It goes without saying that the construction of a conscious mind is a very complex process, the result of additions and deletions of brain mechanisms over millions of years of biological evolution. No single device or mechanism can account for the complexity of the conscious mind. The different parts of the consciousness puzzle have to be treated separately and given their due before we can attempt a comprehensive account. Still, it is helpful to start with a general hypothesis. The hypothesis comes in two parts. The first specifies that the brain constructs consciousness by generating a self process within an awake mind. The essence of the self is a focusing of the mind on the material organism that it inhabits. Wakefulness and mind are indispensable components of consciousness, but the self is the distinctive element. The second part of the hypothesis proposes that the self is built in stages. The simplest stage emerges from the part of the brain that stands for the organism (the protoself) and consists of a gathering of images that describe relatively stable aspects of the body and generate spontaneous feelings of the living body (primordial feelings). The second stage results from establishing a relationship between the organism (as represented by the protoself) and any part of the brain that represents an object-to-be-known. The result is the core self. The third stage allows multiple objects, previously recorded as lived experience or as anticipated future, to interact with the protoself and produce an abundance of core self pulses. The result is the autobiographical self. All three stages are constructed in separate but coordinated brain workspaces. These are the image spaces, the playground for the influence of both ongoing perception and of dispositions contained in convergence-divergence regions. *Self Comes to Mind: Constructing the Conscious Brain*. (2011). (p. 181). Random House Kindle Edition. (Damasio, 2010, p. 181)

corporeal organ” (Aquinas, 2009c, Book 1, Question 83, Article 1, Reply to Question 5). On this point, Aquinas could not but fall when measured against present neuroscientific searchings of how self comes to brain-made mind (Damasio, 1995). Intriguing speculation continues (L. R. Baker, 2007; Corcoran, 2006; Murphy, 2006; Searle, 1997).

Still, in Aquinas, the lower appetites of the soul which emerge from its vegetative and sensitive components, which components

require bodily organs for their realisation, answer to the judgement of reason (Aquinas, 2009c, Book 1, Question 83, Article 1). Aquinas, like Magnus but unlike Aristotle, allowed all of the faculties of the soul an existence after death.

At the level of the moral virtues free will, really free judgement, is the principle of the act by which mankind judges freely, and it is a power (Aquinas, 2009c, Book 1, Question 83, Article 2). Under free will, mankind, *qua* humans acting as sensual cognising individuals, is confronted by choice alternatives emerging within themselves or amongst actions between themselves and others, and this choice involves a compromise between reason and appetite. Reason counsels the preference of one thing over another and appetite accepts or rejects judgement of reason’s

counsel. On balance, after citing Aristotle's leaning towards free will's choice being rational, "a desire proceeding from counsel (Arist. Ethics iii, 3)" (Aquinas, 1957, Question 83, Article 3) rather than appetitive, Aquinas pronounces it an appetitive power and calls it an intellectual appetite rather than an appetitive intellect (ibid., Question 83, Article 3). It, the will, is the superior appetite.

Because the will adheres of necessity to happiness and to goods necessarily connected with happiness, and because true happiness consists in God alone, the will adheres of necessity to things which lead to God. But there is a qualification:

Nevertheless, until through the certitude of the Divine Vision, the necessity of such connection be shown, the will does not adhere to God of necessity, nor to those things which are of God. But the will of man who sees God in His essence of necessity adheres to God, just as now we desire of necessity to be happy. (Aquinas, 1957, Question 2, Article 2).

In absolute terms, the intellect is a higher power than the will "because the object of the intellect is the very idea of the appetible good; and the appetible good, the idea of which is in the intellect, is the object of the will" (Aquinas, 2009c, Book 1, Question 82, Article 3, Answer). In Aristotelian terms, we love the object for the good in it more than we love the object *per se* which actual object the will desires at the behest of the idea of it held in the intellect. Mankind's free will, expressed through judgement, the source of such judgement being comparisons facilitated through apprehension and intellect, and so understood as contingent will, may take opposite courses "equivalent to the various courses taken in dialectic syllogisms and rhetorical arguments" (Aquinas, 2009c, Book 1, Question 83, Article 1). By allowing Science as syllogistic reasoning and rhetoric to inform moral or ethical choice Aquinas reveals his close attention to Aristotle.

Furthermore, will, as the appetite of the intellect, has functional components in proportion to the components of the intellect (Aquinas, 2009c, Book 1, Question 83, Article 4). In the intellect there is "*understanding* [italics added] of first principles which are known of themselves" (Aquinas, 2009c, Book 1, Question 83, Article 4, my square brackets) and there is reason which "properly speaking [again after Aristotle], is to come from one thing to the knowledge of another: wherefore, properly speaking, we reason about conclusions which are known from the principles [or from conclusions necessarily connected to those principles]" (ibid., my square

brackets). By analogy: as intellect as understanding of first principles is to reason, so necessary will as the necessary desire for happiness is to power of choice, which power as explained on page 417 is contingent free will. Just as to understand and to reason belong to the same power (Aquinas, 2009c, Book 1, Question 79, Article 8) so too, to will and to choose belong to their respective same power and “the will and the free will are not two powers but one” (Aquinas, 2009c, Book 1, Question 83, Article 4).

Will’s necessary desire for happiness is to be found in the precepts of natural law which precepts are to will what the first principles of understanding are to intellect. Precepts of natural law are expressed in statements such as good is to be done and evil avoided, and every whole is greater than its part. Aquinas (2009b, Art. 8 Response) illustrates differences between his idea of natural law and that of Aristotle. The precepts of natural law are grasped through *synderesis*.

Step One Continues: *Synderesis*, Aquinas’ Highest Activity Order of the Moral Sense

Synderesis is said to be a law of our mind, because it is a habit containing the precepts of natural law, which are the first principles of human *actions* (Aquinas, 2009c, Book 2, Part a, Question 94, Article 1). It is helpful to know that for Aquinas nature, and thus all things natural, should be understood as God’s inherence in the thing being spoken of. The precepts of natural law are there by virtue of God’s presence in nature. Speculative reason or wisdom searches for truth for its own sake. It proceeds through syllogistic reasoning from first principles grasped by the intellect, to conclusions. So too, practical reason or prudence, in choosing amongst various means to the attainment of mankind’s necessary end, proceeds to conclusions through syllogistic reasoning from its own first natural law principles grasped by virtue of *synderesis*. *Synderesis* is “the highest activity of the moral sense” (Inge, 1917b, p. 157).

Inge (1917b, pp. 157 - 158) gives various meanings of *synderesis* or *sinderesis*. He traces its usage from a corruption of a Greek word meaning preservation through Jerome (AD 340 or 347 – 420) as observation; Bonaventura (AD 1221 - 1274) as *conscientia*, or as the ally of *intelligentia*; Ruysbroeck (AD c. 1293 – 1381) as the natural will towards good implanted in us all; Giseler (died AD 1004) as the spark created in the soul of all men; Eckhart (AD 1260 – 1328) as an indistinguishable

Funkelein, or flash, in the soul of all men, calling it God; and Gerson (AD 1363 – 1429) as the simple intelligence allied to contemplation (ibid., pp. 157 – 158).

Given, as explained earlier, that virtue is the good use of free will, and that free will is the choice of means to ends, it is not surprising that virtue is an integral part of *synderesis*, and given that Science, understood as syllogistic logic, informs free choice, it is clear that Science or reason understood as syllogistic demonstration is also a key pillar of Aquinas's system.

Aquinas, like Aristotle before him in the case of the lower virtues, does not set specific rules for moral choice. Practical wisdom or prudence, learned from experience, must mediate on a case by case basis. Aquinas allows though, that under grace, mankind may drink from another well of practical wisdom. Through grace, God may instil a capacity for *synderesis* by infusing or pouring into mankind similarly functioning cardinal virtues of prudence, justice, temperance, and fortitude and when those in grace avail themselves of such infusions they are acting for their own good but for God's sake (Aquinas, 2009b, Article 10, Response).

There is a qualification governing mankind's access to infused cardinal virtues. Access to such virtues can only occur if, over and above the natural cardinal principles of virtue, there are also supernatural principles of action infused in man by God.

The natural principles of operation are the essence of the soul and its powers, namely, intellect and will, which are the principles of man's activity as such. And this is so because intellect has knowledge of the principles by which it might be directed to other things and will has a natural inclination to the good proportioned to its nature, as was argued in the preceding question. Therefore, in order that a man might perform actions ordered to the end of eternal life, there is divinely infused in him first grace, by which the soul has a kind of spiritual existence, and then faith, hope, and charity, so that by faith the intellect is illumined by certain things known supernaturally, which are in this order as the principles naturally known in the order of connatural activities, and by hope and charity the will acquires a certain inclination to that supernatural good to which the human will is insufficiently ordered by its natural inclination.

Thus, over and above the natural principles by which the habits of virtue are acquired for man's natural perfection in a manner connatural to him, as has been said above, man acquired by divine influence, beyond the supernatural principles mentioned, certain infused virtues by which he is perfected in operations ordered to the end of eternal life (Aquinas, 2005, pp. 66 - 67; 2009b, Article 10, Response).

Natural principles of virtue cannot then in and of themselves bring perfect happiness which can be found only in God and by virtue of His infusions. The virtue of faith brings intellectual assent by divine light (Aquinas, 2009c, Book 2, Part 1, Question 62, Article 3) and reveals what is not apparent: "faith is a habit of the mind, whereby eternal life is begun in us, making the intellect assent to what is non-apparent" (Aquinas, 2009c, Book 2, Part 2, Question 4, Article 1, Response). This is certainly some *carte blanche* for certain kinds of people. Hope brings the will to eternal happiness by perfecting it in preparation for the eternal life inherent in God's supremacy over nature (Aquinas, 2009c, Book 2, Section 1, Question 62, Article 3). Charity or love, "the mother ... of all virtues" (Aquinas, 2009c, Book 2, Section 1, Question 62, Article 4) and the key to all infused virtues, further perfects the will and unites humans with God (Aquinas, 2009c, Book 1, Section 2, Question 62, Article 3).

In passing, I found it chilling to read of a human contingent will linked to an intellect yet independent of a necessity for happiness in its choice of means to ends—an intellect that through grace could be induced to believe what is not apparent. Plato's charioteer metaphor of a composite soul in which the charioteer as an integral but controlling part of that soul practicing something like what is now called metacognition remains valid for me. So too does the further development of a tripartite soul by Aristotle, wherein intellect and reason are supreme in the search for truth and goodness. As discussed earlier on pages 236, 243 and 263 Aristotle allows no respite for reason and the intellectual virtues from their checking and balancing duties in the realm of the moral virtues.

It also occurred to me when reading Aquinas, and also commentary on Duns Scotus, that perhaps Plato's charioteer is the will, and not the intellect or reason, and that scholarship may have been in error from the beginning. I do not hold this view although Lawton (1901, p. vii) simply states that the charioteer is the will. Plato likely recognises will as is evidenced by presences of noble and ignoble spirits in three governing powers of soul *Republic* X 580 - 582 (Plato, 1952r, pp. 420 - 421; 1969b). In any event, to give the will primacy over intellect, as Duns Scotus was later to do, and to cut contingent will free from intellect in matters of grace, that is, make it independent of reason in matters of beatitude, is to introduce a possibility for

all manner of licence and atrocity in the practical ways God's so-called revealed truths might be interpreted and defended.

While the natural human virtues which answer to reason can bring only imperfect this-world happiness, the infused moral virtues lean towards God's blissful eternity and they answer to divine law. They are a separate kind of virtue (Aquinas, 2009c, Book 1, Section 2, Question 63, Article 4). In 1651 Thomas Hobbes, writing in a context of the correct and strict use of words, would argue that "it be false, to say that vertue can be powred, or blown up and down; the words In-powred Vertue, In-blown Vertue, are as absurd and insignificant, as a Round Quadrangle" (Hobbes, 1651, p. 20) and that to claim that "Faith Is Infused" (Hobbes, 1651, p. 24) is an absurdity.

Aquinas and Aristotle are similar in their approach to understanding G(g)od. Aristotle relied *a posteriori* on observed relatively near effects, for example observed so-called perfect cycles of the heavenly bodies, to find their absolutely prior cause in the first cause and unmoved mover, thought thinking itself, from whence the divine *nous* partakes of the human soul. Aquinas argues *a posteriori* from existing relatively near effects such as God's existing creatures, to the absolutely prior first cause and Christian God as a preamble for faith, from which God, theological and divine cardinal virtues might be infused into mankind. But there the similarity ends. Whereas Aristotle provides little detail about possible eternity of *nous*, Aquinas assures that those who find the vision of God in heaven will have everlasting eternal happiness and full resurrection of the body (Aquinas, 1952, III, Q. 75, Art. 1).

Step One Continues: Similarities and Differences Between Aristotle and Aquinas

In both Aristotle and Aquinas, Science and Ethics are inextricably interwoven and scientific method as syllogistic reasoning is crucial to both theoretical and practical wisdom and is indispensable to mankind in its ascent to their final end in virtuous happiness. In both Aristotle and Aquinas, there are no specific hard and fast rules to assist in the multitude of decisions about how to act out best means to ends. Aristotle's impersonal god, and the divine *nous*, are, in Aquinas, a personal Christian God and *Logos* as Christ and Aquinas allows that necessary will and appetite for God's love answers not to human reason. Under Aristotle, *nous* remains a mystery. Under Aquinas, absolute truth is revealed about Christ in trinity.

In Aristotle, natural law is a function of place and virtue. In Aquinas, natural law is an expression of God’s nature and is found through faith and virtue. In Aristotle, the esoteric *Polis* is a state prior to mankind, present in mankind’s social predispositions, and earthy predispositions they are too. In Aquinas, the esoteric *Polis* remains the city of God. In Aristotle, mankind can sense what it is to be godlike. Aquinas holds out the possibility, through infused virtues, of being one with God. For those not so infused, Aquinas differs little in process from Aristotle in his depiction of a human condition in which in each waking hour, humans, if they are to be virtuous without God’s infusions, must struggle through application of wisdom and prudence to make the right choices in the everyday humdrum of life. Some 1550 temporal years separate this history of ideas nearness of Aquinas to Aristotle.

Table 45 details of the incremental changes in key-terms meaning brought to this chapter as represented by and Aquinas (AD 1225 – 1274).

Three so-called Sciences are extant these being theology, natural Science in the

Table 45: Key Terms Nuance—Aquinas (AD 1225 – 1274) at the High Point of Syncretisation

Field	Esoteric Dimensions of Science, Ethics and <i>Polis</i>		
	Method	Sphere of Operations	Constraints
Science	The intellectual virtue of syllogistic demonstration both <i>a priori</i> and <i>a posteriori</i> in dialectic and logic within the confines of a revealed faith theology. Theology too is a Science in an exoteric sense, that is, it uses reasoned demonstration, its esoteric dimension being God’s revealed truths.	The faculties of the intellectual virtues of wisdom, or theoretical reason, Science or syllogistic reasoning, and understanding or intellect inhering in the intellect’s necessary adherence to first principles and the intellectual appetite or will’s necessary adherence to the precepts of natural law through <i>synderesis</i> .	Revealed truth.
Ethics	<i>Synderesis</i> understood as the contingent will’s free choice of means to an end, under the necessary will’s adherence to happiness as mankind’s end, by which <i>synderesis</i> practical reason or prudence grasping its own first principles of natural law, reasons through syllogistic demonstration, to its own choice conclusions.	<i>Synderesis</i> now understood as the highest activity of the moral sense: either (a) <i>synderesis</i> first under grace and then under infused theological virtues of faith, hope and love and cardinal moral virtues of wisdom, justice, temperance and fortitude, or (b) <i>synderesis</i> without grace whereby practical wisdom, on the basis of experience, must mediate between choice on a case by case basis.	Human frailty expressed as the contingent or free will’s vacillation under the irascible and concupiscent passions.
<i>Polis</i>	Ratification, through grace, of citizenship of the eternal city of God attainable through sublimation of infused theological and cardinal virtues under God’s grace.	Beatitude and bliss of God’s eternity and supremacy over nature.	Absence of faith and/or recalcitrant free will.

making, and syllogistic reasoning. Science *per se* is named by Aquinas as the intellectual virtue of syllogistic reasoning. At this high point of syncretisation, when reason and faith are pronounced compatible, Science, understood as syllogistic reasoning, but barred from interrogation of the mysteries of faith, is at work in

finding truth. Its workplace is bounded by the intellect's necessary adherence to its own first principles and the will's necessary adherence to its natural law precepts. Within this workplace, through grace, Science informs ethical choice as a prelude to beatitude, or, without grace, and from experience, it informs moral choice. Aquinas retains the efficiency element of rational Ethics and places it in a Christian faith setting. To be ethical in a technical sense is now to be good at living a righteous Christian life.

Aquinas' cognitive tapestry soon began to unravel, in spite of the intricate and masterful weaving that had produced it. I begin to discuss this unravelling in the next paragraph thereby commencing the second of the two steps constituting the specific work of the chapter, namely, tracing the relationship between Science, Ethics and *Polis* from Aquinas (AD 1225 – 1274) to Jean Buridan (AD c. 1300 – c. 1358)

Step Two Begins: Science, Ethics and *Polis* from Aquinas (AD 1225 – 1247) to Jean Buridan (AD c. 1300 – c. 1358)

The new thought catalysed by that flow of Arab learning may well have proven an even more rapidly effective change agent had not that Arab learning itself been threatened by the growing power of Mohomedism. From the twelfth century until the Fall of Constantinople in 1452, translations from lands under control of Mohomedism became increasingly scarce and translations into Hebrew and Latin made by Jews were sought out and used in the West. These developments notwithstanding, experimental Science did begin to re-emerge during this period and its re-emergence is discussed in more detail in the next chapter. The remainder of this chapter is given to examination of theological developments which, through weakening the faith-reason link, helped produce conditions by which natural philosophy and metaphysics would each take their leave from theology.

Step Two Continues: John Duns Scotus (AD c. 1270 - 1308)

The first unravelling began with Duns Scotus (AD c. 1270 - 1308), “master of theology, of philosophy, of astronomy, and mathematics” (H. O. Taylor, 1911, p. 513). Duns Scotus provides a critical and sceptical engagement with philosophical arguments that sustain the articles of faith, but does it without jettisoning the absolute authority of revealed scripture (Duns Scotus, 2009c, 2009d). The Trinity, the Incarnation, the creation of the world, God's omnipotence, God's divinity as the

chief end of mankind, and the immortality of the soul cannot be proved by reason: the will of God is the only explanation of their truth, a truth conditional on voluntary submission to church teachings.

Once such revealed truths are accepted, reason may, after pronouncing due acknowledgements, have full play (Duns Scotus, 2009a; Ueberweg, 1889, p. 457). Duns Scotus offers a proof of the existence of God. He is also implicated in contributing to the doctrine of the Immaculate Conception (Muscat, 2011, Distinction 3, Question 1, n.p.; Ueberweg, 1889, p. 454), which Magnus had not yet accepted.

When so generally stated, Duns Scotus' position appears not markedly different from that earlier explored for Aquinas but, although Duns Scotus finds reason and faith compatible, in him the gulf between them appears wider and deeper (Mellone, 1918, p. 245; Rickaby, 1911, p. 29; Ueberweg, 1889, p. 452 - 453). For Rickaby, this "growing distrust of reason [’s ability to justify faith, represents] the first autumn tint of decay" (1911, p. 30, my square brackets), a decay hastened by a subtlety of thought through which Duns Scotus not only overreached himself but also triggered "the beginning of its [scholasticism’s] decline" (ibid., p. 27, my square brackets). In Scotus' time another kind of peaceful cognitive *Polis*, the Land of Cockayne, announces its presence. In that land, confectionary could be plucked from the walls of houses, and there was no work to do—animals did not need feeding, foods transported themselves ready cooked to the tables and priests and nuns could have their ways with each other (Anonymous, Early 1330s, n. p.). Perhaps the Land of Cockayne is an eternal *Polis* of the appetitive soul.

Fine distinctions and subtleties can be found throughout works attributed to Duns Scotus and/or contested as his (T. Williams, 2009b, pp. 1 - 14), and certainly within commentaries widely agreed as his. These commentaries are those on Porphyry's *Isagoge* (Duns Scotus, 2009f) and Aristotle's *Logic*, *Sophistical Refutations* (Duns Scotus, 2004b), and *Categories* (Pini, 2002). His penchant for fine distinctions is also present in other of his accepted writings such as his commentaries known as *Opus Oxoniense* or *Oxford Lectures* or *Ordinato* on the *Sentences* of Peter Lombard (Duns Scotus, 2009b) and his later work at the University of Paris, his *Opus Parisiense* also

known as *Paris Lectures or Reportata* (Duns Scotus, 2004a). These Paris lectures also deal with the *Sentences* (Duns Scotus, 2009g).

Some scholars, who appear to be fluent in Latin (Balic, 1965; Bettoni, 1961; Copleston, 1971; R. Cross, 1998, 1999, 2002; Frank & Wolter, 1955; Reichmann, 2006; Rickaby, 1911; T. Williams, 2003; A. B. Wolter, 1983, 1986, 1987; A. B. Wolter & Alluntis, 1975/2015; Allan B Wolter & Bychkov, 2004), have sifted through Duns Scotus' subtle similarities, distinctions and differences and isolated defining essentials of his contribution. For example:

(1) Duns Scotus, unlike Aquinas and Aristotle, is reported as making will a higher faculty than intellect and of pronouncing, again unlike Aquinas and Aristotle, that beatitude or extreme happiness and bliss is an act of will, not an act of the understanding. Bliss in the sense of blessing or beatitude is given, *inter alia*, to those who "hunger and thirst after righteousness" (Holy Bible, 2009a, Matthew Ch. 5, V.6).

Knowing and willing are faculties of soul but will is spiritual and unlike sense appetite, and even intellect, which are both caused from without, it is free from any cause beyond itself. Beatitude occurs when mankind's will functions in accordance with God's will. This claim by Duns Scotus that the key to mankind's end in God is found in the will through grace and love and not in the intellect through grace and love, as Aquinas had taught, is no small change in the Western history of ideas. Will is not determined by reason and cognition, but uses it.

Taylor (1911, p. 512) cogently states Duns Scotus' position: the will directs itself to the idea of the good which is higher than the true, to which the intellect or reason directs itself; and loving is greater than knowing. And when, in today's world, one might apply Duns Scotus' explanation to interpret actions of men and women at work busily carrying out the most ugly atrocities in God's name and for the love of God, it can appear that in such matters the intellect, understood as intellectual virtue and its attendant reason and understanding, has sometimes little if any say at all. Certainly in the first half of the twentieth century those experimentally practicing the triumph of the will felt it necessary to encourage fervent spiritual loyalty to their leader and country above all else.

(2) Duns Scotus is a realist: he accepts that individuals exist independently (Duns Scotus, 2009e, II 3 1 Q.5 - 6) outside of mind, their existence being subject to God's presence as the first principle of all (Duns Scotus, 2009h,1.2, 4.2). Understanding and sensing are simply two forms of knowing predicated on a fundamental axiom that there is immediate apprehension of independently existing objects. In answer to the question of what the world of these individual objects is made of, Duns Scotus replies *materia secundo-prima*, which is Aquinas's primordial *materia-prima*, and pronounces it a substrate of a formless and incorporeal matter (sic.) which he calls *materia primo-prima* which matter, unless God so wills, can never be found existing on its own.

Materia primo-prima is the first material of the world: it flowers into rational souls, and fruits as pure intelligences or angels. Aristotle's hierarchy of thought thinking itself, secondary unmoved movers, and *nous* and potential seems not so far away after all. *Materia secundo-prima* is the material of becoming and change. Duns Scotus' hylomorphysm is universal but it is complicated by his distinction between 'thisness', *haecceitas* and 'whatness', *quidditas* or general essence. Duns Scotus introduces the principle called *haecceitas*, which, although it is neither form nor matter, still gives individuality to enformed existing things. For example, the 'whatness' or *quidditas* of Hypatia or Socrates themselves is respectively woman and man, the form of the enformed matter. The 'thisness' or *haecceitas* is Hypatia rather than say Heloise, or Socrates rather than say, Critias—or for that matter Hypatia rather than Critias. To begin the further generation of subtlety Duns Scotus has *haecceitas* operating at the level of various animal, mineral and vegetable substances and again within that level for individual occurrences of those substances. In the example under discussion *haecceitas* operates at the level of man and Socrates.

It is from individuals so understood that universals obtain their so-called reality (Windelband, 1914, p. 341) and in this Windelband holds that Duns Scotus in particular amongst the Franciscans was following Avicbron (ibid., p. 341).

(3) Duns Scotus broke the link between metaphysics, understood as dialectically reasoned demonstration of matters transcendental, and theology, understood as revealed truth, without violating the articles of faith. He did this by declaring theology to be a practical rather than speculative faculty (H. O. Taylor, 1911, p. 510).

At that time, after the fashion of Aquinas, theology continued to be regarded as a Science at Oxford (H. O. Taylor, 1911, pp. 512 - 513) and Taylor is unable to find Duns Scotus denying that theology is a Science (1911, p. 516). For Duns Scotus theology is something higher than Science because it goes directly to the perception of principles and it does not need either Science or philosophy. Herein reason, through its scientific method of syllogistic demonstration, found an escape route to its own independence from theology.

For Duns Scotus, God's revelation is said to be an expression of His own free will, through which He specifies mankind's means to its end in God, and is thus a guide to action. Theology then, even though it acknowledges reason, is a kind of wisdom and understanding of principles rather than a rational method for reaching conclusions, and it does not take its orders from metaphysics. Theology is apart from the rest and above them. In particular, metaphysics as dialectic about matters transcendental was much less subordinated to theology and in the extreme was irrelevant to it. In a sense, metaphysics had also been pronounced entirely free.

Irrespective of whether the fine difference between metaphysics and theology is convincing when one goes beyond definition to various psychology of mind understandings perceived then and now in vogue, both the perception of the difference, and its exposition by Duns Scotus, constitute a substantial change. Duns Scotus had opened a door through which reason, understood as Science as syllogistic demonstration, and philosophy, understood as metaphysics, would make their exit. By default of the break between theology and metaphysics, theology, metaphysics and philosophy took their leave of each other. Reason was just that one step closer to its own freedom and independence, and its own rite of passage was soon to occur, and so too blossoming of a scientific revolution, and its attendant emergence of new understandings of Science and philosophy.

Step Two Continues: William of Ockham (AD 1289 - 1349)

Another of the preconditions for the escape of reason and a re-emergence of experimental Science was set up by William of Ockham (AD 1289 - 1349). I have gained insights into Ockham from some of his available works and from commentaries by others (Bosley & Tweedale, 1997; Spade, 1999; William of Ockham, 1930, 1980, 1989, 1991). Ockham revived nominalism but not the extreme

forms of it defined earlier in Table 40 on page 367. The extreme nominalism of those earlier times accepted only the name of a genus as real, and in its moderate form accepted that universals exist in the mind. Under Ockham only the individual thing, the particular was real, the universal being a conception of the human mind, a term having no reality, and existing outside of the mind merely as a sign or word.

The universal was not formed by extraction from particulars as the realists would have it but was rather a mediate concept accompanying the presence of two or more individuals. This seemingly now insignificant change was, in the ferment of the times, a window through which those entrapped by the abstraction of realism could focus on individual phenomena, and relationships amongst them: Ockham's nominalism, because it fosters study of individual phenomena, is another paving stone in a road to natural philosophy proper. His nominal stance against realism is predicated on the fundamental notion "that entities must not be unnecessarily multiplied" (Ueberweg, 1889, p. 462), including the universal as a real existence, and this differentiates him from both Plato, for whom the universal existed in reality by virtue of the forms, and Aristotle, for whom the universal existed in reality within the mind.

Ockham's entities statement now commonly known as Ockham's Razor, or Occam's Razor, may not have been used by Ockham in the form given in the previous paragraph and may thus be an expression of a later scholar. W. M. Thorburn (1918, pp. 346 -347) finds Ockham expressing the razor in different Latin terms and has Ueberweg (1889) removing the citation given in the previous paragraph in a later edition of his book. Monahan (1953, p. 54) informs that the principle of parsimony, by whatever name it is called, can be found in Aristotle's *Physics* I 6 189a15 – 19, VIII 6 259a6 – 14 (Aristotle, 1936b; 1952n, pp. 264, 344), Grosseteste's *De Iride* (1912, p. 75), Henry of Ghent's *Quodlibet* (XI 3) and Duns Scotus's *Opus Oxoniense* (II, 16 1 n. 15). Nevertheless, now with Ockham the universal exists within the thinking mind only as a concept and outside the thinking mind, nowhere at all.

This basic difference is anathema to Aristotelian Science: universals there may be, and sound and reliable as concepts they may be, but there is no objective reality in them. Aristotelian categories are relegated to a difference in words and grammar: universals are intuitively understood coincident thoughts accompanying the presence

of two or more similar individuals (Ueberweg, 1889, p. 463). For Ockham, intuitive knowledge remains knowledge of whether a thing is or is not, and the rest is judgement of mind. Such judgement, based as it is upon sense knowledge, may be defective so that intuitive knowledge is superior to sense knowledge (ibid., p. 463). It seems already that Ockham has Aristotle, in defiance of Aristotle's rule of individual entity, present and not present at the same time. Ockham also claims that sensual soul, the feeling soul, dwells in parts of the body as form, while the intellectual soul, like *nous* before it, is a substance separate from the body (Ueberweg, 1889, p. 464).

Scientific knowledge for Ockham is knowledge of the necessarily true and it is obtained through syllogistic reasoning predicated on fundamental premises induced from experience *Quodlibetal Questions* (William of Ockham, 1991, I Q. 2). Yet after all of this, all knowledge is God's knowledge and his alone. Not even God's ideas exist separately (Ueberweg, 1889, p. 463). Human knowledge is true only to the extent that God allows humans to represent to themselves "the divine knowledge after the analogy of our own", (ibid., p. 463). Under such arrangements Ockham allows only God's existence rendered probable on reasoned grounds. The articles of faith are not capable of being so reasoned.

Looked at in another way, Ockham also set reason free. Essentially, knowledge which transcends experiential knowledge, experiential knowledge being intuition, conception and reasoned demonstration, is the knowledge of faith (ibid., p. 464). It is knowledge not demonstrable by reason and is accessed by a will to believe the scientifically indemonstrable. Furthermore, will is not subordinate to understanding or reason as Aquinas would have it. God's existence is only reasonable *a posteriori*, God as first cause arrived at in the fashion of Anselm being as questionable as Scotus' proof from a chain of consecutive efficient cause producing efficient cause is insufficient *Quaestiones in libros Physicorum Aristotelis* I Q. 135 (William of Ockham, 1488, Latin text) and when he, Ockham, switches from consecutive causation to successive conservation in that chain he has to posit a heavenly body as original conserver to prevent infinite regress (ibid., Q. 136). "I say that we do stop at a first efficient cause and there is no regress to infinity. It is sufficient that a heavenly body be posited because we do experience concerning such that they are the causes of others." (Woods, 1973, pp. 69 - 87, Ockham Quod. II Q. 1 quoted by Woods).

Teleological explanations are likewise uncertain because while cognate beings will their actions, it does not follow that human will acts as God has ordained, which, if postulated, supplies the final cause intended to be proved *Summa Logicae* III, c. 2 (William of Ockham, 2015).

In spite of his reservations, Ockham at *Quodlibet* III, Q. 3, n. 1 informs that even though “that God is the mediate or immediate cause of all thing ... cannot be demonstrated, yet I argue persuasively for it on the basis of authority and reason.” (Quoted in Ziccardi, 2011, no pagination).

Given Ockham’s position which essentially weakens the unity of reason and faith at a time of secular presence in the forming universities, it is little wonder that following him, the possibility of two contradictory kinds of truth began to re-emerge. In 1339 the arts faculty of the University of Paris forbade teaching of Ockham’s doctrines (Coleman, 1992, p. 563) but this was to have little lasting censorship effect. The so-called two truths difficulty was to work itself out in either of two ways. One was mysticism, which in essence worked at making faith alone, not reason, the main business but in a way not threatening to natural philosophy. The other was an ongoing emergence of natural philosophy predicated on God’s presence in nature. The mysticism route is beyond the scope of this enquiry and the case of an emerging natural philosophy is pursued in the next chapter.

Step Two Continues: Jean Buridan (AD 1300 - 1358)

Now somewhat free, reason was soon to turn to questioning the will’s freedom to act. Jean Buridan (AD 1300 - 1358) asked how the will might act when balanced equally between competing desires. Celebrated now as the Buridan’s Ass metaphor (M. Clark, 2007, p. 28), an ass placed equally between two bales of hay starves to death through failure of will because it is indifferent to each bale. Monahan (1953, pp. 1 - 3) explains that Aristotle in *On the Heavens* II 13 (Aristotle, 1952m, pp. 384 - 387; 1984a) had earlier set up such a condition for analysis purposes, and that a similar usage of the convention can be found in *The Divine Comedy* (Dante Alighieri, 2010, Paradise, Canto IV Lines 1 - 3) and that Buridan did not mention the ass, a finding supported by Ueberweg (1889, p. 466). Lagerland (2003, pp. 173 – 203) discusses Buridan’s example of a dog starving to death between two piles of food in his *Questions on Aristotle’s De Coelo* (Buridan, 1942, Latin text) Buridan’s discussion

of competing choices is reported located in *Quaestiones super Decem Libros Ethicorum Aristotelis ad Nicomachum* (Buridan, 1968) at Book III Question 1. Buridan’s position was that it is impossible to decide the question (Ueberweg, 1889, p. 466). Buridan is also credited with the introduction of impetus theory (Drake, 1999, p. 299) and a conundrum in logic known as *Sophism 17* or *Buridan’s Bridge* (Buridan, 1982, pp. 74 - 76).

It is reasonable to question Buridan in return about the nature of these barriers in the resolution of this enigma of free will: might the barriers be psychological, or moral, or even after all, might the will be not entirely free? Monahan (1953) treats such

Table 46: Key Terms Nuance—Aquinas (AD 1225 – 1274) to Buridan (AD c.1300 – c.1358)

Descriptor	Esoteric Dimensions of Science, Ethics and <i>Polis</i>		
	Method	Sphere of Operations	Constraints
Science	Syllogistic demonstration of the true from the false in the realm of experiential knowledge understood as intuition, sensation and reason. It is based on fundamental premises induced from experience.	Divine reason’s necessary connection to the true, operating in the domains of sensation and cognition.	The will’s free choice and affinity for loving rather than knowing, which affinity, through love of God, allows mankind to believe the scientifically indemonstrable.
Ethics	Active adherence to God’s will revealed in the scriptures and occasioned by the will’s adherence to that revelation.	The practical faculty of theology, theology being understood as that which can go directly to perception of principles without the need for Science or philosophy.	The will’s failure to conform to God’s will.
<i>Polis</i>	The cognitive gathering occasioned through the human will’s acceptance of God’s will.	The spiritual will’s access to the grace of God.	The will’s failure to conform to God’s will.

questions in passing and reveals that Buridan, from a sitting-on-the-fence-position, leans enough both ways to allow something of a resolution to indecision of the will. Under a “liberty of final ordination” (Monahan, 1953, n. p.) Buridan is able to maintain freedom of will in the presence of reason’s superiority and the will’s necessary connection to the final good. When the will is indifferent between two alternatives to the same end it may postpone choice “until reason has decided which is a better route to take” (Buridan, 1968, III Q. 1; Monahan, 1953, pp. 29 - 30). The will can “freely accept (or will) any means. It can freely reject any or all means, and go back to the original volition. Or it can withhold its determination until reason has investigated to discover the best means” (ibid., p. 30). This freedom of will differentiates mankind from the beasts and it is predicated on Ethics, above all, understood as mankind’s responsibility for their actions (Monahan, 1953, p. 31).

Table 47: Progressive Articulation of Thesis Proposition Statements Abelard (AD 1079 – 1142) to Aquinas (AD 1225 – 1274) and Aquinas to Buridan (AD c.1300 – c. 1358)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. <i>Polis</i> becomes a cognitive gathering or eternal city of God predicated on acceptance of His grace. Reason remains divine as a gift of a Christian God who is all reason and who is present in the human soul. Virtue is obedience to God's laws through acceptance of His grace.
		Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	There is no nuance of the term Modern Age. <i>Polis</i> remains a cognitive gathering bound through reasoned faith and love of God. Reason remains divine as a gift of a now Christian God. Virtue remains obedience to God's laws through acceptance of His grace and is practised by refusal to transgress Christian prohibitions.
		Chapter 6 Science, Ethics and <i>Polis</i> —Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)	There is no nuance of the term Modern Age. <i>Polis</i> is an eternal city of God occasioned through acceptance of infused theological and cardinal virtues under God's grace. Reason remains divine as a gift of a Christian God. Virtue remains obedience to God's laws through acceptance of His grace and is practised by refusing to transgress Christian prohibitions.
		Chapter 6 (continued) Aquinas to Buridan (AD c.1300 – c.1358)	There is no nuance of the term Modern Age. <i>Polis</i> is a cognitive gathering occasioned by human will's acceptance of God's will. Science as reasoned demonstration of natural truths is banished to irrelevant oblivion.

Table 47: (Continued)

PART TWO OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
2	<p>Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.</p>	<p>Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by unquestioning life in Christ. Science as reasoned demonstration of natural truths is banished to irrelevant oblivion. Practical Ethics is replaced by faith Ethics.</p>
		<p>Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by reasoned life in Christ. Science becomes syllogistic reasoning in dialectic and yes and no disputation predominantly within the confines of faith authority and within a developing scholastic method. Science as observation and reasoning about natural phenomena, and engagement with them, begins to reappear in the form of experimental Science. Virtue is obedience to God’s laws through acceptance of His grace and practical Ethics is living life under reasoned interpretation of those laws <i>qua</i> church doctrine. To be ethical is to act so as not to transgress Christian prohibitions.</p>
		<p>Chapter 6 Science, Ethics and <i>Polis</i>—Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)</p>	<p>There is no nuance of the term Modern Age. Metaphysics as contemplation of the one remains replaced by reasoned life in Christ. Science again is an intellectual virtue and consists of syllogistic demonstration both <i>a priori</i> and <i>a posteriori</i> in dialectic and logic within the confines of a revealed faith theology. Under grace it informs ethical choice as a prelude to beatitude and outside of grace combines with experience to inform moral choice. Science searches for truth in matters natural and theological and theology too is named a Science. Ethics becomes the contingent will’s free choice of means to ends, under the necessary will’s adherence to happiness as mankind’s end. Ethics as a practical action is occasioned through <i>synderesis</i> which consists of practical reason or prudence grasping its own first principles of natural law and reasoning through syllogistic demonstration to its own choice conclusions.</p>
		<p>Chapter 6 (continued) Aquinas to Buridan (AD c.1300 – c.1358)</p>	<p>There is no nuance of the term Modern Age. Theology finds no use for metaphysics or philosophy and reason slips its faith Ethics confines. Metaphysics as contemplation of God is expelled from theology and continues its own independent journey. Science becomes syllogistic demonstration of the true from the false in experiential domains of intuition, sensation and reason, syllogistic demonstration being predicated on fundamental premises induced from experience. Science so understood has no place in explanation of revelation and the articles of faith. Ethics becomes active adherence to God’s revealed will. Practical Ethics is thus applied theology operating through the will’s conformity to Christian teaching. Human will, rather than Aristotle’s or Aquinas’ divine reason, now separates mankind from the beasts.</p>

Table 47: (Continued)

3	Dawning of a Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 4 Science, Ethics and <i>Polis</i> and the Fall of Rational Metaphysics to Christian Theology	There is no nuance of the term Modern Age. Aristotelian practical Ethics becomes faith Ethics.
		Chapter 5 Science, Ethics and <i>Polis</i> from Augustine (AD 354 - 430) to Abelard (AD 1079 - 1142)	There is no nuance of the term Modern Age. Practical Ethics remains living of life under reasoned interpretation of the doctrine of the Church and consists in refusing to transgress Christian prohibitions.
		Chapter 6 Science, Ethics and <i>Polis</i> —Abelard (AD 1079 - 1142) to Aquinas (AD 1225 – 1274)	There is no nuance of the term Modern Age. Ethics becomes the contingent will’s free choice of means to ends, under the necessary will’s adherence to happiness as mankind’s end. Ethics as a practical action is occasioned through <i>synderesis</i> which consists of practical reason or prudence grasping its own first principles of natural law and reasoning through syllogistic demonstration to its own choice conclusions.
		Chapter 6 (continued) Aquinas to Buridan (AD c.1300 – c.1358)	There is no nuance in the term Modern Age. Ethics becomes active adherence to God’s revealed will occasioned by human will’s adherence to God’s will. Practical Ethics is thus applied theology operating through the will’s conformity to Christian teaching. Human will, rather than Aristotle’s or Aquinas’ divine reason, now separates mankind from the beasts. Practical Ethics is applied theology operating through the will’s conformity to Christian teaching.

Table 47: (Continued)

<u>Integrating Summary of Part Two</u>	
4	<p>Aristotle's unified political philosophy fractured under an intermingling of Greek heritage and Jewish revelation doctrine and the ongoing development of Christianity. By the time of Augustine (AD 354 – 430), Greek rational Ethics had been replaced by revealed faith Ethics, Christ as divine <i>Logos</i> had replaced <i>nous</i> as <i>logos</i>. Aristotle's categorical explanation of being had been replaced by divine revelation's announcement of God as the creator of the world and its beings. A personal Christian God of love became available as an alternative to a Jewish God of wrath and both had replaced an impersonal Greek god or one. A Greek city of ideas had been replaced as <i>Polis</i> by a Christian city of God. Science, now irrelevant to faith, and no longer recognised as the arbiter of truth under theoretical and practical reason, or knowledge of the four causes, but recognised as syllogistic method, is ignored to survive as best it can. Ethics inheres in overcoming the absolute sin outlined in the commandments. During the time from Augustine (AD 354 – 430) to the close of the twelfth century, church dogmatists could not wholly ignore the utility of reason which established itself as syllogistic demonstration in dialectic and disputation. Employed in this form under strict control by the authority of faith, reason begot a new Science of theology. Ethics inheres in willing oneself not to transgress Christian prohibitions and Ethics could employ reason subject to the constraints of the mysteries of faith. Science <i>qua</i> syllogistic demonstration and Ethics became compatible and reason and faith became one by virtue of faith Ethics' acceptance reason. Earlier Eriugena (AD c. 8008 – 877) had pronounced Science and faith to be the same thing. Abelard (AD 1078 – 1142) is something of a milestone of this development and at the time of his life, on the eve of the rediscovery of Aristotle's wider corpus, Science is syllogistic reasoning within dialectic and yes and no disputation about truth in theology, Ethics remains that act by which humans will themselves not to transgress Christian prohibitions, and <i>Polis</i> is a city of God. During this time dialectic and rhetoric beget logic and a re-emergence in interest in experimental Science is discernible. The compatibility of Science and faith brought forward by Anselm (AD 1033-1109) and Abelard (AD 1079 – 1142) reached its highest point with Aquinas (AD 1225 – 1274). Both Aquinas and his teacher Magnus (AD 1193 – 1280) were recipients of Aristotle's wider corpus and through their contributions Greek understandings were for a second time blended with developing Christianity but against a very different background. Under Aquinas theology and natural Science are both called Science. Science remains syllogistic reasoning but it is once again an intellectual virtue which, under grace, informs ethical choice as a prelude to beatitude, or outside of grace and from experience, informs moral choice. Science and faith are one when syllogistic reasoning, other than in questioning of the mysteries of faith, is at work in search of truth in matters natural and theological. Ethics is <i>synderesis</i>, a process by which the contingent will is guided in its free choice of means to ends by the necessary will under its adherence to happiness. In <i>synderesis</i>, practical wisdom or prudence grasps its own first principles, the precepts of natural law, and reasons through syllogistic demonstration to reach its own conclusions. A Greek good-at-what efficiency criterion again informs Ethics. To be ethical is to be good at living a righteous Christian life. <i>Polis</i> remains a city of God consisting of the sublime occasioned through infused theological and cardinal virtues under grace. The high syncretisation of Science and faith so skilfully woven by Aquinas was gradually broken down by incremental erosion and can be traced from Duns Scotus (AD c. 1270 – 1308) to Jean Buridan (AD c. 1300 – 1358). Within 76 years of Aquinas' death, compatibility of reason and faith was fractured. Theology, not reason, guided Ethics. Theology found little need for either metaphysics or philosophy. Reason had tasted its first days of freedom from faith Ethics. The will, rather than Aristotle's or Aquinas' divine reason, now separated mankind from the beasts. Science transformed into syllogistic demonstration of the true from the false in the experiential domains of intuition, sensation and reason. Ethics became active adherence to God's revealed will occasioned by the human will's adherence to God's will. The <i>Polis</i> became the cognitive gathering occasioned by the human will's acceptance of God's will. Aquinas's Christian Aristotelian system had largely been compromised.</p>

Anachronistically speaking, Buridan would have mankind maximise good, subject to a moral practical behaviour constraint. Positive economists, when they arrived much later in their numbers, were to make an art of maximising utility from points of indifference between bundles of goods. In their case, goods are alternative consumable products indifferently desired, subject to a money income constraint. Buridan might thus be seen as a pre-runner to the pleasure-pain calculus which, upon its later emergence in a form presented by Bentham (1823, p. 1), preceded the utilitarian consumer demand theory. In such theory, consumers satiate their desires through consumption of goods and services, with no moral constraint at all in the model, other than the morality of a so-called law of demand. They who can pay most for available goods get those goods, the fairness or otherwise of income distribution in the first place, and thus preclusion of many from the market as a result, being for certain kinds of economists, a let's not go there blink. Such goods of course are not the goods of Aquinas or Buridan.

In summary, within seventy-six years of Aquinas's death the high compatibility of reason and faith was in disarray. Theology, not metaphysics, was the guide to ethical action. Theology had become aloof from metaphysics and philosophy, and by default, granted them their leave. Reason had tasted its first days of freedom from faith Ethics. The universal, although a reliable concept, had ceased to exist in reality within or without the mind, the individual thing alone being real. The will, although it consults reason, and while it remains necessarily connected to mankind's final end, which connection it exercises through the power faith gives it to believe the scientifically indemonstrable, remains free to choose. Above all it is now the will, and not the divine reason of Aristotle and Aquinas, that separates mankind from the beasts. Science remains syllogistic logic.

CONCLUSION

In the syncretisation of faith and reason made possible by Magnus (AD 1193 – 1280) and Aquinas (AD 1225 – 1274), reason is superior to will so that the intellectual virtue called Science or syllogistic reasoning, under the influence of prudence and intellect, informs ethical choice. Under grace and through reason's necessary connection to its divine first principles, and the will's necessary connections to the precepts of natural law, mankind approaches its final end in beatitude. Deprived of infused virtue, Science remains tasked with informing moral action. Table 45 on page 424 and Table 46 on page 433 respectively present the nuance brought to key terms as represented by (AD 1193 – 1280) and Aquinas (AD 1225 – 1274)

and by various writers from Aquinas to Buridan (AD c.1300 – c.1358). Table 47 on page 434 carries that key terms nuance to progressive interpretation of the Thesis Proposition Statements.

Considerable change had occurred before the centenary of Aquinas' passing. Reason became emancipated from theology; theology became aloof and independent from philosophy understood as metaphysics; free will was pronounced capable of accessing knowledge of the transcendent through faith, and higher in nobility than reason; metaphysics was excluded from morality; the existence of real universals was rejected; study of individual phenomena and relationships amongst them was accepted; and, surrounding all of these, a different and robust squabbling and dissention arose within an emergence of a secular spirit in the emerging universities. Natural philosophy was in part to re-emerge as a distillate of this ferment and its re-emergence is discussed in the next chapter.

Part Three

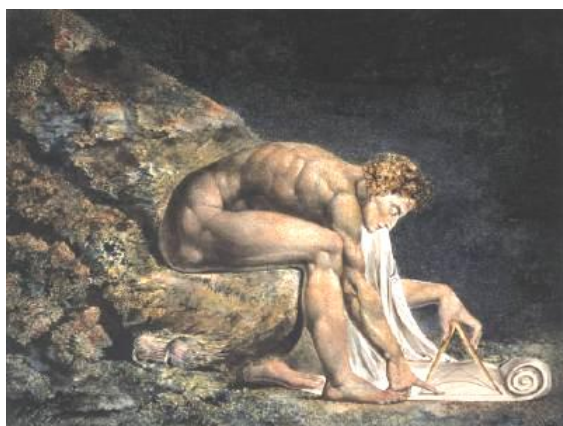
**Re-emergence of Experimental Science, Arrival of a New Political
Philosophy and Dawning of a New Era Later Called The Modern
Age**

Chapter 7

Re-emergence of Experimental Science

INTRODUCTION

Chapter 6 was concerned with a major discourse between reason and faith and it revealed that by the mid fourteenth century perceived compatibility of reason and faith was under challenge. Chapter 5 acknowledged a presence, during the thirteenth and fourteenth centuries, of a fledgling secondary counter discourse about experimental Science and natural philosophy. In this chapter I chart the re-emergence



Blake's Christian Newton is captured emerging from the chaos, only to look directly at the results of his own reason, through which he prescribed the rules by which God ordered the chaos: an Oppenheimer moment of some force?

Source: Cropped by Ian Eddington from (W. Blake, 1795). *Isaac Newton*. (copper engraving with pen and ink and watercolour). Tait Gallery, London: Web Museum of Art. (W. Blake, 1795).

of experimental Science through an examination of changes in methods of enquiry discernible in the work of notable scholars, beginning with Magnus (AD 1193 – 1280) and ending with Newton (AD 1643 – 1727).

Again, much social change occurred during this period. Scholasticism declined, the Renaissance began in now-known Italy, and so too humanism and each in its own way contributed to reformation and counter-reformation in the sixteenth century. Printing was developed in Europe circa 1450 and God spoke in official English for the first time with publication of the King James Version of the Holy Bible circa 1611. The Roman Empire ended with the fall of Constantinople to the Turks in 1453. The great sea voyages of Columbus (AD 1451 – 1506) and Magellan (AD 1480 – 1521) occurred, Elizabeth 1 (AD 1533 – 1603) assumed the throne, and as the seventeenth century progressed European colonies were established in many parts of the world. The English republic which followed the death of Charles I (AD 1600 – 1649) ended in 1660 and Shakespeare (AD 1564 – 1616), whoever he may have been, and Molière (AD 1622 – 1673) gave their literary gifts to the world. The so-called Scientific Revolution began and progressed and it, like the so-called Reformation,

helped pave a way for the dawn of a so-called age of reason or enlightenment which in this enquiry is taken to have begun with publication of Newton's *Principia Mathematica* in 1687. All of these developments are acknowledged as components of a background mix contributing to perceptions of a changing method of Science drawn from works of authors surveyed in this chapter. Nonetheless, I focus narrowly on development of experimental Science *per se*. The question of experimental Science and its implications for Science, Ethics and *Polis* and emergence of a Modern Age forms part of the discussion of Chapters 8 and 9.

A RE-EMERGENCE OF EXPERIMENTAL SCIENCE
Experimental Science in Its Infancy

Table 10 beginning on page 179 reveals that scientific observation and experimental Science were practised in antiquity. Earlier mention has also been made of Gerbert of Aurillac (AD c. 946 – 1003), Adelard of Bath (AD 1080 – 1152) and Magnus (AD 1193 – 1280) and their interest in experimental Science as a result of their possible exposure to Arab custodianship of Aristotle's heritage.

Haskins reports Magnus as “original everywhere even when he seems to copy” (1927, p. 309) and Thorndike (1923a, p. 531), attributing that quote to Jessen (1867, p. 99) leads from it to an argument that Magnus, in treating of Aristotle, drew “in large measure from his own observations, experience and classifications” (Thorndike, 1923a, p. 532). On this contention, he urges that Magnus not only went beyond Aristotle's idea of Science as knowledge of universals, but also proceeded from this “best and perfect kind of science” (*ibid.*, p. 537), that is, observation of particulars, to actually carry out experiments on those individuals (Evans, 2002, p. 127). O'Meara's testament to Magnus' independence in all matters including Science (T. O'Meara, 2011, p. 19) and his catholic interest in diverse aspects of natural philosophy (*ibid.*, p. 21) complements these earlier views of Magnus interest in natural philosophy. Pope Pius XI anointed Magnus the patron saint of natural philosophy. Books by one or more of Magnus' disciples *The Book of Secrets* (Best & Brightman, 2000, *passim*) and *Women's Secrets* (Pseudo-Albert Magnus, 1992) provide insights into the nature of observation of natural phenomena at the time and

the mix of magic, superstition, and faith in which natural philosophy was struggling to establish itself.

On experimentation, Thorndike finds Magnus able to claim that “a cicada goes on singing in its breast for a long time after its head has been cut off” (Thorndike, 1923a, p. 541). Magnus (1999, XXVI i 10) also discusses other purposive experimentation cases involving turtles, and the kind of water they drink, and ostriches and the kinds of food they eat. Magnus’ trust in observation and experience is something different in a churchman as even then, before the inquisition’s true brutality was inflicted on so-called heretics and those out of favour, punishment could be rough. Magnus names the Magi astronomers and magicians, rather than sorcerers (Thorndike, 1923a, p. 553), and challenges what the ancients have said about whales on the basis of his own observations of these animals. Apparently, he dodges punishment for his insistence on the supremacy of observation and experience over old stories on the premise that God’s divine will works through nature (ibid., p. 531). Even if Pouchet (1853, pp. 203 - 320) is a little too generous in his claim that Magnus is the champion of a re-emergence of modern scientific experimental method, he, Magnus, certainly cannot easily be disassociated from the re-emergence of it and “with extending the scope of observation to every scientific field except anatomy” (Thorndike, 1923a, p. 522) after De Blainville (1847, n.p.).

In Magnus, who refers to his co-workers as experimenters (Thorndike, 1923a, p. 548), there is not only to be found a germ of a growing distinction between study of the universal and the particular in natural philosophy, but also a distinction between natural philosophy as observation and natural philosophy as experimentation. He also relies on observation and experience as aids to revelation (ibid., p. 548). For the present purposes natural philosophy can be thought of as a domain of physics on its journey to natural Science.

Irrespective of Magnus’ championship or otherwise of modern Science, something like a modern scientific method can be seen emerging in the work of Robert Grosseteste (AD died c. 1252).

Thorndike (1923a, p. 451) finds the unknown author of a *Summa philosophiae*, ascribed by some to Grosseteste, dividing Science into a theoretical or speculative branch and a practical or operative branch which is of interest in respect of Francis Bacon discussed in Chapter 8. Thorndike associates Grosseteste (AD died c. 1253) with a mention of ‘experimenters’ (p. 439). On the basis of Roger Bacon’s eulogy on Grosseteste—Roger Bacon (AD 1214 – 1294) was his contemporary—and earlier German and English scholarship, Thorndike finds Grosseteste (AD died c. 1252) experimenting with lenses (p. 440), and engaging in experimental examination of the solar spectrum through refraction, discussing experimental findings in astronomy (p. 440), and explaining comets on the basis of a theory akin to magnetism (p. 443). He notes the approaching existence, if not the existence *per se*. of the magnifying glass, and its application to reading and lighting fires (pp. 440, 443).

Crombie (1953, pp. 52 - 66) holds a view that Grosseteste (AD died c. 1252) worked out a scientific method while writing his commentary on Aristotle’s *Posterior Analytics* (Aristotle, 1952p, 1960a) and employed it later for his own purposes. The method Crombie identifies is that Grosseteste would first, in a *resolutio*, analyse a complex phenomenon by reducing it to its components, from which identified components and principles he would frame a hypothesis, and then, in a *compositio* deduce the validity or otherwise of the hypothesis by testing its consequences against experience or through practical experiment.

Losee (1972, p. 31) interprets the *resolutio* and *compositio* as affirmations of Aristotle’s inductive–deductive method while Serene (1979, p. 97) finds Grosseteste (AD died c. 1252) revising Aristotle’s method. Dales (1961, p. 382) finds Grosseteste using experiment in the *resolutio* and also to frame the hypothesis for the *compositio*. After Grosseteste, writers referred to Aristotle’s scientific method as the method of resolution and composition (Losee, 1972, p. 31). Crombie (1953) finds Grosseteste using this method to investigate the spectrum colours. Grosseteste’s *resolutio* acknowledges that colours are found in rainbows, mill-wheel and boat-oar spray, and sunlight travelling through water filled spheres (*ibid.*, pp. 64 – 66). In his *compositio* Grosseteste acknowledges that spectra are related to transparent spheres, that different colours result from light refracted through different angles, and that

colours so produced lie on the arc of a circle (ibid., pp. 64 – 66). *Grosseteste's Rules* (1890, pp. 121 - 150) provides insights into hospitality management and animal husbandry emerging in their modern senses within economics as household management in a Aristotelian sense (ibid., p. 121 – 150).

Crombie (1953, p. 38) discovers in Grosseteste (AD died c. 1252) the natural philosopher reforming the calendar, associating tides with the action of the moon (ibid., p. 94), and using mathematics to explain laws of optics, which laws themselves he, Grosseteste, took to be the “foundation of physical reality” (ibid., p. 51). Optics, which deals with light, that substance associated with Godhead at least since Plato, continued to have a spiritual dimension even beyond Grosseteste’s time. Crombie (1996) finds Grosseteste (AD died c. 1252) arguing in *De Natura Locorum* that “by the power of geometry, the careful observer of natural things can give the cause of all natural effects by this method” (ibid., p. 45) and in *De Lineis* that “all causes of natural effects have to be expressed by means of lines, angles and figures, for otherwise it would be impossible to have knowledge of the reason for those effects” (ibid., p. 45). Mathematics, understood as geometry, is making a more determined return appearance. Perry (1871, pp. 43 - 44) attests to Grosseteste’s wide involvement with natural philosophy, naming him a precursor to Roger Bacon (AD 1214 – 1294).

Grosseteste (AD died c. 1252), in some respects, was alive to the efficiencies to be

Blaise Pascal (AD 1623 – 1662) on Verification and Falsification
Car quelquefois on conclut un absurde manifeste de . . . negation [ca va, negation d’une hypothese], et alors l’hypothese est veritable . . . ; ou bien on conclut un absurde manifeste de son affirmation, et lors l’hypothese est tenue pour fausse; et lorsqu’on n’a pu encore tirer d’absurde, ni de sa negation, ni de son affirmation, l’hypothese demeure douteuse; de sorte que, pour faire qu’une hypothese soit evidente, il ne suffit pas que tous les phenomenes s’en ensuivent, au lieu que, s’il s’ensuit quelque chose de contraire a un seul des phenomenes, cela suffit pour assurer de sa faussete. *Reponse de Blaise Pascal au Très Bon Révérend Père Noël, Recteur, de la Société de Paris, à Paris.* (Pascal, 1923, p. 99, my square brackets)

found in once-only falsification rather than repetitive verifications and hello again Karl Popper and falsification (Popper, 2005, pp. 15 - 19). In situations where more than one set of premises can account for an observed effect then it may prove expedient to disqualify the least likely premises by finding just one instance in which a predicted effect is

absent or false. If the predicted effect is false or absent then the premise is said to be false. This method of falsification is now known in logic as a *modus tollens* (A. C.

Crombie, 1990, p. 54) and both Crombie (*ibid.*, p. 54, 133) and Losee (1972, p. 37) note that the method was available in antiquity but that Grosseteste’s achievement was to extend its use to evaluation of scientific procedure.

Experimental Science Enters Its Adolescence

Roger Bacon (AD 1214 – 1294) was to use Grosseteste’s method in further articulation of the rainbow (R. Bacon, 1962, pp. 588 - 596). Bacon himself outlines

Table 48: Roger Bacon’s Prerogatives of Experimental Method

#	Bridge’s Expression of the Prerogative	Bacon’s Words about the Prerogative
1	Experimental Science reaches results which take their place in existing Sciences, but which are entirely new.	Bacon’s first prerogative is that experimental method is a necessary complement to those Sciences whose “conclusions are reached by reasoning drawn from the principles discovered” (R. Bacon, 1962, p. 578) which Sciences, “if they should have a particular and complete experience of their own conclusions, they must have it with the aid of this noble science” (<i>ibid.</i> , p. 578).
2	Experimental Science creates new departments of Science.	Bacon states his second prerogative in the form of a general statement about the place of experiment: “Hence in the first place there should be readiness to believe, until in the second place experiment follows, so that in the third reasoning may function.” (R. Bacon, 1962, p. 615).
3	Experimental Science creates new departments of Science.	The third prerogative “this science experimental without restriction” (R. Bacon, 2010, p. 621), is that experiment should apply to all natural philosophy and, by inference to astronomy which, studied the heavens, God’s abode,—a brave suggestion indeed, one of his exaggerated claims being that the third prerogative could unlock the literal truth of the scriptures (<i>ibid.</i> , p. 631). A reading of his fabulous treatment of the third prerogative—it will allow such wondrous things (<i>ibid.</i> , pp. 327-364) ¹ —shows, in addition to subsequent historical realisation of predictions emerging from his fertile imagination, just how much an objective and workable experimental method was wanting, even in his own case.
<p>Notes: (1) Some wonders are cited in his disputed <i>Letter on Secret Works of Art and of Nature and on the Invalidity of Magic</i> (R. Bacon, 2015, n. p., Ch. IV): self-propelled horseless chariots, a wing flapping machine for flying, instruments to allow humans to walk on the bottom of the ocean, used by Alexander the Great, says Bacon, and bridges without pillars or support able to span rivers (<i>ibid.</i>, Ch. IV). Submarines, flying machines, locomotives, steamboats, arch and suspension bridges are names used to describe such wonders as they came to pass after Bacon’s time, Bacon’s speculations having been made before the travels of Marco Polo, the rediscovery of America, and the brilliance of Da Vinci.</p> <p>Source: Constructed by Ian Eddington from Bacon, R. (1962). <i>The Opus Majus of Roger Bacon by Robert Belle Burke. Vol. 2.</i> (pp. 578, 615, 631, 327 - 364). New York: Russell and Russell Inc.; Bridges, J. H. (1914). <i>The Life and Work of Roger Bacon: An Introduction to the Opus Majus by John Henry Bridges.</i> (p. 157). London: Williams and Norgate; Bacon, R. (2015). <i>Letter on Secret Works of Art and of Nature and on the Invalidity of Magic.</i> (Ch. IV). Princeton University. (R. Bacon, 2015, n. p., Ch. IV).</p>		

his approach to attainment of factual knowledge in that same work wherein, *inter alia*, through outlining three prerogatives of experimentation outlined in Table 48 on page 446, he explains the benefits of experimental Science.

Bridges, Bacon’s translator, advises that a prerogative as Bacon uses the word, is best understood as a ‘leading feature’ (Bridges, 1914, p. 157). Losee (1972, p. 35) depicts the first prerogative as a significant advancement on Aristotelian inductive-deductive method. He also compliments Grosseteste’s method of finding the repeated presence of an effect in the absence of all possible causes of the effect but one (Losee, 1972, p. 31 - 32, 35).

Bacon’s own words express the general sense in which he advocates the efficacy of experimentation. His novelty is that he began a formal commentary on the process of experimentation, a process that is probably as old as humanity. This process, now this Science of experimentation, “alone teaches us how to view the mad acts of magicians, that they may be not ratified but shunned, just as logic considers sophistical reasoning” (R. Bacon, 1962, p. 587). It has substantial benefits. For example:

This mistress of the speculative sciences alone is able to give us important truths within the confines of the other sciences, which those sciences can learn in no other way. Hence these truths are not connected with the discussion of principles but are wholly outside of these, although they are within the confines of these sciences, since they are neither conclusions nor principles. Clear examples in regard to these matters can be given; but in what follows the man without experience must first seek a reason in order that he may first understand, for he will never have this reason except after experiment. Hence in the first place there should be readiness to believe, until in the second place experiment follows, so that in the third reasoning may function. For if a man is without experience that a magnet attracts iron, and has not heard from others that it attracts, he will never discover this fact before an experiment. Therefore in the beginning he must believe those who have made the experiment, or who have reliable information from experimenters, nor should he reject the truth, because he is ignorant of it, and because he does not arrive at it by reasoning. *The Opus Majus of Roger Bacon by Robert Belle Burke* (R. Bacon, 2010, p. 615 - 616)

Roger Bacon took more words to say what today is said in fewer words: theory and opinion need to be validated against experience and experiment. Smith (1856, pp.

Scotus’ Method of Agreement		
Instance	Possible Causes	Effect
1	ABCD	e
2	ACE	e
3	ABEF	e
4	ADF	e
Source: Modified by Ian Eddington from Losee, J. <i>An Historical Introduction to the Philosophy of Science</i> . (p. 33). London: Oxford University Press. (Losee, 1972)		

103 - 104) finds Aristotle’s four elements alive and well in Bacon whose first matter, ‘yle’, is created. ‘Yle’ is the basis of all the four elements and Bacon, like Magnus before him, accepts that one element can be changed into another. Smith,

in discussing Bacon’s use of mathematics as arithmetic in analysis of synthesis of bodies from the four elements, claims that Bacon’s syntheses are “the earliest examples ... and the fullest example[s] I know of early analysis, and perhaps the very first in which numbers are used in connection with elements. They are intellectual strivings after quantitative analysis” (R. A. Smith, 1856, p. 144, my square brackets). After the death of his patron, Pope Clement IV (AD c.1195 – 1268), Bacon’s atonement for his independent stance was forced through years of confinement.

An impressive scientific experiment was made by Theodoric of Freiberg (AD 1250 - 1310) in further investigation of the rainbow. Theodoric produced the solar spectrum through experimentation with water-filled globes in sunlight and explained that the colours of the rainbow were produced by refraction of sunlight through raindrops (Lee & Fraser, 2001, pp. 161 - 164; D. Lindberg, 1976, pp. 435 - 441; Theodoric of Freiberg, 1974, pp. 435 - 441).

Duns Scotus (AD c.1270 – 1308), like Grosseteste (AD died c. 1252) and Roger Bacon, (AD 1214 – 1294) is also a harbinger of what is now understood in the modern sense as scientific method. For example, Voss (2006, pp. 212 - 213) explains

Ockham's Method of Difference		
Instance	Possible Causes	Effect (e)
1	ABCD	e
2	BCD	e not present

Source: Adapted by Ian Eddington from Losee, J. (1972). *A Historical Introduction to the Philosophy of Science*. (p. 34). London: Oxford University Press (Losee, 1972)

Duns Scotus's view at *Quaestiones Metaphysicae* I 4 49 that causes might be found, and examines Duns Scotus's claim that it is possible to set up an experiment to determine the causes of phenomena observed to occur frequently in nature. Such

causes are fixed one way causes, free will being the only free cause, and Voss (2006, p. 312) invokes Weinberg's citation of Duns Scotus wherein Duns Scotus claims "that no experimental inference can yield a conclusion free from doubt *Quaestiones Metaphysicae* I 4 24" (Weinberg, 1965, p. 139). Both Voss (2006, p. 317) and Losee (1972, pp. 32 - 34) address Duns Scotus's Method of Agreement which might provide evidence of which particular one of a number of circumstances or causes results in an observed effect. Losee's explanation, extracted from Wolter's translation of Duns Scotus (1962, p. 109) reveals that the Method of Agreement involves finding the one circumstance that is present every time the regularly occurring effect is observed in nature. In the table for Scotus on page 447, the possible cause A, which is present in all observed occurrences of the observed effect *e* is said to be in aptitudinal union with *e*. The claim being made by Duns Scotus is that, for example, a particular herb can have a bitter taste and not that every sample of it will have a bitter taste (Duns Scotus, 1962, pp. 110 - 111; Losee, 1972, p. 33).

William of Ockham (AD 1280 – 1349) agrees with Duns Scotus that induction cannot progress in certainty beyond discovery of aptitudinal unions. Unlike Duns

Scotus, Ockham approaches such discovery through difference rather than agreement and his Method of Difference as it is now known is a process in which aptitudinal



Zoroaster holds the sphere of the stars and Ptolemy is likely to be the one holding the globe of the earth. Apelles, modelled on Raphael, looks the viewer in the face. Protogenes on the right is modelled on either Puragino (AD c.1446 – 1523), or Timoteo Viti (AD 1469 – 1523) or Il Sodoma (AD 1477 – 1549).

Source: Detail cropped by Ian Eddington from Raffaello. (1509). (artist). *The School of Athens*. (fresco). Stanza della Segnatura, Vatican City: Web Gallery of Art. (Raffaello, 1509).

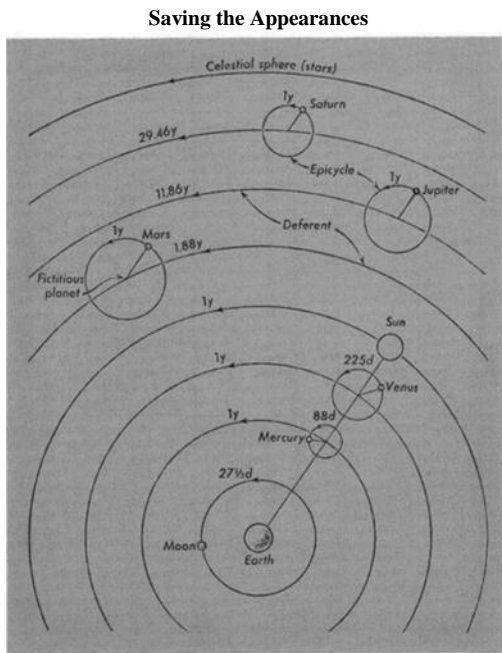
union is found when an effect coincident with a number of suspected possible causes remains when all but one of the possible causes have been removed. Its weakness, known to Ockham, is that the actual cause of the observed effect in question may be other than one of the suspected possible causes. For example, in the table for Ockham on page 448 the real cause could be Z elsewhere and not included in ABCD. A variation on this weakness is well illustrated by Wilhelm Roentgen's chance discovery of X-rays in

1895. Roentgen (AD 1825 – 1923) enjoyed some serendipity in his discovery in which an activity within a controlled experiment resulted in a fluorescent effect in an apparatus having no part in the experiment.

Perhaps the growing power of observation and experimental method is best illustrated through its development by Nicholas of Autrecourt (AD c.1299 – c.1369) who like Roger Bacon (1962, V 1 d.9 Ch.2, p. 485) entertained the existence of the vacuum (Weinberg, 1965, p. 161). Autrecourt appears to have arrived at Hume's problem before Hume (AD 1711 - 1766): "from the fact that one thing is known to exist, it cannot be evidently inferred that another thing exists" (Autrecourt quoted by Weinberg, 1948, p. 31). Furthermore, if a natural cause is defined as "that which produced in the past as in many cases and up to the present will produce in the future, if it remains and is applied" (ibid., p. 69) then there is a problem because by "allowing that something was produced as in many cases, it is nevertheless not known that it ought to be thus produced in the future" (ibid.). David Hume (AD 1711 – 1776), who could not solve his own question (Hume, 1902, p. 33, Section IV, Part II, Para. 29) of how it might be valid to argue from induction and attendant inference of past instances to future generalisations of those inferences, was thus only one step

away. Hume's impasse, known now as Hume's problem, appears to be still playing itself out today in the epistemological uncertainties of post-modernism.

Each of the incremental changes in scientific method discernible through the works discussed above is particular in itself, but when taken together they represent a clear challenge to Aristotle's legacy. There were also soon to emerge bitter disputations



"The Ptolemaic system as represented in its simplest form. Planets were supposed to revolve with uniform speed in a small circle, the deferent whose center was near the earth. Note that Mercury, Venus and Sun were always in a straight line. Attempts to justify actual observations made many more circles necessary" (D. Knight, 1965, p. 138).

Source: Cropped by Ian Eddington from Knight, D. (1965). *Copernicus: Titan of Modern Astronomy*. (p. 138). New York: Franklyn Watts. (D. Knight, 1965).

other astronomer-cosmologists, Johannes Kepler (1571 - 1630) and Galileo Galilei (AD 1564 - 1642).

Experimental Science Enters Its Adulthood

Of the three astronomer-cosmologists, Galileo, more than the others, leans towards being modern in the sense of Science understood as practice of a scientific method employed under twentieth century positivism. The Modern Age is taken to be the period from the 1650s to the 1950s, that is from the time of Thomas Hobbes (AD 1588 – 1679) say, until the unfolding emergence of post-modernism in the first half of the twentieth century. Modern Science is hallmarked by culmination of its

between those proffering the Aristotelian or Ptolemaic explanation of the movement of the planets and those proffering a new explanation put forward by Nicholas Copernicus. (AD 1473 – 1543). The systems of Aristotle and Ptolemy were geocentric or earth-centred while that put forward by Copernicus was heliocentric or sun-centred. Given that the Church had based much of its theology on Aristotle's geocentric cosmology it would be some time before the truth of the sun-centred system would prevail. This chapter's discussion of the development of experimental Science is continued through examining the methods used by Copernicus (AD 1473 - 1543), and two

method, the so-called positive scientific method, which in its own right is a product of the Modern Age.

Galileo (AD 1564 – 1642), who affirmed Aristotle’s view that Science is a two stage process: from observation to induced general principles and back to observations of those induced principles and any deductions based upon them, is widely recognised as one of the founders of modern Science. In 1609, Galileo became the sixth member of the first Scientific Society, the Accademia dei Lincei, which was founded in 1603 only to close in 1630.

Both Copernicus (AD 1473 – 1543) and Kepler (AD 1571 – 1630), like Galileo (AD 1564 – 1642), were men of devout Christian faith. Copernicus was a little like an



Questions arise about whether the artist used a composite of models for his Brahe, and about his artistic licence in depicting instruments.

Source: Cropped by Ian Eddington from Ender. (c. 1855). (artist). *Rudolph II and Tycho Brahe at the Hradschin in Prague*. (oil on canvas). Oxford: Museum of the History of Science. (Ender, c. 1855).

academic on permanent sabbatical with the luxury this provided for research purposes. Kepler was often wretched and poor. Both men were wary of the Church— Copernicus ensured that his *De Revolutionibus* (Copernicus, 1952) was published posthumously and Kepler remained fearful as a result of claims that his mother was a witch. Both Copernicus and Kepler were Pythagorean: they believed that mathematical laws governed the universe (Field, 2007, n.p.). Kepler was a profoundly religious man who believed that truth about God’s created real world could be obtained through God-given reason. These beliefs allowed his cognitive pursuit of actual planetary paths (Kepler, 1952a, pp. 845 - 851). Copernicus, too, believed that a philosopher’s “loving duty to seek the truth in all things, in so far as God has granted that to human reason; nevertheless I think that we should avoid opinions utterly foreign to rightness” (1952, p. 506).

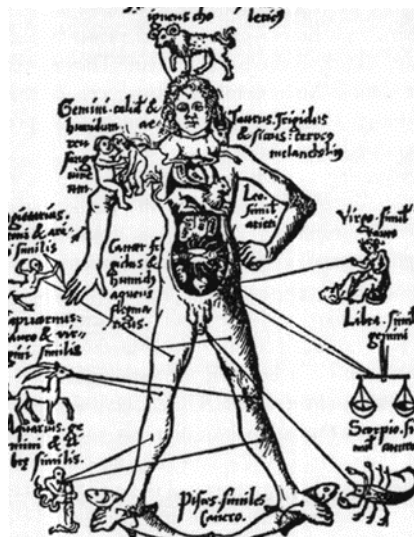
Unlike Galileo, Copernicus and Kepler were part of a working tradition known as saving-the-appearances. Under this tradition the observed appearances of the heavens were to be saved, that is recorded, within a classical or Aristotelian caveat: “all planetary appearances must be accounted for by the uniform motion of the planet in a circle with or without the uniform motion of this circle’s centre on another circle called its deferent, and so on to any required complication” (Teliaferro, 1952, p. 2). Geometrical illustrations of this convention can be found in the *Almagest* (Ptolemy, 1952, p. 392) and *De Revolutionibus* (Copernicus, 1952, p. 769).

Within this general principle, later called an axiom by Copernicus, all manner of theory articulation could take place. And it did: Copernicus’ adoption of a heliocentric model brought a new and rigorous application of the latent heliocentric ideas of antiquity. Such ideas might, for example, be drawn from Plato’s *Timaeus*

(Plato, 1925h, 1952w) and perhaps (Eastwood, 1992, pp. 233, 256; van der Waerden, 1978, pp. 167 - 182) from Herakleides of Pontus (BC 390 – 310). Heath argues that Herakleides had postulated that Mars and Venus revolve around the sun (T. L. Heath, 1921, pp. 212 - 217) but Eastwood urges against heliocentricity of any kind in Herakleides (Eastwood, 1992, p. 256).

Tycho Brahe (AD 1546 – 1601) had the moon and sun revolving around the earth and Mercury, Venus, Mars, Jupiter and Saturn revolving around the sun. *Dynamic Diagrams* have constructed electronic moving models of the Copernican and Tychonian systems (Dynamic

Dante’s View of the Universe



Man, a microcosm of the heavens, from an early sixteenth century drawing

Source: Cropped by Ian Eddington from Knight, D. (1965). *Copernicus: Titan of Modern Astronomy*. (p. 43). New York: Franklyn Watts. (D. Knight, 1965, p. 43)..

Diagrams, 2010). Both Copernicus and Kepler wrote within the ‘architectonic’ convention that man and earth were respectively microcosms or little-heaven mirror images of the macrocosm of the heavens. Even Galileo, to some extent, was trapped in saving-the-appearances. While Galileo named himself Copernican in a letter he wrote to Kepler as early as 1597 or 1598 (Peruzzi, 2010, p. 20) he, Galileo,

continued to teach the Ptolemaic earth-centred system until 1610 and his discovery of Jupiter’s satellites. Galileo was a man of the Church, having begun his education in a Camaldolese order outside of Florence and continuing on in a school in Florence



Source: Cropped by Ian Eddington from Matejko. (1838 - 1893). (artist). *Astronomer Copernicus, Conversation with God.* (oil on canvas). Krakow: Jagiellonian University Museum. (Matejko, 1838-1893).

run by that order. Both of his daughters took Holy Orders and Galileo’s remains finally found rest in the Basilica of Santa Croce in Florence— another story in itself.

Saving-the-appearances goes back via Ptolemy (c. AD 100 – 170) to Aristotle. Whereas, in respect of the sub-lunar domain, Aristotle believed in

the physical reality of his earth-centred cosmology, Ptolemy preferred to save the appearances of planetary motion through using mathematics, that is geometry plus

observations and calculations, because it bridged the physical to the theological, being something that “in essence falls, as it were, between the two” (Ptolemy, 1952, p. 5). As noted both Copernicus (AD 1473 - 1543) and Kepler (AD 1571 – 1630) worked in this tradition and both, by their own admission, like Aristotle (BC 384 – 322), and like Galileo (AD 1564 – 1642), believed in physical reality, and the laws of their systems.

None of the three challenged God as the final cause of the objects and perceived relationships among them.

Interpreting final cause outside of God was still off limits but reasoned-sense access to nature had been established under scholasticism. Under this heritage catholic and protestant astronomers alike entwined their reason and the laws of nature it produced, with theology, their faiths. From this perspective I view Galileo’s altercation with church authorities first as a clash between two competing paradigms in astronomy, and secondly as a clash between scientific and clerical personalities. I do not treat the



altercation as an intended attack by Galileo on the truth or otherwise of revealed faith and his relationship with the Church was not always hostile. For example, in 1588 in Rome, Galileo gave a celebrated lecture on the location and dimensions of Hell in Dante's *Inferno*.

Galileo was also a man of the world: he traded with the military establishment selling his telescope to the Venetians as a device that would give hours of advantage over the enemy. On the competing paradigms approach it was articulation within this Aristotelian-Ptolemaic tradition that led to the Copernican split: a battle between competing saving-the-appearances and Pythagorean explanations rather than differences between two kinds of knowledge, one Science the other faith. It was eventually to become something of a political conflict between Science and faith.

The saving-the-appearances crisis is formalised in Andrew Osiander's contested letter-section of the preface to *De Revolutionibus* (Osiander, 1952, pp. 505 - 506) and can be seen working itself out in Kepler's so-called sleepwalking discovery of the laws of planetary motion, and in a political ménage à trois involving Cardinal Robert Bellarmine (AD 1542 – 1621), former Cardinal Inquisitor in the burning of Giordano Bruno (AD 1548 - 1600), Galileo, and the condemnation of the Copernican system under Pope Paul V (AD 1552 – 1621). Wallis catches a sense in which Copernicus' *De Revolutionibus* had been received "those who received it favourably numbered astronomers and ecclesiastics; those who received it unfavourably numbered ecclesiastics and astronomers" (Wallis, 1952, p. 489). Martin Luther's comment catches the complexity of literal interpretation of conflicting parts of the scriptures: "The fool will upset the whole Science of astronomy, but as the Holy Scripture shows it was the sun and not the earth which Joshua ordered to stand still" (Luther quoted in Wallis, 1952, p. 490). The Catholic Church, which Luther opposed, had acknowledged Job's explanation of God as the one "who shaketh the earth out of her *place* [italics added] and the pillars thereof tremble" *Job* 9.6 (Holy Bible, 1932, my square brackets). This difference of opinion was a difference between theologians within a reasoned theology that had grounded itself in Aristotelian cosmology.

An examination of the roles of Osiander (AD 1498 – 1552) and Copernicus (AD 1473 - 1543), in playing out the battle between Ptolemy's appearances and

Pythagoras' laws, can, in hindsight, bring understanding about the nature of the constrained astronomy they may be said to have been practicing. Osiander explains saving-the-appearances thus:

For it is the job of the astronomer to use painstaking and skilled observation in gathering together the history of the celestial movements, and then—since he cannot by any line of reasoning reach the true causes of these movements—to think up or construct whatever causes or hypotheses he pleases such that, by assumption of these causes those same causes can be calculated from the principles of geometry for the past and for the future too. (Copernicus, 1952, p. 505)

His final sentence adds some humour:

And as far as hypotheses go, let no one expect anything is certain, lest, if anyone take as true that which has been constructed for another use, he go away from this discipline a bigger fool than when he came to it. Farewell. (Copernicus, 1952, p. 506)

Copernicus' death in 1543 precludes posterity from knowing the extent to which Osiander's clever appeal to a patron's vanity may have made life easier for him, Copernicus. All the same, Copernicus makes no pretence about the realities he believes he is investigating. It is very clear from his feisty *Preface* and *Dedication to Pope Paul III* (Copernicus, 1952, pp. 506 - 509) that Copernicus has attempted to capture the truth about the movement of actual existing objects, that he works from observations of those objects, and that in no sense does he allow that he is constructing, as he pleases, a world to investigate. In the preface he reminds His Holiness that it is rumoured that there is “no medicine for the bite of a sycophant” (ibid, p. 509) and appeals to him, mathematician to mathematician, for protection against those who might attack him, those who due to “natural stupidity” (ibid, p. 506) hold in philosophy the position that “drones hold amongst bees” (ibid, p. 506).

Mathematics is written for mathematicians and among them, if I am not mistaken, my labours will be seen to contribute something to the ecclesiastical Commonwealth, the principate of which your Holiness now holds. (Copernicus, 1952, p. 509)

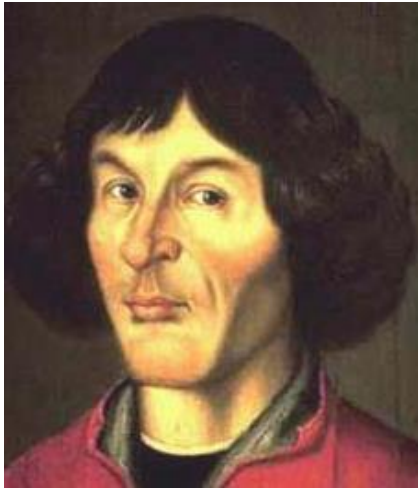
Copernicus informs His Holiness that the diverse disagreement between mathematicians about the “form of the world and the certain commensurability of its parts” (ibid p. 507) results primarily from their method and that had they “followed sure principles” (ibid p. 507) they would have been able to know that “if the hypotheses they assumed were not false, everything which followed from the

hypotheses would have been verified without fail” (ibid, pp. 507 - 508) and that as a consequence:

philosophers, who in other respects had made a very careful scrutiny of the least details of the world, had discovered no sure scheme for the movements of the machinery of the world, which had been built for us by the Best and Most Orderly Workman of all. (Copernicus, 1952, p. 508)

Copernicus ironically notes that he thought that he too, like others of false method before him, might be allowed to “construct circles as [they he] pleased in order to demonstrate astral phenomena” (ibid, p. 508, my square brackets, my strikethrough).

Kepler’s role in the controversy of saving the appearances is told by Arthur Koestler (AD 1905 - 1983) in *The Sleepwalkers* (Koestler, 1989, pp. 227 - 411). Koestler



Source: Cropped by Ian Eddington from Anonymous. (c. 1510). (artist). (possibly oil on wood). *Nicolavs Copernicvs*. (possibly sixteenth century). Presently at the Town Hall, Torun, Poland: Iconography of Ptolemy’s Portrait. (Anonymous., circa 1510).

(ibid., pp. 11, 340) likens Copernicus (AD 1473 - 1543), and Kepler (AD 1473 - 1543) to sleepwalkers—astronomers who discovered correct laws by incorrect methods and reasoning. In this process, successive mistakes cancel one another out, or applications of false premises or beliefs do not prevent discovery of correct scientific natural laws.

For Kepler, faith and Science are not mutually exclusive. There is no faith and Science divide but rather a physical world was there to know by a variety of means, including through the senses and understanding. God’s world was knowable and, *inter alia*, Kepler, the sleepwalker, used Pythagorean regular solids and so-called harmonies of the spheres, as well as Tycho Brahe’s (AD 1546 – 1601) observations, to make his discoveries. Still, the times were troublesome: Kepler was Lutheran and in the 1500’s the Catholics had turned the inquisition against the Protestants. Like Osiander before him, Kepler was prudent to agree that his cosmology might just as easily be regarded as a construct. This is best seen in his *To the Reader* (Kepler, 1952c, pp. 845 - 851) preface in *Epitome of Copernican Astronomy* (Kepler, 1952a) in which, after making sure to align himself with Aristotle, Copernicus and Tycho Brahe, Kepler states:

I grant that this work of mine, the Harmonies, is nothing except as it were, a certain picture of the edifice of astronomy, and though it may be erased at the pleasure of him who spits on it, nevertheless the house called astronomy stands by itself. (Kepler, 1952a, p. 851)

This now-you-have-it–now-you-don’t admission of the reality of the universe and its knowable laws is typical of the read-what-you-will-between-the-lines method of survival required by the context and times. Again, Copernicus and Kepler believed in the independent existence of the physical world they investigated. Copernicus established the truth of the sun-centred system and Kepler formulated laws of



Source: (Possibly Jan Brueghel the Elder, circa 1622-29, and/or his studio). (artist). *Art Meets Science* (J. Gorman, 2009). Cropped by Ian Eddington from Gorman. (2009). *The Linder Gallery*. (oil on copper). Private Collection, New York. Gorman argues that the male *qua* Science is modelled on Kepler.

revolution of the planets. As mathematicians they were certain of the natural truth expressed in their laws.

Galileo’s role in saving the appearances controversy is known. In his 1616 *Letter to the Grand Duchess* (Favaro, 1968, pp. 309 - 348; Galileo, 1616, n.p.;

1957b, pp. 173 - 216) he argued for non-literal interpretation of the Bible in cases where facts about the physical world known through mathematics contradict literal interpretation. Even his statement in this letter to the effect that he held “the sun to be situated motionless in the centre of the revolution of the celestial orbs while the earth revolves about the sun” (ibid., n. p.) was known to the Inquisition but it did not bring him down. Rather, his downfall came when, after gaining permission from Florence rather than Rome, he published his *Dialogue Concerning the Two Chief Systems of the World - Ptolemaic and Copernican* (Galileo, 1661, 2001). In this book, he placed Pope Urban VIII’s views in the mouth of Simplicio, the ridiculed dogmatic Aristotelian discussant.

Action to bring Galileo before the Inquisition appears to have then come quickly and it was not until 1992 that the Catholic Church admitted that “errors had been made in the case of Galileo” (John Paul II, 1992, II 12).

Like Kepler, Galileo shared a belief that God-given reason could provide access to



Source for left picture: Either Domenico Robusti also known as Tintoretto (died AD 1594) or Apollodoro (AD 1531 – 1612) , artists. Cropped by Ian Eddington from *Gallileus Gallileus* Mathus. (1602 - 07). (oil on canvas). London: National Maritime Museum. The image catches Galileo in his early forties as Master of Mathematics at the University of Padua. It is the earliest known portrait of Galileo.

Source for right picture: (Cecconi, 1879). (artist). Cropped by Ian Eddington from *Sustermans of Galileo /Copied by N. Ceco [mi (?)]/ 1879*. (oil on canvas). London: British Maritime Museum. The painting was made in 1879 as a copy of the original made by Sustermans in 1636, which now hangs in the Uffizi, Firenze. The painting captures Galileo during his period of house arrest which began in 1633. Galileo died in 1642.

truth about the real existing world.

Galileo, who does “not feel obliged to believe that the same God who endowed us with sense, reason, and intellect intended us to forgo their use” (Galileo, 1616, n. p.), was forthright in his statements.

For example, in a margin note on his personal copy of the *Dialogue Concerning the Two Chief Systems of the World - Ptolemaic and Copernican* (Galileo, 1661,

2001), Galileo clearly indicates his belief that the route to objective certainty begins with sense knowledge:

And who can doubt that it will lead to the worst disorders when minds created free by God are compelled to submit slavishly to an outside will? When we are told to deny our senses and subject them to the whim of others? When people devoid of whatsoever competence are made judges over experts and are granted authority to treat them as they please? These are the novelties which are apt to bring about the ruin of commonwealths and the subversion of the state. (Galileo quoted in J. R. Newman, 1956, p. 733)

Galileo is in no doubt about the extent to which humans can know nature’s laws:

SALV. [Representing the views of Galileo himself.] You put the point very sharply, and to answer the objection it is best to have recourse to a philosophical distinction and to say that the human understanding can be taken in two modes, the *intensive* or the *extensive*. *Extensively*, that is, with regard to the multitude of intelligibles, which are infinite, the human understanding is as nothing even if it understands a thousand propositions; for a thousand in relation to infinity is zero. But taking man’s understanding *intensively*, in so far as this term denotes understanding some proposition perfectly, I say that the human intellect does understand some of them

perfectly, and thus in these it has as much absolute certainty as Nature itself has. Of such are the mathematical sciences alone; that is, geometry and arithmetic, in which the Divine intellect indeed knows infinitely more propositions, since it knows all. But with regard to those few which the human intellect does understand, I believe that its knowledge equals the Divine in objective certainty, for here it succeeds in understanding necessity, beyond which there can be no greater sureness. (Galileo quoted in Drake, 2001, p. 103, my square brackets)

Consequently, on the basis of a note written in his old age on the margin of his own copy of the dialogues, he is confident to advise the clerics:

Take note, theologians, that in your desire to make matters of faith out of propositions relating to the fixity of sun and earth you run the risk of eventually having to condemn as heretics those who would declare the earth to stand still and the sun to change position - eventually, I say, at such a time as it might be proved that the earth moves and the sun stands still. (Galileo quoted in Drake, 2001, p. 75)

These quotations demonstrate Galileo's trust of the sense faculty and God-given human reason. There is no doubt about the key which opens reasoned understanding of God's natural world:

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures without which it is humanly impossible to understand a single word of it; without these one is wandering in a dark labyrinth. (Galileo, 1957a, pp. 237 - 238)

The Assayer (Galileo, 1623/2015) from which the quote comes was published in 1623, the fifty-ninth year of Galileo's life. Galileo's most intense mathematical work appears in his *Discourses and Mathematical Demonstrations Concerning the Two New Sciences* (Galileo, 1952) a work written after his trial 1633, and sometime after the death of his daughter, Virginia, Sister Maria Celeste, in 1634, that is, a work written under house arrest during the last 8 years of his life.

Many aspects of Galileo's life continue to be of interest to scholars including his scientific method (De Santillana, 1976; Drake, 1957, 1999, 2001, 2003; Gower, 1997; Hergenhahn, 2009; Machamer, 1998). While there is general agreement amongst these scholars that the origins of modern Science can be found in Galileo's work, there is a wide variety of opinion about the specific nature of his method (Wisn, 1979, p. 1). It is clear from his physics that Galileo distinguishes non-scientific explanations from scientific explanations. The key to this understanding is

to be found in Galileo's conviction earlier discussed that the laws of nature are written in mathematics and his complementary assertion that therefore only those aspects of substance that can be counted or measured in some way are pertinent to understanding of nature and its laws.

Now I say that whenever I conceive any material or corporeal substance, I immediately feel the need to think of it as bounded, and as having this or that shape; as being large or small in relation to other things, and in some specific place at any given time; as being in motion or at rest; as touching or not touching some other body; and as being one in number, or few, or many. From these conditions I cannot separate such a substance by any stretch of my imagination. (Galileo, 1957a, p. 274)

And of other Aristotelian accidents:

But that it [a substance or body] must be white or red, bitter or sweet, noisy or silent, and of sweet or foul odour, my mind does not feel compelled to bring in as necessary accompaniments. Without the senses as our guides, reason or imagination unaided would probably never arrive at qualities like these. Hence I think that tastes, odors, colors, and so on are no more than mere names so far as the object in which we place them is concerned, and that they reside only in the consciousness. Hence, if the living creature were removed, all these qualities would be wiped away and annihilated. But since we have imposed upon them special names, distinct from those of the other and real qualities mentioned previously, we wish to believe that they really exist as actually different from those. (Galileo, 1957a, p. 277, my square brackets)

Size, shape, motion, rest, and number are objective accidents existing independently of mankind—they are Galileo's primary qualities. Colour, odour, taste sound and tactile properties became subjective and exist nowhere independent of mankind. We have met a different classification of such phenomena in Aristotle's categories on page 207. Galileo separated the scientific from the non-scientific by limiting the domain of physics to primary qualities. Aristotelian final cause is thus expelled from Science as physics but this should not be interpreted as a rejection of God, now the final cause of all, on Galileo's part.

There is agreement that Galileo's attacks on Aristotle's ideas (Butterfield, 1959, p. 80) did not extend to Aristotle's method of induction and deduction (Losee, 1972, p. 54). Galileo extended induction by allowing intuition and idealisation some play as is evidenced by free fall in vacuums, ideal pendulums, and friction-free surfaces. The applied and experimental nature of his work is evidenced by his contributions to ballistics (P. L. Rose, 1968) and his celebrated experiments with inclined planes, motion of other sorts, pendulums and water clock measurements. Galileo's praxis

encompasses observation, induction and deduction, applied mathematics, experimentation with apparatus and applying theory in the manufacture of instruments (Drake, 2003, pp. 52, 402 - 404).

Evangelista Torricelli (AD 1608 – 1647) gives a sense of the manner in which experimental Science was becoming applied Science (Torricelli, 1919). He had been further developing Galileo's mathematical explanation of motion and since Galileo's trial had been fearful of his former association with Galileo. Torricelli dissembles in order to avoid controversy and in September AD 1647 writes to Vincenzo Renieri (AD 1606 – 1647) that “many times, to avoid controversies, ... I have deliberately protested repeatedly that I write for philosophers rather than bombardiers” (Festa, 2007, n.p.; Segre, 1983, pp. 489 - 499), bombardiers being those who would actually rely on the truth of the laws of trajectory to hit their targets. Renieri, member of the Olivetan order, friend to whom Galileo entrusted the updating of his tables of the motions of Jupiter's satellites, died prematurely at Pisa where he was Professor of Mathematics and teacher of Greek.

Newton (AD 1643 - 1727) entered life shortly after Galileo's departure from it, and in his maturity became a member of the Royal Society of London founded in 1662. The Royal Society of London followed by the *Academie des Sciences*, Paris, founded in 1666, were the next scientific societies to be established after the short lived *Accademia dei Lincei* founded in 1603. In *Gulliver's Travels* Jonathan Swift (AD 1667 - 1745) hilariously parodies the every manner of experimentation carried out in such academies (Swift, 1726/1801, pp. 107 - 115). He also gives a humorous insight into a battle between ancient and modern ideas in his *Battle of the Books* (Swift, 1890). The *savants* of Galileo's day were still known as natural philosophers as late as the 1770s. The word Science in the modern sense of “a connected body of demonstrated truths” (OED, 1970a, p. 221) did not enter the English language until circa 1725 (ibid., p. 221 where Watte *Logic* II 9 is cited). The name scientist is recorded as entering the English language as late as 1840: “We need very much a name to describe a cultivator of Science in general. I should incline to call him a scientist” (Whewell cited in OED, 1970a, pp. 223) .

The argument in the preceding paragraph is not just a play with words. The emergence of modern Science took some political urging and it was only towards the end of his life that Francis Bacon (AD 1561 -1626) argued in his *Novum Organum* (F. Bacon, 1952b) that natural philosophy should concern itself with natural causes and not final causes, that it should search for an improved method of enquiry, and that it should be institutionalised in the service of the state towards advancement of learning and welfare of humans. It was not until the publication of the *Principia Mathematica* (Newton, 1952a) in 1687 that Newton subsequently set down four “rules of reasoning in philosophy” (Newton, 1952a, pp. 270 - 271), precursors for modern positive scientific method, and in so doing contributed to a process of definition of Science as it has since become to be depicted in early chapters of many school Science texts of our times. In such texts, Science is often explained as that activity which proceeds as follows: (1) observe, (2) hypothesise, (3) test, test,....., test the hypothesis, and accept or reject it on the basis of repeated verification or of falsification, (4) give the accepted hypotheses only tentative status as theory. Newton is one of the giants of Science but in this section of the enquiry I discuss only his “rules for reasoning in science” (Newton, 1952a, pp. 270 - 271) and move on.

NEWTON’S RULES OF REASONING IN PHILOSOPHY
Experimental Science and its Method at the Dawn of the Modern Age

Newton’s rules of reasoning in philosophy are contained in Table 49 and in operating them he “framed [feigned] no hypothesis” (Newton, 1952a, p. 371; 1972, p. 825, my square brackets), a hypothesis in this case being something not deduced from the phenomena being investigated and therefore having no place in experimental philosophy.

Newton’s scientific method continues to be the subject of study (R. M. Blake, 1933; Butts, 1968; Gauch, 2003; Harper, 2011). Like Grosseteste (AD died c. 1252) and Roger Bacon (AD 1214 – 1294) before him he confirmed Aristotelian inductive-deductive procedure calling his method of composition and resolution the ‘method of analysis and synthesis’ (Mamiani, 2001, pp. 8 - 11) but morphological hindsight attempts to differentiate between these terms can muddy the waters (Ritchey, 1991, pp. 21 - 41). Newton’s development of his method of composition and resolution is best illustrated in *Opticks* (Newton, 1704) which is an outcome of his interest in the

“celebrated phaenomena of the colours” (Newton, 1902, p. 461).

First, he proves by experiment (Newton, 1704, pp. 13 - 17) “that lights which differ in Colour, differ also in degrees of Refrangibility [refractivity]” (ibid., p. 13, my

Table 49: Newton’s Rules of Reasoning in Philosophy

- | |
|---|
| <p>(1) We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances.</p> <p>(2) Therefore to the same natural effects we must, as far as possible, assign the same causes.</p> <p>(3) The qualities of bodies, which admit neither intension nor remission of degrees, and which are found to belong to all bodies within the reach of our experiments, are to be esteemed the universal qualities of all bodies whatsoever.</p> <p>(4) In experimental philosophy we are to look upon propositions collected by general induction from phaenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, till such time as other phaenomena occur, by which they may either be made more accurate, or liable to exceptions.</p> |
|---|

Source: Constructed by Ian Eddington from Newton, I. *Mathematical Principles of Natural Philosophy*. (pp. 270 – 271). In R. M. Hutchings (Ed.). (1952). *Newton Huygens*. (Vol. 34, pp. xi - 372). Chicago: William Benton. (Newton, 1952a, pp. 270 - 271).

square brackets). Next, in a one prism experiment (ibid., pp. 18 – 45) he induces a proposition that “the Light of the Sun consists of Rays differently Refrangible” [refractive]” (ibid., p. 18, my square brackets). Using inductions from this analysis, he proceeds to synthesise consequences that would have to hold if indeed sunlight consists of colours caused by the differing refrangibilities of its component ‘rays’. For example, if his theory is to hold then “all homogeneal Light has its proper Colour answering to its degree of refrangibility, and that Colour cannot be changed by reflexions and refractions” (ibid., p. 87) and he goes on to prove it in a two prism experiment.

Opticks (Newton, 1952b) is a stunning work and is formally written up not unlike a practical classroom experiment might be written up and it is difficult to read a simplistic interpretation of a method of analysis and synthesis from it. His intuitive genius gets in the way. In spite of Newton’s own claims that he also used the method in formulating his theory of universal gravitation, there must have been, in addition to observation, some modern kind of hypothesising which enabled him to make working assumptions about mass being concentrated at the centre (Newton, 1952a,

pp. 279 - 288) and frictionless surfaces. Newton derived God *a posteriori* (Chittenden, 1846, pp. 35 - 36).

CONCLUSION

To conclude, I have traced an ongoing development of a fledgling experimental Science found in Magnus (AD 1193 – 1280) through to the seventeenth century to publication of Newton’s *Principia Mathematica* in 1687. During this time, Christian faith Ethics held its ground against real or imagined challenges. Until the times of Francis Bacon (AD 1561 – 1626) and Thomas Hobbes (AD 1588 – 1679), whom I discuss in subsequent chapters, *Polis* remained a city of God. Theology had come to allow God’s presence in nature, and then-called experimenters sanctioned their method by deference to revealed truth and the efficacy of experimental Science for articulation of God’s natural truths. The methodology of Science had changed dramatically and could no longer be simply understood as syllogistic reasoning.

Nuance brought to enquiry key terms by re-emerging experimental science is

Table 50: Key Terms Nuance—Return of Experimental Science

Intrusion: The Fledgling Re-emergence of Experimental Science in the Thirteenth and Fourteenth Centuries			
Descriptor	Method	Sphere of Operations	Constraints
Science	Various cognitive research methodology frameworks and conventions known by names such as resolution and composition, aptitudinal union, prerogatives of experimental Science, method of differences in falsification or verification of the findings of the theoretical sciences, <i>modus tollens</i> , Kepler’s sleepwalking, Galileo’s inductive-deductive method and Newton’s rules of reasoning in philosophy.	The intellectual virtues at work as the art of practical science in search of true causes.	Cautious regard for revealed truth together with the early infancy of experimental procedure and its attendant cognitive methodologies themselves.

captured in Table 50 which has been assembled from chapter content.

There must of course be a caveat to Table 50. As earlier revealed in this enquiry the meanings of the terms Science, Ethics and *Polis* are captured from their esoteric dimensions. Whereas until this point the esoteric dimensions identified could be discerned at some distance from their exoteric counterparts, in the case of experimental Science, it being often the kind of Science in which individual objects are held and manipulated, the link is more direct. It is consequently more difficult, but not impossible, to imagine experimental-Science thinking without the presence of actual physical objects involved in the experiment. Such was the difficulty in discussing Table 10 on page 179 in the case of experimental Science in antiquity.

Mediate reflection, and therefore somewhat esoteric reflection, is though, not necessarily incompatible with experimental Science and cannot easily be denied an important role in it. The caveat notwithstanding, Table 50 clearly signals an arrival of advances in cognitive methodology in Science. Key terms nuance occasioned by re-

Table 51: Progressive Articulation of Thesis Proposition Statements—Return of Experimental Science

PART THREE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of Polis situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of Polis is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 7 Re-emergence of Experimental Science	Not applicable.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 7 Re-emergence of Experimental Science	Experimental Science returns and the age of reason begins. Science understood as syllogistic demonstration is becoming replaced by Science as induction and deduction within the rules for reasoning in natural philosophy.
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 7 Re-emergence of Experimental Science	Not applicable.
<u>Integrating Summary of Part Three</u>			
Experimental Science returns and the age of reason begins. Science understood as syllogistic demonstration is becoming replaced by Science as induction and deduction within the rules for reasoning in natural philosophy.			

emerging experimental Science challenges the utility of the enquiry’s esoteric-exoteric divide methodology. Table 51 carries key terms nuance to articulation of the Thesis Proposition Statements.

In the next chapter I discuss nuance and changing interrelationships amongst Science, Ethics and Polis through engagement with works by Francis Bacon (AD 1561 – 1626).

Chapter 8

Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age

INTRODUCTION

In this chapter, I suggest that indications of a dawning modern age can in part be found in works by Francis Bacon (AD 1561 – 1626) which contain a new understanding of Science and its method and a nuance in terms usage so different as to challenge received Aristotelian political philosophy.



Source: (Vanderbank, circa 1731 or after c.1618) after an unknown artist. Cropped by Ian Eddington from *Francis Bacon, Viscount St Albans*. (oil on canvas). London: National Portrait Gallery.

Bacon served Elizabeth I (AD 1533 – 1603) and James VI of Scotland as James I of England (AD 1566 – 1625) soberly to his own career advantage eventually falling from grace upon confessing to accepting gifts and bribes. His better-known work on

Science, published in his mature years, is contained in *Advancement of Learning* 1605, *New Atlantis* written circa 1624 – 25, published posthumously in 1627, and *Novum Organum* 1629. After his fall in 1621 Bacon engaged himself and others in translating his works into Latin, believing that English as a language would not last.

Bacon's *Advancement of Learning* (1902a) contains his organisation of knowledge and classification of the Sciences. His *Novum Organum* (F. Bacon, 1900c) outlines his Scientific method. His moral philosophy is contained in Book VII of the *De Augmentis Scientiarum* (F. Bacon, 1863c, pp. 191 - 230). Although Bacon would treat Ethics, politics and logic inductively *New Organon* (F. Bacon, n. d.-d, p. 159), Ethics *qua* moral philosophy remains for him a servant of theology *Advancement of Learning* (F. Bacon, 1900b, p. 224) although to a lesser extent in his so-called Architect of Fortune Ethics (F. Bacon, 1898b, pp. 319, 330, 335). Bacon's cognitive *Polis* is to be found in *New Atlantis* (F. Bacon, 1909a) in which work Science is organised on a plan which differs from one detectable in Plato's mythical Atlantis of *Timaeus* (Plato, 1925h, 1952w). Other works by Bacon relevant to the purpose of this chapter are cited during its progress.

I first attempt a no-fault-no-blame engagement with scholarly commentary about Bacon and some of his works in order to catch a first glimpse of what I conjecture to be his enigmatic persona, and then proceed to a more direct investigation of his Science, Ethics and Polis, sometimes in the process returning to that working glimpse to check and balance qualifications being made.

BACON: A DISPUTED AND ENIGMATIC FIGURE

Ben Jonson (AD 1572 – 1637), Bacon’s, “my man John” (P. Dawkins, 2004, p. 163), one of Bacon’s “good pens” (P. Dawkins, 2004, pp. 288 - 289; Tennison, 1679, p. 60) “which forsake me not ” (P. Dawkins, 2004, pp. 163, 181), pronounced Bacon’s *Novum Organum*, then receiving poor press, a book “*Qui longum note scriptori*



Source: Cropped by Ian Eddington from a line engraving by W. Faithorne contained in Blount, T. (1654). *The Academy of Eloquence*. (NPG D25389). London: National Portrait Gallery. (Faithorne, 1654, n. p.)

proroget ævum [that is a book ‘which will secure a long age for the known writer (Horat. De art poetica)’]” (Jonson, 1892, pp. 28, 86, my square brackets). Jonson states that:

... my conceit of his person was never increased toward him by his place or honours; but I have and do reverence him for the greatness that was only proper to himself, in that he seemed to me ever, by his work, one of the greatest men, and most worthy of admiration, that had been in many ages. (Jonson, 1892, p. 28)

There is a prefatory compliment to Bacon made by his contemporary Tobie Matthew in an Italian translation of Bacon’s essays (Matthew, 1618, pp. 2 - 10) but Matthew, Bacon’s longest friend, is named by Bacon as his alter ego, another I, “another myself” (Mathew & Calthorp, 1907, p.

299). Bacon’s eloquence was celebrated in the public domain during the century of his death as the reproduced line engraving on page 467 attests. Jonson however, who had helped Bacon in translating his works into Latin after his, Bacon’s, fall, was writing after Bacon’s death, but this fact does not necessarily silence the possibility of a-feigning-for-favour-with-Charles I motive on Jonson’s part. Jonson also praises

benefactor (Emerson, 1959, pp. 323 - 324; Gajda, 2012, p. 10; Strachey, 1928, pp. 76 - 82). McIntyre (1909, p. 321) reports Bacon's admission to 28 charges of accepting gifts and bribes. Some defend Bacon's gift and bribe taking on the basis of claims that accepting gifts and bribes was a common practice amongst "basket justices" (C. Knight, 1857, p. 380) of the time (Montagu, 1834b, p. 10). Macaulay does not and in no uncertain terms. (Macaulay, 1837b, pp. 317 - 320). Montagu discusses each of the charges in turn (Montagu, 1834a, pp. cclx - cclxix). Knight finds Bacon *qua* self-proclaimed "justest judge that was in England these past fifty years" (F. Bacon, 1826, p. 518; Rawley, 1620-1660, Folio 1r; Spedding, Ellis, & Heath, 1869, p. 44) to be sitting "on the highest branch of ... [a] rotten tree (C. Knight, 1857, p. 380, my square brackets) and depicts a public and parliament intent on cutting it down (ibid., pp. 380 - 381). Coke and Villiers he says cannot be blamed for Bacon's downfall.

Both Spedding (1878, pp. 626 - 637) and Fowler (1881, p. 27), the admitted charges notwithstanding, argue that Bacon's self-assessment of his status as a judge is probably correct, but both their and Bacon's statements are devalued in proportion to the truth or otherwise of that best-of-a-possibly-rotten-lot in that tree of justices previously mentioned. There are ifs and buts at every turn in openly admitted evidential uncertainties underlying the impressive argument of Spedding—Fowler largely agrees with Spedding—and Coke, Bacon's rival in love and law, is named proud, avaricious, and loquacious (C. W. Johnson, 1837, pp. 367, 368), his loquaciousness men rumour, so says Bacon, "more fitting a pleader than a judge" (Extract from a letter by Bacon quoted in C. W. Johnson, 1837, p. 362). Johnson provides a direct comparison of Bacon and Coke (C. W. Johnson, 1837, pp. 367 - 370), pronouncing neither the better of the other and provides examples of favourable opinions expressed by Coke's contemporaries about his competence as a judge. Spedding also provides insights into the strengths and weaknesses of each of them (Spedding, 1861, pp. 231 - 232). Ironically though, history records that Coke, one by accounts not gifted with Bacon's reported obsequiousness, nor equally celebrated for his own language skills, nor necessarily permanently favoured at court, were there ever such a person so-favoured in Elizabeth's court, was yet a person whose legacy of substantial legal reforms and written jurisprudential commentary (Coke, 1644, 1653, 1798, 1853) is linked to revision of the third and fourth

amendments of the Constitution of the United States (Holland, 2013, pp. 172 - 173), drafting of the sixteenth amendment on taxation (Jensen, 2014, p. 812), and provision of precedent for defence of common law in Australia (A. M. Dillon, 2005, p. 386). But now Coke's legacy is under question he being reported a willing urger of torturing for some thirty-four years prior to his naming it illegal in his *Institutes* (Coke, 1644, 1653, 1798, 1853) some two years after Bacon's death (Mathews, 1996, p. 285) which raises again the relativity of the justest judge claim. Notwithstanding Bacon's gift and bribe taking and Coke's own questionable behaviour in respect of torturing, both Bacon and Coke may, enigmatically, be said to have left considerable legacies.

Bribe-taking and probity in judgement, strictly speaking, are different things so that bribe-taking, although abhorrent in judges by present Western standards, remains a surrogate measure of probity. Although Montagu warns that judging a person alive in one era by the perceived standards of another era is a questionable practice (Montagu, 1834b, p. cccxxxiv), Macaulay provides evidence of the people's support of preaching against bribe taking even before Bacon's time (Macaulay, 1837b, p. 318). In *New Atlantis* (F. Bacon, 1952a), written after Bacon's fall, the new arrivals waiting in the Strangers' House are twice informed that something like bribe-taking, being twice-paid, is not condoned (*ibid.*, 200 - 201). Condoning torture also remains a troublesome referent when interpreted from hindsight on a basis of expressions against it made by large numbers of people in subsequent and presumably, but not necessarily, more enlightened eras. But torture is torture and if it involves maiming or death it embraces, in Aristotle's view at least, the absolutely bad.

The decade leading up to Bacon's fall contains some of his better career years, for example, Attorney General 1613, Lord Keeper 1617, Lord Chancellor and Baron Verulam 1618. Relatively speaking these years were also years of financial ease. Perhaps the *New Atlantis* in a reflection of a once-held blueprint hope of one recently in power and now in lost opportunity in respect of the end—dare it be said, final cause (*sic*)—of his instauration. Perhaps the twice-paid line is a celebration of an experienced freedom from a hitherto relatively privileged impecuniousness and reliance on gifts, perhaps a rationalisation for his own actions in a less than perfect

world, or perhaps an expression of a genuine abhorrence of the practice. It is not easy to know. The speculations contained in this paragraph are not based on acceptance of an assumption that the narrator of *New Atlantis* is Bacon's persona. For example, Swift's *Gulliver's Travels* (Swift, 1726/1801) and Defoe's *Robinson Crusoe* (Defoe, 1719/1868) are similarly narrated and works of this genre dine out, in part, on excitement and mystery about the unknown and fantasy engendered by great exploratory voyages of the seventeenth and eighteenth centuries. In the 1960s manufacturers, artists and musicians similarly sold a multitude of products named after satellites and space craft in the wake of the explorative excitement they generated. *New Atlantis* is discussed further beginning on page 559.

Opinion presenting Bacon *qua* lawyer as knowledgeable in law is counterbalanced by Elizabeth I's view—whether based on her own cognisance or on the opinion of advisors—communicated to Bacon by Essex that “you had a great wit, and an excellent gift of speech, and much other good learning. But in law she rather thought that you could make show to the uttermost of your knowledge, than that you were deep” (Spedding, 1861, p. 297). But then Elizabeth's court often appears not unlike the State of Denmark, and in 1593 Bacon had given offence to Elizabeth by his

opposition in Parliament to subsidies favoured by the Queen. As well, the Cecils and other advisors to Elizabeth were against him (Macaulay, 1837a, pp. 20 - 21).

After his death, but in Rawley's seventeenth-century lifetime, Bacon appears respected in England and abroad (Rawley, 1869, pp. 53 - 55). Rawley's evidence is soft, limited to a few examples, all of which except for one mention of

Advancement of Learning, involve Bacon's essays and historical writings and not his contribution to Science. Bacon's essays were a celebrated hit and as earlier indicated Bacon's better-known Science came late so that Rawley himself may have been too early in time for a full appraisal. Looking back to the century of Bacon's death and the following eighteenth century Peroz-Ramoz (1991, pp. 577 – 588) and Rees,

Hume on Bacon

If we consider him merely as an author and philosopher, the light in which we view him at present, though very estimable, he was yet inferior to his cotemporary Galileo, perhaps even to Kepler. Bacon pointed out at a distance the road to true philosophy: Galileo both pointed it out to others, and made himself considerable advances in it. The Englishman was ignorant of geometry: The Florentine renewed that science, excelled in it, and was the first that applied it, together with experiment, to natural philosophy. The former rejected, with the most positive disdain, the system of Copernicus: The latter fortified it with new proofs, derived both from reason and the senses (Hume, 1754/1778, p. 153)

(2002, pp. 379 - 394) accept that Bacon's now-contested reputation as the father of experimental Science was in vogue.

Hooke (AD 1635 – 1703) offers a qualified acknowledgement of Bacon's

D'Alembert's Caveat on Bacon as Father of the *Encyclopédie*
D'Alembert is gracious towards Bacon's fame and contribution to philosophy:

“Pendant que des adversaires peu instruits ou malintentionnés faisaient ouvertement la guerre à la philosophie, elle se réfugiait, pour ainsi dire, dans les ouvrages de quelques grands hommes, qui, sans avoir l'ambition dangereuse d'arracher le bandeau des yeux de leurs contemporains, préparaient de loin dans l'ombre et le silence la lumière dont le monde devait être éclairé peu à peu et par degrés insensibles.

A la tête de ces illustres personnages doit être placé l'immortel chancelier d'Angleterre, François Bacon, dont les ouvrages si justement estimés, et plus estimés pourtant qu'ils ne sont connus, méritent encore plus notre lecture que nos éloges. *Oeuvres de D'Alembert* (D'Alembert, 1821, p. 62).

However, D'Alembert hardly views Bacon as father of the *Encyclopédie*

Il faut avouer que si dans le siècle ou nous sommes, le ton d'irrégion ne coûte rien à quelques écrivains, le reproche d'irrégion ne coûte rien à quelques autres. Soyez chrétiens, pourrait-on dire à ces derniers, mais à condition que vous le serez assez pour ne pas accuser légèrement vos frères de ne le point être.

Il ne me reste plus qu'un mot à dire sur cet ouvrage. Quelques personnes ont affecté de répandre, à la vérité sourdement, et sans preuves, que le plan m'avait été fourni par les ouvrages du chancelier Bacon. Un court éclaircissement sur cette imputation mettra le lecteur en état d'en juger. Ce discours a deux parties; la première a pour objet la généalogie des sciences, et la seconde est l'histoire philosophique des progrès de l'esprit humain depuis la renaissance des lettres. Dans cette dernière partie il n'y a pas un seul mot qui appartienne au grand homme dont on m'accuse d'être le copiste. L'exposition et le détail de l'ordre généalogique des sciences et des arts, qui compose presque en entier la première partie, n'appartient pas davantage à Bacon. J'ai seulement emprunté, vers la fin de cette première partie, quelques unes de ses idées, en très-petit nombre, sur l'ordre encyclopédique des connaissances humaines, qu'il ne faut pas confondre, comme je l'ai prouvé, avec la généalogie des sciences; à ces idées que Bacon m'a fournies, et dont je n'ai point dissimulé que je lui étais redevable, j'en ai joint beaucoup d'autres que je crois m'être propres, et qui sont relatives à ce même ordre encyclopédique. Ainsi le peu que j'ai tiré du chancelier d'Angleterre est renfermé dans quelques lignes de ce discours, comme il est aisé de s'en convaincre en jetant les yeux sur l'arbre encyclopédique de Bacon (i); et, ce qu'il ne faut pas oublier, j'ai eu soin d'avertir expressément de ce peu que je lui dois. Voilà à quoi se réduit le prétendu plagiat qu'on me reproche: mais ce discours a eu le Bonheur de réussir; il fallait bien tâcher de me l'ôter. *Oeuvres de D'Alembert* (D'Alembert, 1821, pp. 15 - 16).

contribution to development of scientific method: “Of this engine [scientific method] no Man except the incomparable Verulam, has had any Thoughts, and he has indeed promoted it to a very good pitch” (Hooke, 1705, p. 6, my square brackets). The Scotsman Hume (AD 1711 – 1776) is more circumspect as the content of the accompanying information box on page 471 indicates.

Perhaps an epithet by Pope (AD 1688 – 1744) naming Bacon “the wisest, brightest and meanest of men” (Pope, 1881, p. 67, Epistle IV, Line 282) in one breath together with his reported

championing of him in another as “the greatest genius that England (or perhaps any other country) ever produced” (Allott, 2014, p. 4) beacons an underlying complexity confronting likely scholars who would capture an essential or so-called real Bacon. Spence, in attributing the last quoted statement to Pope, includes it amongst Pope's table talk rather than amongst his writings (Remark attributed to Pope by Spence discussed in Underhill, circa 1892, p. 171). In his 1878 work on Diderot (AD 1713 –

1787) and the French encyclopaedists, Morley (1923, p. 31), surely something of a panegyrist, has Bacon influencing Voltaire (AD 1694 – 1778) and he, Morley, on the basis of a view expressed by Diderot, attributes the true parentage of the *Encyclopédie* (Diderot & d'Alembert, 1751-52/1779), edited by Diderot (AD 1713 – 1787) and d'Alembert (AD 1717 – 1783), to Bacon (ibid., p. 118). D'Alembert, although he praises Bacon, does not go quite so far, as the content of the accompanying box on page 472 reveals.

In respect of Voltaire's pronouncing Bacon "the father of experimental science" (Voltaire, 1961/2003, p. 48), de Maistre (AD 1753 – 1821), writing in the late eighteenth, early nineteenth centuries, denounces Voltaire a panegyrist *Examination of the Philosophy of Bacon* (de Maistre, 1998, p. 316) not having properly read even Bacon's better known works, one who is frivolous (ibid., p. 313) and one who "must have his say" (ibid., p. 257). De Maistre also rounds on d'Alembert for the logical impossibility of his claiming that Bacon "examines what is already known on each of the objects of all the natural sciences, and that he, Bacon, made an immense catalogue of what remained to be discovered" (ibid., 315) saying all that Bacon demonstrated was "his profound ignorance of all the objects of the natural sciences" (ibid., p. 315).

De Maistre, writing in opposition to what is now referred to as an atheism, or scientism or empiricism or materialism of his time, and in discussion of Bacon's lesser colleges or species, that is, Bacon's cardinal virtues of which the species consist, dense and rare, light and heavy and the like, claims that "We see that these abstractions are completely Aristotelian, following Bacon's invariable method of doing what he condemns and condemning what he has done, but without suspecting it" (ibid., p. 97) a folly which "led him [Bacon] to destruction of the sciences" (ibid., p. 97, my square brackets) and "to annihilate true natural history by substituting for it I don't know what kind of general physics worthy of the *One Thousand and One Arabian Nights*" (ibid., p. 97). *On the Advancement of Learning* "is ... a perfectly worthless and despicable work" (ibid p. 315) says de Maistre and "independently of the particular errors with which it [the *New Organon*] swarms, the general end of the work renders it worthy of a Bedlam" (ibid., p. 316, my square brackets). Bacon

himself is "a barometer who announced good weather, and because he announced it, was thought to have made it" (de Maistre, 1993, p. 142). And so insults fly throughout his work, de Maistre pardoning himself on the basis of having the right to speak about Bacon as "Bacon speaks of the greatest men" (ibid., p. 242), to which insults de Maistre adds further derisive comments made by Lascelles, Bacon's translator (ibid., pp. 307 – 319). Why de Maistre did not publish his *Examen de la Philosophie de Bacon, ou l'on Traite Différentes Questions de Philosophie Rationelle* (de Maistre, 1860) during his own lifetime remains a question. Perhaps he thought better of it in terms of manners, or perhaps Science's spectacular progress during his later years saw his perceived cause lost.

If read outside of its anti-empiricist stance, free of its insult, as a critique of Bacon's Science *per se*, de Maistre's insights can sometimes be challenging. For example in respect of Bacon's so-called exclusion of final causes from physics and their relegation to Metaphysics de Maistre asks for an explanation of how the clockmaker at work in physics in first discovering "the mainspring that turns the hand of a watch, ... [and] gives movement to the balance wheel" (de Maistre, 1998, p. 245) could have done this without knowing that the spring "had been placed in the frame IN ORDER TO produce this effect?" (ibid., p. 245, de Maistre's capitalisation). Where, de Maistre asks, is one single proof of final cause hindering physics? "Flying through space on the grain of matter that carries him, man has been able to grasp all its motions; he makes tables of them" (ibid., p. 235) and has not had to reject final cause to do it. De Maistre holds that Bacon's assigning final cause to Metaphysics is in effect his imprisonment of it in Divine Theology, his locking it up there and not allowing it to come out. God is effectively quarantined from Science. I discuss differences between Aristotle's metaphysics and Bacon's Metaphysic further in the next section of this chapter where the words final cause are not excluded from Metaphysic but rather from Metaphysic *qua* science as Bacon defines it.

Napier (1853, p. 2), before taking a contrary view, provides opinions from France and England that Bacon was simply a kind of right man at the right time but not risen much above the age, an opinion which might not offend Bacon as the last quotation

in the accompanying box on page 475 reveals. But then again Bacon allows that one might deflect envy of one's situation by ascribing it to good fortune and Providence (F. Bacon, 1909-1914e, n. p.).

Napier (ibid., pp.16 -17), Stewart (1884, pp. 48 - 75) and Playfair (n. d., pp. 52 - 101)

Some Nineteenth Century Questioning of Bacon's Status and a Related Quotation from Bacon

"C'est Galilee, qui a montré l'art de l'interroger par l'expérience. On a souvent attribué cette gloire à Bacon; mais ceux qui lui en font honneur, ont été (à notre avis) un peu prodigues d'un bien qu'il ne leur appartenait peut-être pas de dispenser" (Biot quoted in Napier, 1853, p. 2).

"So little, indeed, can Bacon be considered as having risen in any great degree above the age in which he lived, with respect to his views as to the proper aim of philosophy, or the proper limits of the human understanding, that he even goes so far as to give us formal receipts for the making of gold, and performing other prodigies, which he tells us he judges very possible. With the exception of the disciples of Raymond Lully and Jordano Bruno, the extravagant speculations in which Bacon wished to embark philosophy, had been long abandoned by sober inquirers" (Unnamed Edinburgh Review critic—it is Macaulay—quoted in Napier, 1853, pp. 4 - 5).

"And therefore I attribute my part in all this, as I have often said, rather to good luck than to ability, and account it a birth of time rather than of wit. For certainly chance has something to do with men's thoughts, as well as with their works and deeds" *Novum Organum* (F. Bacon, n. d.-e, p. 155)

acknowledge Bacon as one providing a distinct method of Science and one being much more than the right man in the right time or place. Bacon employs the alchemy of gold rubric mentioned in the second quote in the accompanying box in order to explain his definition of forms and since then references to it, depending on their purpose, have provided a good inverse example of a working Idol of the Tribe *Novum Organum* (F. Bacon, n. d.-d, p. 76)—in this case emphasis on one negative amongst many positives—to ridicule Bacon. Yet the nature of Bacon's reform of Magic in general, and his motive in treating alchemy of gold within it, continue to generate scholarly contention. For example,

Weeks investigates Bacon's Magic in terms of his materialism (Weeks, 2007, pp. 38 - 88, 271 - 203) arguing that the borders between and within Bacon's divisions, say between Physic and Metaphysic on the theoretical side and Mechanic and Magic on the operative side are pervious, allowing a unified system of Baconian Magic *qua* "a science of matter, where the goal is the systematic manipulation and transformation of bodies" (ibid., p. 3). Rossi's interpretation of Bacon transiting from magic to Science is misleading she says, Bacon's project rather being "a renovation of corroded magic" (ibid., p. 2). Rossi (2009) argues that although alchemy and magic had little influence on Bacon, and although he considered them both central in scientific endeavour, he did borrow from their traditions (ibid., pp. 13 - 14). Gaukroger perceives Bacon transitioning out of philosophy into Science (Gaukroger, 2001, p. 225) without completely breaking his link with the occult.

Other nineteenth century scholar-scientists mildly critical of Bacon (Herschel, 1831, p. 114; Whewell, 1837, pp. 48, 303, 386 - 395; 1847, pp. v, xiii, 10 – 11, 313, 625; 1857, pp. 99 - 100), continued to acknowledge Bacon's contribution by favourably associating him with inductive Science (Herschel, 1831, pp. 104, 114; Whewell, 1847, p. vi). Whewell notes that irrespective of Bacon's prohibition of its use, final cause *qua* logical technique remains indispensable in scientific investigation, for example in physiology (Whewell, 1857, pp. 625 - 627).

Twentieth and twenty-first century scholars continue to debate both the nature of Bacon's Science and the nature of experiment within it. For example Hacking names Bacon an experimental philosopher (Hacking, 1983, pp. 246 - 247) and Kuhn divides Baconian Science from mathematical Science by depicting Bacon's Science as largely a fact-gathering operation (Kuhn, 1977, pp. 31 - 65) there being since then scholars in agreement (Daston, 1991, pp. 93 - 104; Findlen, 1997, pp. 239 - 261) and in disagreement (Perez-Ramos, 1989, pp. 270 - 285; Urbach, 1987, p. 26) with such a view. Urbach depicts Bacon first conjecturing or hypothesising statements and using experiments in further refinement of them. Manzo (2009, pp. 123 - 137) allows that "the criterion [Bacon employs for evaluation] is probability" (*ibid.*, p. 129, my square brackets), adding a caveat that it is probability *qua* approvability after the usage of Hacking (1975, pp. 27 – 29). Facts are to be tested in part in respect of the degree to which they confirm or deny existing opinion. Shapiro (1983) allows a similar interpretation suggesting that Bacon searches for true certainty and is prior to Boyle AD 1627 – 1691) and Hooke (AD 1635 – 1703) in respect of glimpsing the utility of hypothesis in Science (*ibid.*, pp. 45, 67, 66 – 77). Cohen (1980) makes a point that Hacking was mistaken in his belief that "Francis Bacon had 'no concern with probability' and 'does not aim at inference under uncertainty'" (L. Cohen, 1980, p. 219). After identifying Pascalian probability as the probability of the mathematical calculus of chance Cohen depicts Bacon as but one of a number of representatives of a stream of non-Pascalian probability methodology flowing from the seventeenth to the nineteenth centuries, and exemplified in Bacon through a method which "though hard to practise, is easy to explain: it involves setting up degrees of certainty" (L. Cohen, 1980, p. 221) within a rubric of assigning greater or lesser reliability or certainty to laws *qua* axioms or forms (L. Cohen, 1980, p. 220) ranked according to

their robustness against his table of prerogative instances. Hooke (AD 1635 – 1703), Boyle AD 1627 – 1691), Glanville (AD 1636 – 1680), Butler (AD 1692 – 1752) and Hume (AD 1711 – 1776) are named amongst other non-Pascalians. For his efforts Cohen has Jalobeanu (2013, p. 78) naming him as depicting Bacon as proto-Bayesian although Cowan does not use the word in the paper under discussion.

Such labyrinths of interpretation of Bacon are destined to continue for as long as scholars, of necessity, extrapolate from Bacon's incomplete oeuvre, especially his *Great Instauration*, itself now in a sense a scaffolded meccano assembly of various works by Bacon, some of them fleeting, some of them semi-complete, and others more fully complete, the scaffolding and assembly process itself sometimes being informed by works not intended as part of the Instauration. The literature on Bacon is vast and I continue with selective use of it throughout the chapter.

Although the soirées held by Bacon's brother are reported to have attracted such literary minds as Ben Jonson (AD 1572 – 1637), George Herbert, (AD 1593 – 1633), John Lily (AD 1553/54 – 1606), William Shakespeare (AD 1564 – 1616) and Thomas Hobbes (AD 1588 – 1679), Bacon appears lukewarm towards the work of William Gilbert (F. Bacon, 1850a, p. 469; Gilbert, 1952a), physician to both Elizabeth I and James I, and to not have attended scientific meetings regularly held at Gilbert's house (Adler, 1952, p. vi). Perhaps for a circumspect Bacon, Gilbert was too much a spade-caller in dialogue and attitude towards possible critics of his work, those "most senseless corrupters of the arts, ... lettered clowns, grammatists, sophists, sprouters, and the wrong-headed rabble" (Gilbert, 1952b, p. 1). Perhaps Gilbert sensed an attitude later formally expressed by Bacon that his (Gilbert's) work, like that of Aristotle before him, and the fanciful chemists in one basket, might be thought of as "little better than useless and disputatious" *Novum Organum* (F. Bacon, 1952b, p. 111; n. d.-e, p. 84) and that Gilbert "has himself become a magnet; that is; he has ascribed too many things to that force, and built a ship out of shell" *History of Heavy and Light* (F. Bacon, 1864, p. 469), or "built a ship with a peg" (de Maistre, 1998, p. 314). Perhaps Bacon, himself rejecting diurnal motion of the earth, was aware of Gilbert's description of such persons as members of the "vulgar herd" (Gilbert, 1952a, p. 107), wondering weaklings, simpletons and unlearned persons

dealing in superstition and fable (ibid., p. 108). Gilbert's *On the Loadstone* is terse, packed with facts, logically argued and impressive to read. Gilbert does not beat around the bush and at least in one place Bacon acknowledges the efficacy of Gilbert's scientific acuity *De Augmentis Scientiarum* (F. Bacon, n. d.-a, pp. 93, 310, 315) and experimental method (ibid., p. 451).

More intriguing and enigmatic is Adler's suggestion that Bacon was unaware of his own doctor's work on circulation of the blood (Adler, 1952, p. vi). In 1628, some two years after Bacon's passing, Harvey published a work now commonly known as *Circulation of the Blood* (Harvey, 1628/1907) having lectured on the subject in

Examples of Experiments: Bacon, Harvey and Gilbert ^(a)

Bacon Experiment 33, Century 1
 IT is affirmed constantly by many, as an usual Experiment, That a lump of *Vre*, in the bottom of a Mine, will be tumbled and firred by two Mens strength; which if you bring it to the top of the Earth, will ask fix Mens strength at the least to fir it. It is a noble instance, and is fit to be tryed to the full: For it is very probable, that the Motion of Gravity worketh Weakly, both far from the Earth, and also within the Earth; The former, because the appetite of Union of Denfe Bodies with the Earth, in respect of the distance is more dull. The latter, becaufe the Body hath in part attained his nature, when it is some depth in the Earth. For as for the moving to a point or place (which was the opinion of the *Ancients*) it is a meer vanity. (F. Bacon, 1670, p. 10, Letter s is sometimes printed as f.)

An experiment by Harvey
 Experimenting with a pigeon upon one occasion, after the heart had wholly ceased to pulsate, and the auricles too had become motionless, I kept my finger wetted with saliva and warm for a short time upon the heart, and observed, that under the influence of this fomentation it recovered new strength and Life, so that both ventricles and auricles pulsated, contracting and relaxing alternately, recalled as it were from death to life. (Harvey, 1889, p. 29)

An Experiment by Gilbert
 Take two pieces of iron, one magnetized with an armed and the other with an unarmed loadstone, and apply to one of them a weight of iron proportioned to its powers: the other loadstone will lift the same weight, and no more. Two needles also turn with the same velocity and constancy toward the poles of the earth, though one needle may have been touched by an armed magnet and the other by one unarmed. (Gilbert, 1893, p. 138)

Notes: (a) The letter s is sometimes represented by the letter f.

London for "nine years or more" (Harvey, 1628/1907, p. 4; 1628/1952, p. 267). Yet Adler's comment is perhaps plausible given Bacon's isolation and preoccupation with translation towards the end of his own life. Harvey, on Aubrey's say so, is said to have claimed that Bacon "... writes philosophy like a Lord Chancellor. I have cured him." (Aubrey, 1898, p. 299), cured possibly being a reference to Harvey's belief in Aristotelian logic and ongoing refusal to acknowledge Bacon's scientific credentials (Sgarbi, 2013, p. 180; T. E. Wright, 2013, pp. 145 - 146). Yet on Hobbes' say-so to Aubrey, Bacon displayed a hands-on action in Science and died of suffocation some days after

catching a chill while stuffing a fowl with snow, that is with coldness or so-called relative absence of heat to determine whether snow, like salt, may preserve the carcase (Aubrey, 1898, pp. 75 - 76).

Bacon's *Novum Organum* contains many examples of his close observation of and association with applied Science and industrial arts, but such information is a narrow base upon which to argue either for or against Bacon's vigorous participation in applied Science.

Certainly the pages of *Novum Organum* (F. Bacon, 1900b) and *New Atlantis* (F. Bacon, 1952a) leave little room for doubt about Bacon's keen observation of material beings and advocacy of investigation of them. Bacon's *Sylva Sylvarum* (F. Bacon, 1670) discussed in more detail beginning on page 559 provides insights into Bacon's engagement with applied Science.

Harvey is reported saying of his patient: "He had a delicate lively hazel eie ... it was like the eie of a Viper." (Aubrey, 1898, p. 72) and certainly an eye that never saw the success of "[Ce] livre d'Harvey ... [ce] chef-d'oeuvre. Ce petit livre de cent pages ... le plus beau livre de la physiologic" (Flourens, 1857, p. 42, my square brackets), Harvey, unlike Bacon, being "the only man I [Thomas Hobbes] know, that conquering envy, hath established a new doctrine during his own lifetime" (1839a, p. viii, my square brackets). On publication of his work, Harvey's practice declined in the face of vulgar criticism peddling a view that he was "crack-brained, and all the physitions were against him" (Aubrey, 1898, p. 300). Surely Bacon might have been cognisant of the notoriety surrounding Harvey's teaching during those last eight years of his, Bacon's, life. It is puzzling, given Bacon's identification of, and emphasis on, experiments of light, and experiments of fruit *Novum Organum* (F. Bacon, 1863h, pp. 135, 152) that he appears unable to reasonably acknowledge some of Harvey's experiments, and some of those of Gilbert too, as examples of one or the other of these kinds of experimentation, irrespective of the methods they were employing, which puzzlement begs a hypothetical question of whether or not Bacon was hoist on a petard of an Idol of the Den or Cave of his own making.

Rawley (1869, p. 37) describes Bacon as one respecting Aristotle the man's learning but detesting a wont of place for action in Aristotle's philosophy—a reasonable take it may be postulated for many persons required to read Aristotle during their thirteenth to sixteenth years—but Bacon did continue an engagement with Aristotle after his youthful Cambridge days and in this context Rawley himself makes no

reference to Aristotle's attempted involvement in politics or acknowledging that in Aristotle ethical behaviour inheres in the doing of an act rather than in the thinking of it.

Rawley pronounces Bacon, who might be taken as an atheist, a religious man and Christian, a taker of Sacraments, and one holding a principle "That a little philosophy maketh men apt to forget God, as attributing too much to second causes; but depth of philosophy bringeth a man back to God again" (ibid., p. 51). Abbot (1885, p. 1) names Machiavelli the great authority of the times on politics and, on the basis of Bacon's essay content, court intrigue, scheming in self-advancement and advice to his Sovereign and others, reads Bacon as Machiavellian (ibid., pp. 202, 324 – 325, 329). De Maistre saw Machiavelli in Bacon too (de Maistre, 1860; 1998, p. 300) and Lebrun notes in passing that "Bacon [is] an experienced politician who knew his Machiavelli (Lebrun, 1998, p. xxviii). Lampert paints Bacon's so-called overthrow of knowledge in Nietzschean colours (1993, pp. 20 - 21).

Bacon uses a passage similar to Rawley's uncited words about religion in his *Preface to the King* (F. Bacon, 1915, p. 8), a religious King, and Bacon may well have been at his own version of Osiander-game-preface-to-*De revolutionibus*, and if so, the quotation may not reveal Bacon's sincere and true thoughts. Yet, in any event, Osiander's motives and intentions for prefacing his own unsigned letter before Copernicus's preface are not without contention and complication (Wrightsmann, 1975, pp. 213 - 242) and thus a fuzzy referent on which to speculate about Bacon's possible motives.

Rawley attributes Bacon's hope for mankind to Bacon's faith (ibid., p. 52), an attribution relative to the question of Bacon's being first and foremost a Christian and also germane to interpretation of symbolism in *New Atlantis*, of which more later. It is telling that Bacon based his request for a burial service at St. Michael's Church, first on the basis of nearness to the memory of his late mother, secondly because St. Michaels' was his parish church, and thirdly because St. Michaels "was the only Christian church within the walls of Old Verulam" (Montagu, 1834a, p. 7).

Yet then again, the idea behind Bacon's request for a St. Michaels' service being pronounced telling, that is, the idea that a man who is not really a Christian might not care much about where he is buried, is itself on shaky grounds. For example a vain non-religious nominal Christian person may wish to be buried somewhere for show, a devout Christian, sure of God's grace, as well an atheist in denial of it, may not care at all where they are laid to rest, and a wish for a funeral ceremony location based on love of a parent may have more to do with human love than with religious conviction. These questions of logic acknowledged, it is not difficult to accept the likelihood of Bacon's being something more than a nominal Christian, yet a complicated one at that. Certainly though he found churchmen annoying in respect of his project and would avoid meeting them if he could *Introductory Essay in The Works of Francis Bacon* (F. Bacon, 1838, p. xlvi).

Although Rawley's delightful-to-read work might possibly now be read as innocent and starry-eyed, it need not necessarily be classified one of deliberate whitewash and expurgation, and it does provide insights. For example Bacon might revise works as many as twelve times before releasing them for print and such possible hard writing might explain the easy reading of Bacon's essays and aphorisms. Yet enigma continues even within his essays where depth and lightness combine in subtle and tantalising criticism and commentary on significant human-condition issues.

For example the opening lines of Bacon's essay *On Death* (F. Bacon, 1868b, pp. 5 - 7) read:

Men feare *Death* as Children feare to go in the darke: And as that Natural Feare in Children, is increased in Tales, so is the other. (F. Bacon, 1868b, p. 5)

His last paragraph closes with assurances:

It is as Naturall to die as it is to be borne; And to a little Infant, perhaps, the one, is as painful, as the other ... But above all, believe it, the sweetest Canticle is *Nunc Dimittis*; when a Man has attained worthy ends ... it openeth the Gate, to good Fame, and extinguisheth Envie. (F. Bacon, 1868b, p. 7)

an ironical and enigmatic closure in Bacon's case riding on judgements others may

A Sentence for High Treason^(a)

“THE punishment of high treason in general is very solemn and terrible. 1. That the offender be drawn to the gallows, and not be carried or walk; though usually a fledge or hurdle is allowed, to preserve the offender from the extreme torment of being dragged on the ground or pavement ^e. 2. That he be hanged by the neck, and then cut down alive. 3. That his entrails be taken out, and burned, [before his eyes] while he is yet alive. 4. That his head be cut off. 5. That his body be divided into four parts. 6. That his head and quarters be at the king's disposal ^f.

^e 1 Hal. P. C. 382

^f This punishment for treason Sir Edward Coke tells us, is warranted by divers examples in scripture; for Joab was drawn, Bithan was hanged, Judas was embowelled, and so of the rest. (3 Inst. 211.)

Notes: [a] f sometimes = s

Source: Cropped by Ian Eddington from *Blackstone's Commentaries on the Laws of England - Book the Fourth - Chapter the Sixth: Of High Treason* (Blackstone, 1766/2014, p. 92, my square brackets).

make, and have made, about his attainment of worthy ends.

Sandwiched between these make-light-of-death sentiments, are Bacon's views about, and knowledge of, torture and religious fear of dissolution of body, let alone human fear of sentences like the one for high

treason exemplified in the accompanying box on page 482.

To be sure Bacon is writing as a man of his times yet is such compartmentalised thinking his own careful expression in both his 1612 and 1625 editions—Essex was executed in 1618—that which sustained him in his involvement against Essex before, during and after the trial, or allowed him to advocate surgery on live animals *De Augmentis Scientiarum* (F. Bacon, 1863c, pp. 33 - 34), or to watch interrogated humans stretch on the rack (Macaulay, 1837b, p. 309).

There is contested opinion (Langston, 1950, pp. 128 - 129) that Ashton, the Puritan cleric attending Essex in the Tower, was a hired hand (Langston, 1950, p. 123) who, in “ploughing” (ibid., p. 124) the soul—and likely the earthly mind too, if not the branded-noble body of Essex—in accord with Elizabethan preparation-for-death religious procedures (Langston, 1950, pp. 109 - 129) heard his confession as treason and reported it back. Essex's composure before the axeman is reported exemplary (Hargrave, 1766, p. 209) but depictions of his state of mind under Ashton's management of preparations-for-death are confronting and pitiful. (Hargrave, 1766, pp. 209 - 210; Strachey, 1928, pp. 79 - 82). Spedding, whose enquiry into Bacon occupied thirty years of his own life, questions Ashton's being a hired hand (Spedding, 1862, pp. 235 - 238). A tantalising question here, in today's parlance, is whether Bacon was in the joke, assuming there was one. Bacon's 1626 edition of the essay in question—he fell from grace in 1621 and died in 1626—carries a one line entry after the essay.

The line, *Extinctus amabitur idem*, recalls Horace:

*Urit enim fulgore suo qui praegravat artes
Intra se positas; extinctus amabitur idem. Epistles II 1 13 (Horace, 1888, p. 42, my underlining)*

For he burns by his very splendor, whose superiority is oppressive to the arts beneath him: after his decease, he shall be had in honor. *Epistles II I* (Horace, 1869, pp. 277 - 278, my underlining)

But it is difficult to know whose idea it was to insert the line or whether it indicates an attitude held by Bacon in his personal preparations for death. In his April 10 will he bequeaths his soul to God and his reputation to the next ages and foreign nations (Abbott, 1885, p. 297; Montagu, 1834b, pp. 7 - 8).

Nor is it easy to salt Bacon's wounds with a questioning face off:

Dum inter homines sumus, colamus humanitatem. Of Morals III XLIII (Seneca, 2014)

So long as we are among men, let us cherish humanity [the next words being "and so live that no man may be either in fear or in danger of us"]. *Seneca's Morals* (Seneca, 1882, p. 358, my square brackets)

Each of us, to some extent, must cut our humanity from our own times before attempting to tailor it with Ethics and morals, the natural abilities required for such a task being themselves "like natural plants that need pruning by study" *Of Studies* (F. Bacon, 1868c, p. 204). A so-called true Bacon remains enigmatic. In writing his essays, Bacon as artist and twelve-times revisionist wordsmith may well have worked in detached crafting of a speculative, literary, and popular view rather than on expressing a personal or even didactic view, making content analysis of the kind undertaken in the preceding three paragraphs less valid for purposes of catching a so-called true Bacon. The structure of *On Death* appears typical of a general essay template pattern of heavy sandwiched between light employed by Bacon.

Macaulay (1837a), Whig politician, on the basis of those words of Jonson quoted on page 467, names Jonson a "most unexceptionable Judge" (ibid., p. 11) and in a warts and all rendering of Bacon's life mentions Bacon's being Registrar of the Star Chamber, and his role as Attorney General in the Peacham case, one of the last cases involving torture—a questionable statement now in the face of the West's struggle

with terrorism. On the question of torture Macaulay presents Bacon “distinctly behind his age” (ibid., p. 37) noting Elizabeth I’s decree against it years earlier and the public’s detestation of it (ibid., p. 38).

Bacon far behind his age! Bacon far behind Sir Edward Coke! Bacon clinging to exploded abuses! Bacon withstanding the progress of improvement! Bacon struggling to push back the human mind! The words seem strange. They sound like a contradiction in terms! Yet the fact is even so: and the explanation may be readily found by any person who is not blinded by prejudice. (Macaulay, 1837a, p. 37)

Donne preached against torture (Donne, 1625 & 1626, pp. 343 - 286) in Easter Sermons of 1625 and 1626 and Turner (2011, n. p.), against Graham Greene’s suggestion (1951, p. x) that Shakespeare is short on references to torture, finds imagery of torture in thirteen plays, variant imagery of the word torture occurring fifty times, and variant imagery of the word torment fifty-three times. Imagery of torture and torment says Turner also appears two and three times respectively in the sonnets (T. Turner, 2011, n. p.).

According to Macaulay, Bacon examined Peacham on the rack and upon being unable to obtain a confession, reported to the King the presence of a “dumb devil” in Peacham (Macaulay, 1837b, p. 309). Mathews (1996, pp. 27, 321 - 406) in turn downplays Macaulay, and presents Bacon as among the least tainted of the Jacobean Court. She goes some way to rescuing Bacon *qua* “meanest of mankind”, “two-souled monster”, “creeping snake”, “venomous atheist”, “England’s one scoundrel”, “false persona and sterile philosopher” from his accusers (Mathews, 1996, pp. 20-24, 353, 369, 384, 323, 337, 384, 394, 406). Mathews cites Addison (AD 1672 – 1719) Whig Politician, Swift (AD 1667 -1745) member with Addison of the pro-Whig Kit-Cat Club, Hume (AD 1711 – 1776) anti-Whig , Archbishop Tennison, (AD 1536 – 1716) who crowned Anne (AD 1665 – 1714) and George I (AD 1660 – 1727), Camden (AD 1551 – 1623), historian of Elizabeth I (AD1533 – 1603) and acquaintance of Ben Jonson (AD 1572 – 1637), and Charles Molloy (AD (1640 – 1690) maritime lawyer, all moderate in their assessments of Bacon in whom there is more good than bad, Bacon she says, being a victim of attack from seventeenth century anti-Stuart libellers who wrote secret histories in character assassination of exiled princes (ibid., 326 – 330). A view emerges of Bacon as one whose services to

mankind outweigh his services to state. Mathews assembles other notables favourable towards Bacon.

Many issues, including opinion possibly based on covert prejudice, appear to cloud derivation of a clear picture of Bacon's essential character. Perhaps Rawley's simple and common-sense view is a valid explanation of Bacon's perceived enigmatic persona:

His father had the gifts of humour, audacity, and duplicity essential to success at Elizabeth's court; his mother possessed a classical training and resultant taste, which were crafted upon a rigid Calvinism in religion. Some trace of all of these influences may be found in the character and attainments of the son. (Rawley, 1657, p. b2 + 1)

In any event, this chapter is not focussed on judgement even though Bacon has been and will again be discussed in association with actions and or expressed attitudes popularly considered less salutary as human attributes. I now turn to sequential discussion of Bacon's Science, Ethics and *Polis* where, except in respect of Ethics, Bacon's perceived enigmatic persona is no longer in principal focus.

BACON'S SCIENCE, ETHICS AND *POLIS*

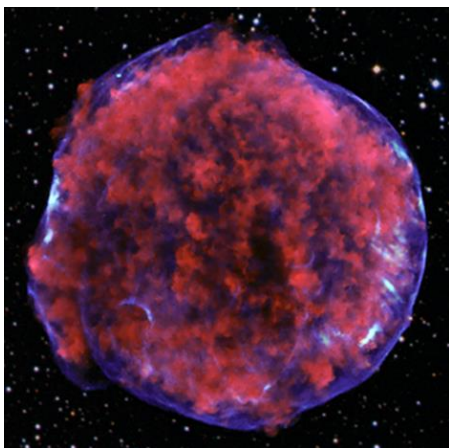
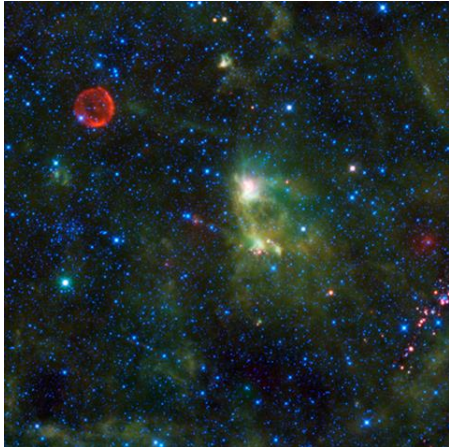
Bacon's Science

Advancement of Learning (F. Bacon, 1863b) and *Novum Organum* (F. Bacon, 1880b) respectively now represent parts one and two of Bacon's *Great Instauration* (F. Bacon, 1863h, pp. 25 - 520; 1882g, pp. 12 - 479), his unfinished great scheme of "regeneration and restoration of the sciences" *Epistle Dedicatory* (F. Bacon, 1860a, p. 24) whereby, in the fullness of time, "philosophy and the sciences may no longer float in air, but rest on the solid foundation of experience of every kind, and the same well examined and weighed" (*ibid.*, p. 24). Bacon's new method was to be a machine of Science "but the stuff must be gathered from the facts of nature" (*ibid.*, p. 24).

Bacon outlines his scientific method in *Novum Organum* (F. Bacon, 1900c) and in that work he downplays Aristotelian heritage (*ibid.*, Aphorisms 10 – 19, p. 316), finds fault with Aristotelian induction and deduction, and questions the cognitive structure of the causes on which it is predicated. For example, he is quite critical of the Greek contribution in general, dismissing the Greeks collectively as a job lot (*ibid.*, Aphorism 71, pp. 332 – 333) all be it with some acknowledgement of the

Presocratic writers in general, and the atomists in particular (ibid., pp. 79 - 98, 333) although, in Farrington's opinion, Bacon's views on atomism became critical over his own lifetime, distinct Democritean atomic particles falling to simple natures as a

Remnant (Red Circle) of the Star, now Called Tycho's Supernova that Appeared in Cassiopeia from 1572 – 1574



Source: Top picture copped by Ian Eddington from *Tycho's Supernova Remnant*. (2009). Berkeley, California: NASA/JPL-Caltech/WISE Team. (NASA/JPL-Caltech/WISE Team, 2009). Bottom picture cropped by Ian Eddington from *Chandra Observation of the Tycho Supernova Remnant X-ray: NASA/CXC/Rutgers/K.Eriksen et al.; Optical: DSS*. (2011). Flickr Photostream: Harvard-Smithsonian Center for Astrophysics. (NASA/CXC/Rutgers/K.Eriksen et al.; Optical: DSS, 2011)

better fit for his interest in the alchemy of transmutation (Farrington, 1964, p. 51). Hesse (1985, pp. 141 - 152) conjectures Bacon changing his ideas on atoms and Rees (1980, pp. 549, 564) claims that Bacon at no time accepted principles of atomism.

Bacon describes the long held predominant status of the Greek systems as dangerous *Novum Organum* (F. Bacon, 1900c, pp. 336 - 337, Aphorism 77). He is critical of syllogistic method in *Novum Organum* (ibid., p. 316) and *Advancement of Learning* (F. Bacon, 1900a, p. 138) and in the latter (1902a, p. 22) rejects Aristotelian syllogism as a method of natural Science. Elsewhere, when discussing deficiencies in method, he regularly lets the blood of his ire *Novum Organum* (F. Bacon, n. d.-e, pp. 84, 91 – 92, 98, 102, 108, 125, 132, 250, 358), *Advancement of Learning* (F. Bacon, n. d.-a, pp. 412, 413, 503).

Much of Bacon's downplaying of some of the ancients from the time of the Presocratics, Aristotle and Plato results from his use of their works as surrogate measures in his survey of the Sciences where, in Aphorisms 71 to 77 of *Novum Organum* he outlines weaknesses of received philosophy, and in Aphorisms 78 to 92 causes of error in it. He weights these ancients heavily, touching relatively lightly on perceived defects or shortcomings in the work of such near-contemporary and contemporary greats as Copernicus (AD 1473 – 1543), Galileo

(AD 1564 – 1652), Gilbert AD 1544 - 1603 and others to whom he is sometimes complimentary. At other times his swipes at them, when not directly insulting, occasionally come close to being backhanded compliments *Novum Organum* (F. Bacon, n. d.-d, pp. 84, 272, 310, 315), and *De Augmentis Scientiarum* (F. Bacon, n. d.-d, pp. 451, 502 – 504). His downplaying of Pythagoras can, strictly reading, only be based on work written by others about Pythagoras and it compromises to some extent the spirit of his own criticism of the practices, process and method of natural philosophers before his time.

It is instructive to read of Bacon's being aware of Galileo's moons, the so-called stars of Jupiter, *Novum Organum* (F. Bacon, n. d.-d, pp. 272 – 273) and of Copernicus' sun-centered universe and his, Bacon's, commissioning a machine out of iron to test whether the senses were deceived by apparent movements of heavenly bodies *Novum Organum* (F. Bacon, n. d.-d, p. 259) being tracked by Copernicus, and further, his not being able to personally make the step to accepting rotation of the earth (ibid., p. 299), which whole earth according to Gilbert "makes a diurnal rotation in the space of twenty-four hours" *On the Lodestone and Magnetic Bodies and on the Great Magnet the Earth* (Gilbert, 1952a, pp. 107 - 108). Likewise of wonder is his reluctance to smash at least one of the crystal spheres once and for all, given his knowledge, via Galileo, of a possibility of "several centres of motion among the stars" (F. Bacon, n. d.-d, p. 273), a depiction of the Milky Way itself as "a cluster of small stars, entirely separate and distinct" (ibid., p. 272), and an appearance in 1572 of a new star in Cassiopeia and its disappearance two years later, during Bacon's Cambridge nights. Elizabeth I summoned astronomer Thomas Allen to advise her on the appearance but unfortunately his "very learnedly" (Aubrey, 1898, p. 28) given explanation appears not to be available. Another supernova, then a new star appearing in Ophiuchus the Serpent-Bearer in 1604, and much more talked about, was observed by Kepler (AD 1571 – 1630), Galileo (AD 1564 – 1642) and Helisaeus Roselin (AD 1545 – 1616) who perceived it to be "the end of slavish submission of a single person" (Roselin quoted in Marett-Crosby, 2013, p. 214). It is also a wonder if he, Bacon, were aware of the ideas of Bruno (AD 1548 – 1600) concerning the stars being distant suns surrounded by their own planets, some of which might support life (L. McIntyre, 1903, pp. 180 - 202). Galileo and Kepler were

certainly abreast of Bruno’s speculations (Rowland, 2008, pp. 280 - 281). May be, too, in some instances, discretion might well have been the better part of valour on Bacon’s part for “if the *Novum Organum* had been published at Rome instead of London its author would have been handed over to the Inquisition” (Ball, 1838, p. xlvii), the churchmen having never forgiven Bacon for “casting him [Aristotle] out” (ibid., p. lxvii, my square brackets) and their placing *Novum Organum* on the banned

Bacon’s Statement of an Axiom^(a)

In 1620 Bacon would state an axiom thus:

“The organs of the senses, and bodies which produce reflections to the senses, are of a similar nature” *Novum Organum* (F. Bacon, 1880b, p. 390).

In 1675 Newton would state an axiom thus:

“The angles of reflection and refraction lie in one and the same plane with the angle of incidence” *Opticks* (Newton, 1952b, p. 380).

Content ignored is there really a substantial difference between the two as to what constitutes an axiom?

Notes: (a) Cohen cites *De Augmentis Scientiarum* Book II, Section V and *Novum Organum* Book 2, Section 105 as a basis for his claims “that a hierarchy of Baconian forms is a hierarchy of causal laws” (L. Cohen, 1980, p. 220) and that “Such laws are described in what Bacon calls axioms” (ibid., p. 220).

books list. Again Bacon might not fan the windmills of churchmen but rather, as would a water-mill owner, pray for “peace among the willows” (F. Bacon, 1850d, p. 31) of those wind-powered political churchmen, but it is likely that his denial is predicated on something more than a discretion-is-the-better-part-of-valour explanation.

For example Rees, in notes about parts of manuscripts Bacon did not include in his works, is puzzled by Bacon’s unwillingness to accept a heliocentric universe (G. Rees, 1981, p. 377) and suggests that Bacon had a good understanding of Copernican and Gilbertian arguments for

heliocentricity and diurnal motion.

Rees is intrigued by the argument Bacon had with himself on diurnal rotation: can Bacon’s refusal to accept the rotation of the earth be explained in terms of competitive rivalry (ibid., pp. 382 – 386), or conflict with scriptures, or competing now-called Kuhnian paradigm? To form an opinion as I have that Bacon’s short, brief and informative *On the Heavens* (F. Bacon, 1882f) does not stand comparison with say Copernicus’ *De Revolutionibus* (Copernicus, 1952) or with books four and five of Kepler’s *Epitome of Copernican Astronomy* (Kepler, 1952b) is in no way to denigrate Bacon. So too is the case in comparisons of Bacon’s *Inquiry Respecting the Magnet* (1882d) with Gilbert’s *On the Lodestone and Magnetic Bodies and on the Great Magnet the Earth* (Gilbert, 1952a) yet such comparisons might contribute to

speculations as to why Bacon and Gilbert for example may have had little to say to one another on the subject of magnetism, or about Bacon's reluctance to accept

heliocentricity.

Examples of Bacon's Experiments^{(1), (2)}

Experiment 132 on Transmission of Sound

It would be tryed, how, and with what proportion of difadvantage, the Voice will be carried in an Horn, which is a Line Arched; or in a Trumpet, which is a Line Retorted or in fome Pipe that were Sinuous. *Sylva Sylvarum* (F. Bacon, 1670, p. 36)

Experiment 414, the Second of Seven Experiments to Make Flowers Arrive Early

The fecond is the *The Pulling of the Buds of the Rofe*, when they are newly knotted, for then the fide Branches will bear. The caufe is the fame with the former: For *cutting off the Tops, and pulling off the Buds*, work the fame effect, V, in Retention of the Sap for a time, and Diverfion of it to the Sprouts that were not fo forward. *Sylva Sylvarum* (F. Bacon, 1670, p. 92)

Experiment 741 on Marbelling

THE *Turks* have a pretty Art of *Chamoletting of Paper*, which is not with us in ufe. They take divers Oyled Colours, and put them feverally (in drops) upon Water, and ftir the Water lightly, and then wet their Paper (being of fome thicknefs) with it; and the Paper will be waved and veined like *Chamolet* or *Marble*. *Sylva Sylvarum* (F. Bacon, 1670, p. 156)

Experiment 742 on the Cause of Colours in Blood

IT is fomewhat ftrange, that the Blood of all Birds, and Beafes, and Fifhes fhould be of a Red colour, and onely the Blood of the Cuttle fhould be as black as Ink. A man would think that the caufe fhould be the high Concoction of that Blood; for we fee in ordinary Puddings that the Boyling turneth the Blood to be black; and the Cuttle is accounted a delicate Meat, and is much in requeft. *Sylva Sylvarum* (F. Bacon, 1670, p. 156)

Notes: (1) Letter s is sometimes printed as letter f. (2) Whether it is a commonplace book (van Berkel, 2013, p. 234), or a book to be read as promotional rhetoric and knowledge in announcement of Bacon's Science (Rossi, 2009, pp. 219 - 220), or a "handbook of experiments, experimental ideas and suggestions" (Jalobeanu, 2013, p. 77), *Sylva Sylvarum* (F. Bacon, 1670) with its content of one thousand so-called experiments (ibid., p. 215), provides insights into what Bacon may have meant by the term experiment.

Following his exposition of the defects and causes of errors of received philosophy, Bacon turns more positive and in Aphorisms 93 – 114 of *Novum Organum* (F. Bacon, n. d.-d, pp. 130 - 146) expresses hopes for Science and the progress of mankind. I proceed by attempting to glean an understanding of Bacon's Science (a) from his description of, and rationalisation for it, in the *Novum Organum* and other works, (b) from his classification of knowledge in his *Advancement of Learning* and his situation of Science within that classification including his definition and clarification of terms there and in other works, and (c) from his explanation of a scientific method he constructs for his new Science.

First then, in respect of (a) in the preceding paragraph, Bacon, in describing the task he sets himself, states that his goal (sic) is to "erect and constitute one universal science as to be the mother of the rest" *Advancement of Learning Book III* (F. Bacon, 1863b, p. 471), "a science ... which may be the receptacle for all such axioms as are not peculiar to any

of the particular sciences" (ibid., p. 472), Induction of axioms involving observation and experiment in the first place. The capital I in the word Induction in this

paragraph and elsewhere in this chapter marks Bacon's new usage of that word, as do capitals in the words Form, Magic, Mechanic, Metaphysic, and Physic.

Bacon's usages of the terms axiom and experiment are respectively explained through examples contained in the accompanying boxes on pages 488 and 489, which examples, given some minor reform and rewording, might easily serve in secondary school science classrooms in Australia in 2015. Bacon describes new Scientists as neither empiricists who, like ants, "heap up and use their store" *Novum Organon* (F. Bacon, 1900c, p. 349), nor dogmatists, who, like spiders, spin their own webs, but are rather a mean between the two, who, like bees, extract matter and work and fashion it by "their own efforts" (ibid., p. 349). Science's true labour relies neither entirely on the mind's powers nor its stored history of experimentation, nor raw mechanical knowledge, but rather on the working over of these latter two in human understanding (ibid., p. 349). The business of this new Science is to extract causes and axioms from works and experiments and "again from those causes and axioms [to extract] new works and experiments, as a legitimate interpreter of nature" (ibid. p. 358, my square brackets).

For Bacon, natural philosophy is Science as explained further below beginning on page 494, and his Science would proceed slowly through observation and experimentation from particulars to careful statement of universal truths *Novum Organum* (F. Bacon, 1900c, pp. 340, 351 – 353), Aphorism 104 cautioning that the understanding be weighted with "lead and ballast" (ibid., p. 353) to prevent its race to hasty conclusions, and Aphorism 105 announcing an invention of a new method of Induction different from the peurile kind of simple enumeration of the ancients, which new method might be used not only for the discovery and proof of principles but also "for the same purpose in respect of "minor, intermediate, and, in short, of every kind of axioms" (ibid., p. 353). In Aphorism 127 Bacon informs that his method with its new kind of Induction is suitable not only for natural philosophy but also for logic, Ethics, politics, and "every other science" (ibid., p. 364) as well.

Axioms discussed in the two preceding paragraphs are of two kinds, those derived from so-called experience and those derived through genuine Induction and experiment and used in further investigation of nature. Also there are experiments of

light and experiments of fruit and the former are of a higher order in that they supply practice with its instruments, the fruits of experimental Science being the “sponsors and sureties for the truth of philosophies” (F. Bacon, 1863h, p. 104)—technically

Bacon’s Philosophia Prima and Philosophia Secunda

Philosophia Prima

“A Collection of General Axioms Subservient to All the Sciences” *Advancement of Learning* (F. Bacon, 1900a, p. 305)

But since the divisions of knowledge are not like several lines that meet in one angle; but are rather like branches of a tree that meet in one stem (which stem grows for some distance entire and continuous, before it divide itself into arms and boughs); therefore it is necessary before we enter into the branches of the former division, to erect and constitute one universal science, to be as the mother of the rest, and to be regarded in the progress of knowledge as portion of the main and common way, before we come where the ways part and divide themselves. This science I distinguish by the name of *Philosophia Prima*, primitive or summary philosophy; or *Sapience* which was formerly defined as the knowledge of things divine and human. *Advancement of Learning, Book III* (F. Bacon, 1863b, pp. 471 - 472).

Philosophia Secunda

Its purpose is the “free investigation of individual existences [that is, of forms]” (F. Bacon, n. d.-g, pp. 52 - 53, my square brackets).

Lastly, there is yet ... the Secondary Philosophy itself, which is the sixth part of the Instauration. Of the perfecting this I have cast away all hopes; but in future ages perhaps the design may bud again. Notwithstanding, in our Prodromie, [or prefatory works] such I mean only, which touch almost the universals of nature, there will be laid no inconsiderable foundations of this matter. *A Letter Written in Latin by the Lord Verulam, to Father Fulgentio, the Venetian* (F. Bacon, 1880a, pp. 64 - 65).

speaking, a very Aristotelian *a posteriori* vindication indeed, Lord Bacon. Experiments of light “which are no use in themselves, ... never fail” (ibid., p. 135) because they are desgned “to discover the natural causes of some effect (ibid., p. 135) and settle the question equally well “whichever way they turn out” (ibid., p.135). Axioms “common and promiscuous” *Advancement of Learning* (F. Bacon, 1900a, p. 83) to all the sciences are, together with “relative and accidental conditions of essences” (ibid., p. 83), assigned to *Philosophia Prima*. When Science proceeds from “experiment to experiment” (F. Bacon, 1900a, p. 131) it produces learned experience in a process but one step above walking in the dark (ibid., p. 132). For example,

experimentation to improve paper quality by yet again making it from linnen instead of say silk, is dubbed the Chase of Pan and is not properley any part of Science (ibid. 139 – 140). Recognising anachronism, might not Kuhn be déjà vu?: "Normal science does not aim at novelties of fact or theory and, when successful, finds none" (Kuhn, 1970, p. 52). When Science proceeds “from experiments to axioms, which again may point out new experiments ... [it] is called interpretation of nature, *Novum Organum*, or new machine of the mind” (ibid., p. 131) and in so doing it is walking in light (ibid., p. 132) on a road to *Philosophia Secunda*.

The noble end (sic) of Science—that is, the discovery of truth and utility in a “real model of the world”, *Novum Organum* (F. Bacon, 1900c, pp. 363 - 364)—is

bounded, its purpose being a searching out of God's concealed things focussed on regaining mankind's God-given power over nature within confines of "right reason and true religion" (F. Bacon, 1900c, p. 367). On the face of Bacon's words, Science is about truth and dignity but as discussed further below in the section on Ethics, Bacon's ideas about, and advice on, what it may mean to act with dignity and goodness when making one's way in the cut and thrust of everyday affairs, and his thoughts about mankind's ability to employ Science's power over nature ethically, are not necessarily without enigma and I discuss them further beginning on page 544.

Bacon's work remained unfinished at the time of his death but it is possible to educe a general understanding of his Science from his outline of the six divisions intended for his *Great Instauration* (F. Bacon, n. d.-b, pp. 17 - 54). For example, in Division 3 of the plan for the *Great Instauration* outlined on page 493, Bacon writes of a Natural and Experimental History or Primary History *Towards a Natural and Experimental History* (F. Bacon, n. d.-h, p. 355) which provides food for a "suckling" Science *On the Dignity and Advancement of Learning* (F. Bacon, n. d.-f, p. 48) and which is a "common mother of all" (ibid., p. 387), of which more later. That fed is to be his new Science, a Second Science, an Active Science. Humans, correctly prepared, might, with the aid of Bacon's method or machine of Science, climb towards the heights of Second Science via a Ladder of the Intellect (ibid., p. 38), gaining notions and anticipations of Second Science during the climb (ibid., p. 38), the process going on across generations as outlined in Divisions 4 through 6 of Table 52 on page 493.

In summary of the first of the three windows into Bacon's Science outlined on page 489—that is, (a) Bacon's description of, and rationalisation for, his new Science—there is little doubt that Bacon intends his new Science as a break from past practice. His new method is pronounced suitable for all Science, and proceeds through observation, experiment and a new kind of Induction to extract nature's Forms, express them as axioms, and employ them further in investigation of nature. New Science may proceed from experiment to experiment, or from experiment to axiom to experiment, but it cannot proceed without experiment. Bacon situates his Science in a real world where it may maximise power over nature subject to his named

constraints of right reason and true religion, one of which, true religion, and part of the other, the breath of life component, flow from sources originally outside of his

Table 52: Bacon’s Plan for the Great Instauration

#	Division	Comment
1	The Divisions of the Sciences	A summary of the knowledge the human race possesses including “things omitted which ought to be there (sic)” <i>The Plan of the Work</i> (F. Bacon, n. d.-g, p. 39)—a coast[ing] across the ancient arts (ibid.). <i>Advancement of Learning</i> (F. Bacon, 1900a) has come to represent this division, the citation given being one of a number of available editions.
2	The Novum Organum or Indications Concerning the Interpretation of Nature	“The doctrine concerning the better and more perfect use of human reason in the inquisition of things, and the true helps of the understanding: that thereby (as far as the condition of mortality and humanity allows) the intellect may be raised and exalted, and made capable of overcoming the difficulties and obscurities of nature” (F. Bacon, n. d.-g, p. 40). <i>Novum Organum</i> (F. Bacon, 1900c) now represents this division the citation given being one of a number of available editions.
3	The Phenomena of the Universe or a Natural and Experimental History for the Foundation of Philosophy	A natural history embracing the phenomena of the universe and experience of every kind which might serve as a foundation for philosophy <i>qua</i> Science. A natural history of fact (sic) derived from experiment rather than raw sense, its purpose being to constitute the first food of “suckling Philosophy” <i>Plan of the Work</i> (F. Bacon, n. d.-g, p. 48) <i>qua</i> Science. It would be the stuff on which Induction was to work. It is largely unfinished but examples of the kind of desired content can be found in the <i>History of Winds</i> , (F. Bacon, n. d.-c, pp. 381 - 466), <i>History Natural and Experimental of Liee (sic) and Death</i> (F. Bacon, 1669, passim), <i>Sylva Sylvarum</i> (F. Bacon, 1670, passim) and the small entrances (introductions) to, such wanting works as <i>History of Heavy and Light</i> , <i>History of the Sympathy and Antipathy of Things</i> , <i>History of Density and Rarity</i> , and <i>History of Sulphur, Mercury and Salt</i> (F. Bacon, 1850a, pp. 464 - 466).
4	The Ladder of the Intellect.	Evidently Bacon intended to record, as they arose during the progress of his work, general rules to guide application of his method, which general rules are as the steps of a ladder (Montagu, 1850, p. 331). The brief <i>Scaling Ladder of the Intellect; or Thread of the Labyrinth</i> (F. Bacon, 1850c, pp. 519 - 520) appears all so far that is available.
5	The Forerunners or Anticipations of the New [Second] Philosophy to be Contained in a Work Called <i>Prodromus Philosophia Secunda</i> , [The Forerunner of Secondary Philosophy]	The intention of this section may be dimly grasped from <i>Precursors; or Anticipations of the Second Philosophy</i> (F. Bacon, 1850b, pp. 521 - 522). Here the business of scientists <i>qua</i> faithful secretaries, “[is] to receive and note down as such have been enacted by the voice of nature herself; and our trustiness must stand acquitted, whether they are accepted, or by the suffrage of general opinions rejected” (ibid., p. 521) so that, “in times yet to come, individuals may arise who will both be able to comprehend and digest the choicest of those things, and solicitous also to carry them to perfection [either as ongoing anticipations or in Active or Second, Philosophy]” (ibid., p. 521, my square brackets). “The anticipations [of Second Philosophy] he intended to pay down as use, till he might furnish the world with the principal” (Archbishop Tennison quoted in Montagu, 1834b, p. 331).
6	The New Philosophy or Second Philosophy or Active Science	The New Philosophy or Active Science, Bacon’s <i>Philosophia Secunda</i> , is the not-reached summit of his <i>Great Instauration</i> . “The sixth part of my work (to which the rest is subservient and ministrant) discloses and sets forth that philosophy which by the legitimate, chaste, and severe course of inquiry which I have explained and provided is at length developed and established. ... For the matter in hand is no mere felicity of speculation, but the real business and fortunes of the human race, and all power of operation.” its purpose being the “free investigation of individual existences [that is, of forms]” (F. Bacon, n. d.-g, pp. 52 - 53).

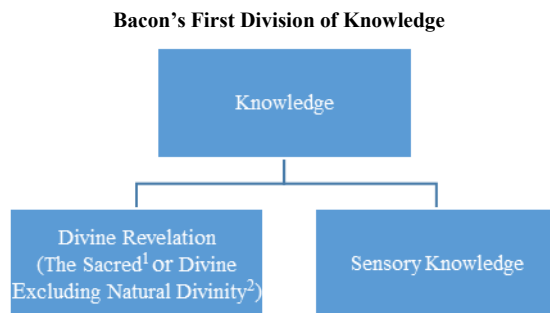
Source: Bacon, F. (n. d.-f). *The Plan of the Work*. (pp. 39 - 40, 48, 53). In J. Spedding, R. Ellis & D. Heath (Eds.), *The Great Instauration*. Cambridge: Riverside Press; Bacon, F. (1669). *History Natural and Experimental of Liee (sic) and Death*. (passim). London: Printed for William Lee at the Turk’s Head in Fleet Street; Bacon, F. (1670). *Sylva Sylvarum: A Natural History in Ten Centuries* (9 ed.). (passim). London: Printed by J. R. for William Lee; Bacon, F. (1850). *History of Heavy and Light and History of the Sympathy and Antipathy of Things and History of Density and Rarity and History of Sulphur, Mercury and Salt*. (pp. 464 – 466). In B. Montagu (Ed.), *The Works of Francis Bacon*. Philadelphia: A. Hart, late Carey & Hart; Bacon, F. (1850). *Precursors: Or Anticipations of the Second Philosophy*. (pp. 521 – 522). In B. Montagu (Ed.), *The Works of Francis Bacon* (Vol. III). Philadelphia: A. Hart, late Carey & Hart; Bacon, F. (1850). *The Scaling Ladder of the Intellect; Or Thread of the Labyrinth*. (pp. 419 – 420). In B. Montagu (Ed.), *The Works of Francis Bacon* (Vol. III). Philadelphia: A. Hart, late Carey & Hart; Montagu, B. (1834). *Preface*. (p. 331). In B. Montagu (Ed.), *The Works of Francis Bacon, Lord Chancellor of England* (New Edition ed., Vol. XVI). London: William Pickering; Bacon, F. (n. d.). *History of the Winds*. (pp. 381 – 466). In J. Spedding, R. Ellis & D. Heath (Eds.), *The Works of Francis Bacon* (Vol. IX). Boston: Taggard and Thompson. (F. Bacon, 1669, 1670, 1850a, 1850b, 1850c, 1864, n. d.-c, n. d.-g)

real world. This new Science will emerge from Natural History as First Science and over generations grow into Second or Active Science.

I proceed to investigate Bacon's Science further through discussion of his classification of knowledge *qua* human learning, and of terms he uses in situating Science within that classification, that is via (b) the second of the three approaches to understanding Bacon's Science outlined on page 489. Unless noted, I do not differentiate between Bacon's interchangeable use of the terms information, knowledge and human learning.

"All knowledge [says Bacon] admits of two kinds of information; the one inspired by divine revelation and the other arising from the senses" *Advancement of Learning* (F. Bacon, n. d.-a, pp. 470 - 471). The one, Divine Revelation, "this haven and Sabbath of human contemplations" (*ibid.*, p. 471) Bacon "reserve[s] to the end" (*ibid.*, p. 471, my square brackets), whereat, in order to proceed, he must "step out of the bark of human reason and enter into the ship of the church" *Advancement of Learning* (F. Bacon, 1882a, p. 345). No sooner having done so, he pronounces that, save for "making a few remarks upon it" (*ibid.*, p. 346), he had better to remain silent and proceeds relatively little further in subdividing Sacred or Inspired Divinity.

Bacon does though differentiate it, Divine Revelation or Sacred Theology from



Notes: (1) Divine Revelation (2) A division of Philosophy not borrowed from Divine Revelation.

Source: Constructed by Ian Eddington from Bacon, F. (1869). *Advancement of Learning* (pp. 470 - 471). Cambridge: Riverside Press. (F. Bacon, 1863b).

philosophy on the sense information side of the hierarchy illustrated on page 494 and is to be treated scientifically as discussed further beginning on page 500.

Natural Theology which might also be called Divine Philosophy *Advancement of Learning* (F. Bacon, n. d.-a, p. 477), which branch of philosophy, irrespective of its name, he would not borrow from Divine Revelation. Natural Theology, "of which ... [he] will speak hereafter" (*ibid.*, p. 471) is rather a division of

Thus says Bacon "Sacred Theology ought to be derived from the word and oracles of God, and not from the light of nature, or the dictates of reason" *Advancement of Learning* (F. Bacon, 1882a, p. 347). Morals and mysteries of religion are the stuff of

Divine Revelation except that under Natural Theology mankind can glean some dim understanding of good and evil, justice and injustice, virtue and vice from the light of nature, first because understanding occupies sense, Induction, and reason which are in turn part of God’s made laws of heaven and earth, and second because matters of good and evil spark the human mind through conscience which is “a relic of primitive and original purity” (ibid., p. 348). Carefully confining himself to the

<p>The Nature of Theology</p> <p>“Theology therefore in like manner consists either of Sacred History, or of Parables, which are a divine poesy, or of Doctrines and Precepts, which are a perennial philosophy. For as for that part which seems supernumerary, which is Prophecy, it is but a kind of history: for divine history has this prerogative over human, that the narration may be before the event, as well as after” Advancement of Learning (F. Bacon, n. d.-a, p. 409).</p>
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manner in which Divine Theology may be imparted Bacon asks that three works be prepared: first a “temperate and careful treatise ... [which] as a kind of divine logic, should lay down proper precepts touching the use of human reason in theology” (ibid., p. 351) and which he would call *Sophron* or *The Legitimate*

Use of Human Reason in Divine Subjects, second to preserve the peace of the church that a “treatise on the degrees of Unity in the kingdom of God” (ibid., p. 353) be provided—it would clarify what may or may not be understood about matters such as “one Lord, one Faith, one Baptism &c” (ibid., p. 352)—and third, a treatise which he would call *Emanations of the Scriptures* addressing how the scriptures might be interpreted. Otherwise he would leave matters of Divine Revelation to men of the church.

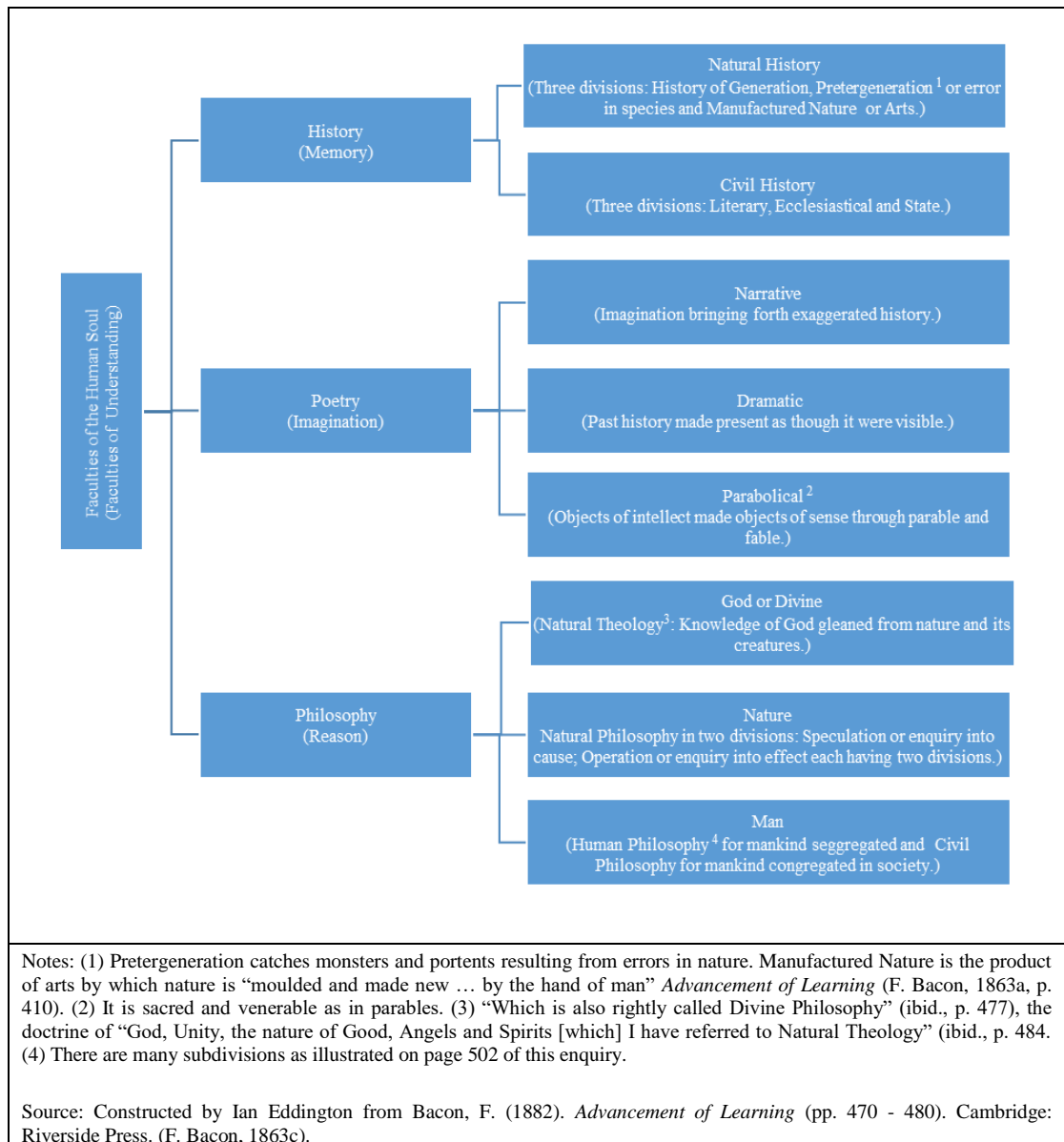
On the sensory side, the so-called other, separated from the so-called one earlier mentioned on page 494, there are three kinds of knowledge corresponding with three faculties of the human soul: History begotten by memory, Poesy, henceforth Poetry begotten by imagination, and Philosophy, begotten by reason, and these first divisions subdivide further as shown in Table 53 on page 496. Bacon uses the word Philosophy *qua* Science narrowly to signify the three knowledge outcomes of reason as shown in the bottom three right hand cells of Table 53 and broadly to signify all sensory knowledge outcomes, namely, those of memory, imagination and reason. The three divisions are related thus:

All History, excellent King, walks upon the earth, and performs the office rather of a guide than of a light; whereas Poesy is as a dream of learning; a thing sweet and varied, and that would be thought, to have in it something divine; a character which dreams likewise affect. But now it is time for me to awake, and rising above the earth,

to wing my way through the clear air of Philosophy and the Sciences. *Advancement of Learning* (F. Bacon, n. d.-a, p. 470)

Reading from the top of Table 53 on page 496 History, which for Bacon is the same

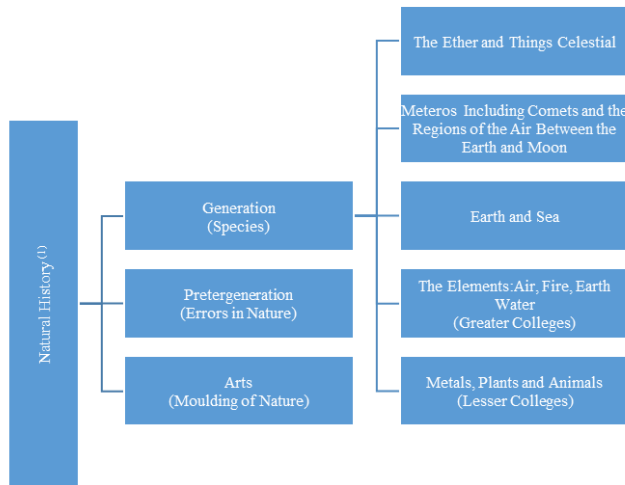
Table 53: Francis Bacon’s General Classification of Faculties of the Soul and Their Associated Categories of Knowledge



thing as experience *Description Towards a Natural and Experimental History* (F. Bacon, 1863g, p. 408), has as its object “individuals [entities] which are circumscribed by place and time” *De Augmentis Scientiaurum* (F. Bacon, 1863f, p. 407, my square brackets) and he divides History into Natural History and Civil History.

Natural History, which Bacon calls Mother History or Primary History *Description*

Bacon's Subdivisions of Natural History



Notes: (1). Continues from Table 53 on page 496. A second mentioned division of Natural History which divides into Narrative and Inductive and prescribes the use and end (sic) of Natural History is not shown.

Source: Constructed by Ian Eddington from Bacon, F. (n. d.). *De Augmentis Scientiaurum*. (pp. 385, 409 – 418, 437 - 439). Boston: Houghton, Mifflin and Company. (F. Bacon, n. d.-a).

are defined by their objects.

The first subdivision, generation of the species, has liberty or freedom in nature as its object and is further subdivided into five divisions as illustrated on page 497. The second subdivision, pretergeneration, has error in nature, for example monsters and freaks and their mineral and vegetable equivalents, as its object, and the third subdivision, manufacturing and the arts, has artificiality in nature as its object. Arts may be thought of as artificial products, manufactured things made through application of scientific laws. The three thus cover liberty, error and bonds in nature *Aphorisms on the Composition of the Primary History Advancement of Learning* (F. Bacon, 1882a, p. 357). Bacon is “more induced to set down the History of the Arts as a species of Natural History” (F. Bacon, n. d.-a, p. 410) which History of the Arts, he variously calls Experimental History, or History of Arts and Nature as Changed by Man (F. Bacon, 1863g, p. 362), and in it he would include mechanical arts, the operative side of the liberal sciences, and arts yet to eventuate (ibid., p. 362).

Towards a Natural and Experimental History (F. Bacon, 1863g, p. 355) or Natural and Experimental History, is “the primary matter of philosophy” *De Augmentis Scientiaurum* (F. Bacon, 1863f, p. 416), that “such as may serve to build philosophy upon” (ibid., p. 353). It contains the “primary material of philosophy and the stuff and subject-matter for true induction” (ibid., p. 358) and its three subdivisions in turn

Bacon's subdivisions of the second major division of History, that is, Civil History,

Of Natural or Experimental History: Part of Bacon's Desperate Plea for Patronage of His Project

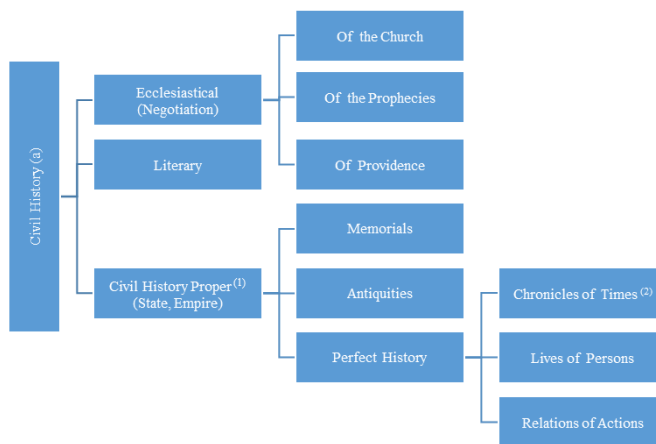
Meanwhile what I have often said I must here emphatically repeat; that if all the wits of all the ages had met or shall hereafter meet together; if the whole human race had applied or shall hereafter apply themselves to philosophy, and the whole earth had been or shall be nothing but academies and colleges and schools of learned men; still without a natural and experimental history such as I am going to prescribe, no progress worthy of the human race could have been made or can be made in philosophy and the sciences. Whereas on the other hand, let such a history be once provided and well set forth, and let there be added to it such auxiliary and lightgiving experiments as in the very course of interpretation will present themselves or will have to be found out and the investigation of nature and of all sciences will be the work of a few years. *Description Towards a Natural and Experimental History*. (F. Bacon, 1863g, p. 354).

as illustrated in Table 53 on page 496 are Ecclesiastical, Literary and Civil History Proper of State or Empire and these subdivide further as illustrated on page 498. Bacon's *Catalogue of Particular Histories by Title* (F. Bacon, 1863d, pp. 373 -

381) contains an impressive list of 130 histories to be undertaken and the breadth and variability of the subject matter provides one measure of the extent to which Bacon took "all knowledge to be ... [his] province" (F. Bacon, 1842, p. 2, my square brackets).

Poetry, as Table 53 on page 496 reveals, is the second major sense-side division of understanding. Its object is: "... individuals; that is, ... individuals invented in

Bacon's Subdivisions of Civil History



Notes: (a) Continues from Table 53 on page 496. (1) There is a second subdivision of Civil History Proper into Pure and Mixed. (2) There is a further two-fold subdivision of now-called Histories of Times, into Universals and Particulars and Annals and Journals. Bacon's adds two appendices to History which respectively treat of History According to Words and, History According to Actions, the former treating of Speeches, Letters, and Apophthegms.

Source: Constructed by Ian Eddington from Bacon, F. (n. d.). *De Augmentis Scientiarum*. (pp. 386, 418 - 439). Boston: Houghton, Mifflin and Company. (F. Bacon, n. d.-a).

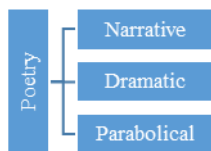
1863a, pp. 407 - 408).

imitation of those which are the subject of true history; yet with this difference, that it commonly exceeds the measure of nature, joining at pleasure things which in nature would never have come together, and introducing things which in nature would never have come to pass" *Advancement of Learning* (F. Bacon,

Perhaps Bacon enjoyed selected poems of some of the now-called metaphysical poets (Donne, 1864; G. Herbert, 1907) but then, wow, he lived amongst foul-and-fair-dagger-before-me-fearful-for-its-superstitious-age poetic imagery, irrespective of all those conjectures about the identity of the real Shakespeare. He lived in the age of the gunpowder plot, the publication of Shakespeare's first folio, the establishment of the Jamestown, Jamaica colony, the landing of Mayflower in North America and appointment of his friend Ben Jonson as first Poet Laureate.

Poetry is subdivided into three divisions, Narrative which imitates History and exaggerates beyond probability, Dramatic which has the theatre for its world and makes past History visible, and Parabolical, something sacred and revered which renders

Bacon's Subdivisions of Poetry



Source: Constructed by Ian Eddington from Bacon, F. (1882). *Advancement of Learning*. (pp. 439 - 469). Boston: Taggard and Thompson. (F. Bacon, 1863e).

440). For example, as parable it might join divinity with humanity and as fable it might carry mystery to matters of state and philosophy *Advancement of Learning* (F. Bacon, 1863b, p. 1863b, pp. 439 - 469). Bacon's *On Principles and Origins According to the Fables of Cupid and Coelum* (F. Bacon, 1882e) provides a glimpse of Bacon employing what he calls fable and parable in exegesis of essences having no earlier cause, God excepted, older or first Cupid himself having no parent or cause, and as well, exegesis of Democritean atomism and of whether or not the number of principles are infinite, after the fable of Coelum (ibid., pp. 463 - 480). His *Wisdom of the Ancients* (F. Bacon, 1884, pp. 324 - 425) contains thirty-one applications of such writing which, for Bacon, is relatively direct in style. Bacon's explanation of poetry provides a rare insight into utility of poetry in an era when imagination could not express itself through photography, moving film and television, radio, digital imagery and sound, and holograms, a time when written word could mainly ally with sculpture, painting, singing, balcony music and sound effects from cannon and fireworks.

Gigliani (2012, pp. 62 - 86) develops a notion that *fabula* is to history what *materia* is to nature. *Historia* is history and *fabula* is fable (ibid., p. 65) and Natural Philosophy is predicated on a body of knowledge called *Materia* which is engendered

by history and fable. *Materia*—the reader is appraised of its specific meaning in the last sentence of the paper (ibid., p. 86)—turns out to be a necessary body of knowledge without which the exercise of thinking may not be sustained. In between, Giglioni argues the semantics of history and fable to conjecture, *inter alia*, that for Bacon there can be no such thing as a pure use of reason, of which condition he leaves the reader informed only that pure use of reason is something different from reasoning about nature’s inner appetites which is pronounced impure (ibid., p. 62).

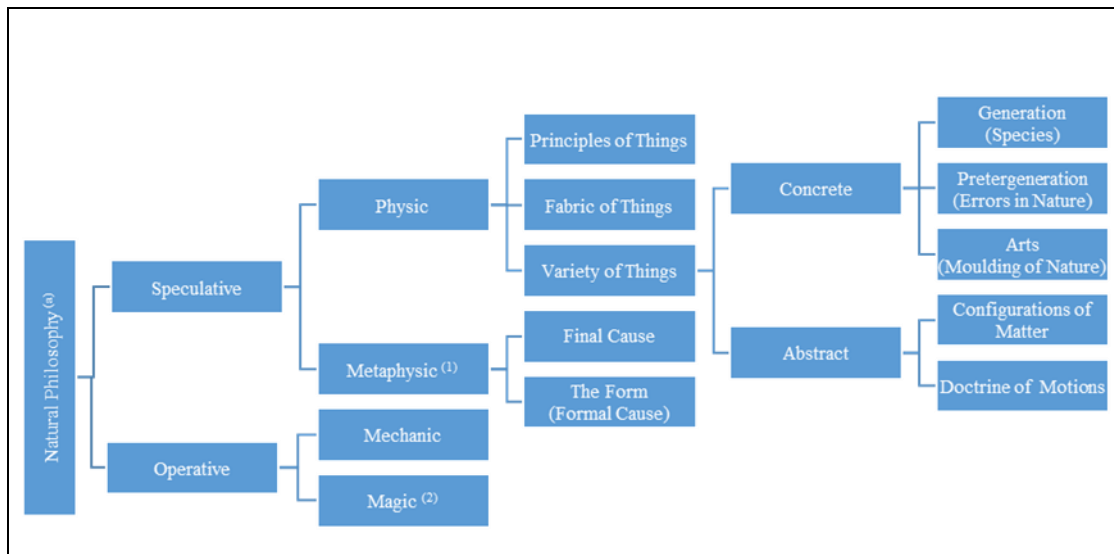
Philosophy, the third major division of understanding illustrated in Table 53 on page 496, divides into Natural Theology, Natural Philosophy and Philosophy of Man, the rationale for the division being the respective predication of each of the named categories on their objects God, nature and man(kind). Philosophy’s object is not individuals or their immediate sense impressions but rather “abstract notions derived from these impressions; in the composition and division whereof according to the law of nature and fact its business lies” *Advancement of Learning* (F. Bacon, 1863a, p. 408).

Natural Theology is knowledge about God obtained from the study of God’s creatures. Enquiry about God’s existence, wisdom, prescience and power is permissible under Natural Theology *Advancement of Learning* (F. Bacon, 1863f, p. 478), likewise inquiry about the nature of angels and spirits (ibid., p. 479) and “it is no more unlawful to inquire the nature of evil spirits in Natural Theology, than to inquire the force of poisons in Physics, or the nature of vice in Ethics.” (ibid., p. 479 – 480). As for the mysteries of faith: “Give unto faith the things which are faith’s” (ibid., p. 478). It is not safe for Natural Theology to go there.

Natural Philosophy is knowledge about cause and effect and its subdivisions are illustrated in the hierarchy on page 501. Natural Philosophy is discussed further beginning on page 502.

Philosophy of Man is knowledge about mankind. As shown in the bottom right hand subdivision of Table 53 on page 496, Philosophy of Man divides into Human Philosophy and Civil Philosophy respectively according to its focus on either

Table 54: Bacon’s Subdivisions of Natural Philosophy



Notes: (a) The hierarchy continues from Table 53 on page 496. Of Natural Philosophy: “From the two kinds of axioms which have been spoken of, arises a just division of philosophy and the sciences ... Thus, let the investigation of Forms, which are (in the eye of reason at least, and in their essential law) eternal and immutable, constitute Metaphysics; and let the investigation of the Efficient Cause, and of Matter, and of the Latent Process, and the Latent Configuration (all of which have reference to the common and ordinary course of nature, not to her eternal and fundamental laws) constitute Physics. And to these let there be subordinate two practical divisions: to Physics, Mechanics; to Metaphysics, what (in purer sense of the word) I call Magic, on account of the broadness of the ways it moves in, and its greater command over nature” *Novum Organum* (F. Bacon, 1863f, pp. 177 - 178). (1) “Certainly nothing beyond nature: but of nature itself much the most excellent part” *Advancement of Learning* (F. Bacon, 1863f, p. 484). Thus Metaphysic has a new usage and understanding in Bacon’s new beginning, as the enquiry text explains. (2) Likewise Magic too has a new usage as also explained in the enquiry text. Bacon does not exclude the words Final Cause as a category from Metaphysics *per se*—“Division of Speculative doctrine concerning nature, into Physic (special) and Metaphysic. Whereof Physic inquires of the Efficient Cause and the Material; Metaphysic of the Final Cause and the Form” *De Augmentis Scientiarum* (F. Bacon, n. d.-i, p. 388). Again “It follows that the true difference between them [Physic and Metaphysic] must be drawn from the nature of the causes that they inquire into. And therefore to speak plain and go no further about, Physic inquires and handles the Material and Efficient Causes, Metaphysic the Formal and Final” (*ibid.*, p. 485). Bacon does though preclude use of Final Cause in Physic and operative Metaphysic. Hence in this classification of Natural Philosophy into Speculative and Operative and the first subdivisions of these, only Formal Cause is shown under Metaphysic. Bacon would have two appendices for the operative side: *Inventory of the Possessions of Man* and *Catalogue of the Polychrests* which are “things of general use” (F. Bacon, 1863e, p. 512), together with *A Great Appendix on Mathematic* relevant to both speculative and operative sides (*ibid.*, p. 517 – 520).

Source: Constructed by Ian Eddington from Bacon, F. (n. d.). *De Augmentis Scientiarum*. (pp. 387 – 388, 480 - 517). Boston: Houghton, Mifflin and Company.(F. Bacon, n. d.-a).

man(kind) *qua* man, that is man segregated, or man(kind) in society, that is man(kind) congregated. Ongoing subdivisions of both Human and Civil Philosophy are shown in the accompanying boxed hierarchy on page 502 and Bacon groups Ethics with Logic under Use of Faculty as a subdivision of rational soul as shown in the purple-fill subdivision of that page 502 hierarchy. Further discussion of Philosophy of Man is held over until discussion of Ethics on enquiry pages 519 to page 558, including logic’s service to it, on pages 523 to 525. Again, for Bacon, the terms Science and philosophy are used interchangeably so that Natural Theology and Human Philosophy are, like Natural Philosophy, recipients of Bacon’s inductive method which is discussed below beginning on page 512.

In his division of Natural Philosophy into a speculative side consisting of Physic and Metaphysic, and an operative side consisting of Mechanic and Magic as set out in the attendant hierarchy on page 501 Bacon attributes new and specific meanings to the

Bacon's Subdivisions of Philosophy of Man



Notes: (a) Continued from Bottom right cell of Table 53 on page 496. (1) The made soul or spirit through which the divine or rational soul operates in mankind, not simply the irrational sensitive soul shared with the beasts. (2) Logic subdivides into Invention, Judgement, Retention, and Tradition with further subdivisions as illustrated on page 523 and Ethics further subdivides into the Exemplar or Template of the Good exemplifying the nature of the good, and Culture of the Mind which sets out the rules for attainment of the Exemplar of the Good as illustrated on page 522.

Source: Constructed by Ian Eddington from Bacon, F. (1863). *De Augmentis Scientiarum*. (pp. 389 - 394). In Spedding, J. Ellis, R. and Heath, D. *The Works of Francis Bacon*. Boston: Taggard and Thompson (F. Bacon, 1863f); Bacon, F. (1882). *De Augmentis Scientiarum*. (pp. 13 - 357). Cambridge: Riverside Press. (F. Bacon, 1882a).

terms Physic, Metaphysic, Mechanic and Magic employed there and also to the terms Induction and Form employed elsewhere in association with Science.

He “desires men to observe that ... [he] use[s] the word metaphysic in a different

Metaphysic and Its Object

“So then always that knowledge is worthiest which least burdens the intellect with multiplicity; and this appears to be Metaphysic, as that which considers chiefly the simple forms of things (which I have above termed forms of the first class); since although few in number, yet in their commensurations and co-ordinations they make all this variety” *Advancement of Learning* (F. Bacon, n. d.-a, pp. 507 - 508).

“The second respect which ennobles this part of Metaphysic, is that it enfranchises the power of men to the greatest liberty, and leads it to the widest and most extensive field of operation ... it being less restrained and tied in operation, either to the basis of the matter or to the condition of the efficient...” *Advancement of Learning* (F. Bacon, n. d.-a, p. 508).

“Thus, let the investigation of Forms, which are (in the eye of reason at least, and in their essential law) eternal and immutable, constitute Metaphysics; and let the investigation of the Efficient Cause, and of Matter, and of the Latent Process, and the Latent Configuration (all of which have reference to the common and ordinary course of nature, not to her eternal and fundamental laws) constitute Physics. And to these let there be subordinate two practical divisions: to Physics, Mechanics; to Metaphysics, what (in purer sense of the word) I call Magic, on account of the broadness of the ways it moves in, and its greater command over nature” *New Organon* (F. Bacon, n. d.-d, pp. 177 - 178).

sense from that which is commonly received” (F. Bacon, 1863f, p. 482) and in respect of this usage, and usage in general, where his “conceptions and notions are novel and differ from the ancient” (ibid., p. 482), his intention is to first retain “with scrupulous care the ancient terms” (ibid., p. 482) as signifiers, carriers and appropriate markers of his nuance and novelty of meaning. Those ancient terms he speaks of are not those of Aristotle and the Greeks, but are true ancient terms of earlier antiquity. Thus for example Metaphysic(s) is something different from Aristotle’s metaphysics and the Schoolmen’s renderings of it. In his next ink Bacon is again severe and spiteful on Aristotle and Plato, likening them to thieves of terms. Generally Bacon is able to acknowledge considerable wit in greats like Aristotle and

Plato, and others too, but again here, as earlier cited, he might be named by some to be at what, in modern terms, might be called a mode of Greek bashing.

Metaphysic says Bacon is not Primitive or Summary Philosophy “the common ancestor to all knowledge” (F. Bacon, 1863f, p. 484) which has for its objects both “common principles and axioms which are promiscuous and indifferent to several sciences” (ibid., p. 484) nor the “Relative and Adventitious Conditions of Essences (which I have termed Transcendentals); as Much, Little; Like, Unlike; Possible, Impossible, and the rest; with this provision alone, that they be handled as they have efficacy in nature, and not logically” (ibid., p. 484). Rather, “Metaphysic is a branch or portion of Natural Philosophy” (ibid., p. 484). It is “certainly nothing beyond nature; but of nature itself much the most excellent part” (ibid., p. 484) and its essential nature may be understood by differentiating it from Physic. Thus, says Bacon, Physic addresses that which is most inherent in matter and therefore

transitory, vague and variable and does not search for the constant (ibid., p. 485)—his example being that Physic would study fire *qua* heat applied to wax, its effect

On Bacon's Reform of Magic ^(a)

The Fourth Section is, the Hiftory of Sympathy and Antipathy. Of this we have only the *Aditus* annexed to that of Hifioria Gravis & Levis, and a few Infiances in his Sylva Sylvarum (r). In this Hiftory he defigned to avoid Magical Fancies, which raife the Mind, in thofe things, to an un-due height and pretence of occultnefs of Quality, which layeth the Mind afleep, and preventeth further Inquiry into thefe ufeul fecrets of Nature. *Baconiana* (Tennison, 1679, p. 39).

The *Seventh* and greateft Branch of the *Third Part of the Inftauration* is his Sylva Sylvarum, or Natural Hiftory, which containeth many Materials for the building of Philofophy, as the Organum doth *Directions* for the *Work*. It is an Hiftory not only of Nature freely moving in her Courfe, (as in the production of Meteors, Plants, Minerals); but alfo of Nature in conftRAINT, and vexed and tortur'd by Humane Art and Experiment. And it is not an Hiftory of fuch things orderly ranged; but thrown into an Heap. For his Lordfhip, that he might not difcourage other Collectors, did not caft this Book into exact Method; for which reafon it hath the lefs Ornament, but not much the left Ufe. In this Book are contain'd Experiments of Light, and Experiments of Ufe (as his Lordfhip was wont to diftinguifh); and amongft them fome *Extraordinary* and others *Common*. He underftood that what was Common in one Country, might be a Rarity in another: For which Reafon, Dr. *Caius* when in Italy, thought it worth his pains to make a large and Elegant Defcription of *Our way of Brewing*. His Lordfhip alfo knew well, that an Experiment manifeft to the Vulgar, was a good ground for the Wife to build further upon. And himfelf rendred *Common ones extraordinary* by *Admonitions*, for further Trials and Improvements. Hence his Lordfhip took occafion to fay (w), that his writing of Sylva Sylvarum, was (to fpeak properly) not a Natural Hiftory, but a high kind of Natural Magic: Because it was not only a defcription of Nature, but a breaking of Nature into great and ftrange Works⁽¹⁾. *Baconiana* (Tennison, 1679, pp. 41 - 42).

Notes: (a) Letter s is fometimes represented by letter f. (1) Here experimental Science = magic.

being melting or fire *qua* heat applied to clay, its effect being hardening—whereas Metaphysic, which focuses on the unified and constant, would address motion as the form or essence or one difference of heat which unites and explains all identified presences of it by Physic.

Physic walks to Metaphysic in two steps, first the finding of various accidents in bodies and creatures, a lion may be brown or white, and fecondly the finding of natures, for example heat or gravity, in various fubftances, heat for example being present in fire, fuflight, quicklime, decomposition and the like, and in thefe two steps it bridges Natural Hiftory with Metaphysic. In Natural Hiftory mode the mind works at obferving, compiling and relating the facts—Bacon's word—of fense to Physic. In Physic mode the mind may investigate the variable, that is, the material and efficient caufes, amongst the reported obfervations of Natural Hiftory. Metaphysic in turn investigates the formal caufe of fimple natures fuch as “dense, rare, hot, cold, heavy, light, tangible, pneumatic, volatile, fixed, and the like, as well configurations as motions, caufes” (ibid., p. 505) inherent in cases Physic brings to it, Physic as earlier explained, being conftained to investigate only at the levels

of material and efficient caufe. Thus again, in the cafe of fire difcuffed in the previous paragraph, Metaphysic would look beyond fire, an accident of hotnefs or heat, and proceed to ifolating the form of hotnefs or heat per fe which, as Bacon has elfewhere revealed, is motion *Novum Organum* (F. Bacon, 1900a, p. 391).

Such Metaphysic, hitherto neglected says Bacon, lies at the heart of his newness and novelty. It collects and unites the axioms of sciences “into more general ones, and such as may comprehend all individual cases” *De Augmentis Scientiarum* (F. Bacon, 1863f, p. 507) doing so without the help of final cause, its focus being on unity and Forms of the various simple natures of which compound beings consist. The one to whom Metaphysic has revealed the Form of a simple nature “knows also the utmost possibility of superinducing that nature upon every variety of matter, and so is less restrained and tied in operation, either to the basis of the matter [material cause] or to the condition of the efficient [efficient cause]” (ibid., p. 508, my square brackets). Thus, by virtue of Metaphysic, of which more later, human understanding may employ formal cause in scientific interpretation of nature. Again, Bacon does not banish the words final cause from Metaphysic *per se*: “And therefore to speak plain and go no further about, Physic inquires and handles the Material and Efficient Causes, Metaphysic the Formal and Final” *De Augmentis Scientiarum* (F. Bacon, n. d.-i, p. 485). He does though preclude Metaphysic’s use of final cause in natural philosophy *qua* Science “the inquisition of Final Causes ... [being] barren, and like a virgin consecrated to God produces nothing” *De Augmentis Scientiarum* (F. Bacon, n. d.-a, p. 512).

Bacon’s identification of speculative and operative dimensions of Physic and Metaphysic is germane to his reformulation of Science. As earlier illustrated in the hierarchy box on page 501 Bacon has Physic and Metaphysic working on the side of Speculative Natural Philosophy and Mechanic and Magic, respective twins of Physic and Metaphysic, working on the Operative side of Natural Philosophy. He explains Mechanic as the operative side of the “inquisition of Efficient and Material causes” (ibid., p. 512) and Magic as the Operative side of “the inquisition of Forms and Metaphysic” (ibid., p. 512). Bacon understands Magic “as the science which applies the knowledge of hidden forms to the production of wonderful operation; and by uniting (as they say) actives with passives, displays the wonderful works of nature.” (ibid., p. 514). It is not the superstitious quackery that “flutters about” (ibid., p. 514) in astrology, and some parts of alchemy. Again, on the face of it, Bacon’s words final cause are not expelled from Metaphysics *per se* as a division of knowledge but they have no place in Metaphysic *qua* Science.

In short, Natural History, by observation and experiment, accumulates knowledge in

Bacon's Science: Domain by Interrogation Frame

DOMAINS →	Operative	Mechanic	Magic
	Speculative	Physic	Metaphysic
		Efficient Material	Formal
INTERROGATION FIELDS OR FRAMES →			

Source: Constructed by Ian Eddington from Bacon, F. (1882). *De Augmentis Scientiarum* (pp. 480 - 517). Boston: Taggard and Thompson. (F. Bacon, 1863a)..

readiness for further processing by Physic and Metaphysic and their respective twins Mechanic and Magic in search of simple natures or forms for further application through superinduction. This further processing occurs in compartments of new Science praxis framed by differing scientific domain and interrogation field subdivisions as shown in the accompanying illustration on page 506. In a speculative domain Physic addresses efficient and material causes of simple natures in individual bodies and Metaphysic addresses Forms,

those laws or causes common to various bodies in which differing groupings of simple natures are found present. In an Operative domain Mechanic, *qua* twin of

Physic educes simple natures of efficient and material being in various individual bodies and Magic *qua* twin of Metaphysic educes Form, and may apply it, that law or cause accounting for the common presence of those simple natures in various individual beings identified by Physics, in superinduction. In this manner Metaphysic and Magic are respectively superior Sciences than Physic and Mechanic. My own reading of Bacon is that those domain and interrogation frame borders as I have called them can, cognitively, hardly be strictly mutually exclusive, but rather intersecting or porous sufficient to allow a seamless unified system. Mutual exclusivity of Bacon's knowledge divisions remains a question of scholarly interest as

Superinduction and Where it Fits In
 "The rule or axiom for the transformation of bodies is of two kinds. The first regards a body as a troop or collection of simple natures. In gold, for example, the following properties meet. It is yellow in colour, heavy up to a certain weight; malleable or ductile to a certain degree of extension; it is not volatile, and loses none of its substance by the action of fire; it turns into a liquid with a certain degree of fluidity; it is separated and dissolved by particular means; and so on for the other natures which meet in gold. This kind of axiom, therefore, deduces the thing from the forms of simple natures. For he who knows the forms of yellow, weight, ductility, fixity, fluidity, solution, and so on, and the methods for superinducing them, and their gradations and modes, will make it his care to have them joined together in some body, whence may follow the transformation of that body into gold. ... It must be said however that this mode of operation (which looks to simple natures though in a compound body) proceeds from what in nature is constant and eternal and universal, and opens broad roads to human power, such as (in the present state of things) human thought can scarcely comprehend or anticipate" *Novum Organum* (F. Bacon, n. d.-e, pp. 171 - 172).

the content of text box on page 507 attests.

So far in this section I have addressed Bacon's usage of the terms Physic, Metaphysic, Mechanic, and Magic and the nuance Bacon attributes to them. I have

also flagged Bacon's nuanced usages of the terms Induction and Form. I discuss

On Mutual Exclusivity of Bacon's Divisions of Knowledge

Bacon's impressive and intricate hierarchy of knowledge, although quickly challenged during the 16th and 17th centuries (Hume, 1902, 2011; Kant, 1952a, 1952b, 1952c; Locke, 1912) continues to be of scholarly interest. For example Anstey (2012, pp. 11 - 31) reasons that within Bacon's divisions of knowledge as these are set down in 1605 in *Advancement of Learning* (F. Bacon, 1882a), and subsequently in 1623 in *De Dignitate et Augmentis Scientiarum* (F. Bacon, n. d.-a), Natural Philosophy converges and overlaps with Natural History, they not being discrete categories. Consequently Bacon's distinction between speculative and operative Natural Philosophy differs from that employed in methodology used by members of the early Royal Society. A recent paper by Manzo is generally relevant in respect of the question of mutual exclusiveness or otherwise of Bacon's categorisation of human learning. Manzo (2012, pp. 32 - 61) compares Bacon's theory and practice of Natural History with those of Civil History through exegesis of the ways in which they connect with Natural and Human Philosophy and finds, in spite of their different subject content, sufficient commonality in methodology and assumption to suggest convergence of concept in them. Causes or axioms *qua* theoretical end-products of Natural History and precepts *qua* speculative outcomes of Perfect Civil History are sufficiently simpatico through their commonality as to affect change in both the state of nature and of man, respectively.

In turn, Locke's and Kant's hierarchies of knowledge with their insightful and intricate subdivisions, and in spite of their brilliance, also proved clinically unworkable during the march of practical Science, and in part because of mutual exclusiveness of division issues, yet on a basis of deep introspection of mind discerning mind, such hierarchies are so impressive. Today's neuroscientists, who seek to locate mind function to particular regions of the physical brain also appear in turn to be facing problems of definitional mutual exclusiveness in their attempts to match grey-matter regions with specific operative sensory function (Oscar-Berman, 2004, pp. 159 - 160; Toga & Mazziotta, 2002, pp. 1 - 32). Likewise, in immunology, the blood-brain barrier has lost some of its status as a safe working assumption (D'Ambrosio, 2005, pp. 244 - 246). To claim that the beautiful periodic table with its classification of elements bound with Bohr's construct of the atom may one day become obsolete, is to ask to be laughed out of court, and so too is to suggest that biological taxonomies after the heritage of Linnaeus and Darwin may well fall to new classifications predicated on genome/phenome logic. Yet in the fullness of time such changes may well eventuate.

Induction further beginning on page 516. Bacon's nuanced usage of the term Form is an important marker of his departure from Aristotelian tradition in Science and political philosophy. For example, Aphorisms 11 to 20 of Book 2 of *Novum Organum* (F. Bacon, 1952b, pp. 140 - 153) contain Bacon's derivation of the Form of heat which derivation he uses to explain that part of his method called "the first vintage" (ibid., p. 152). Here Form is equivalent to true definition "relative to the universe and not to the sense" (ibid.). Elsewhere Forms are called "true differences of things (which are in fact the laws of pure act" *Novum Organum* (F. Bacon, n. d.-d, p. 107) or "essences" of things *De Augmentis Scientiarum* (F. Bacon, n. d.-a, pp. 410, 506) or the "true specific difference, or nature-engendering

nature, or source of emanation (for these are the terms which come nearest to a description of the thing)" *Novum Organum* (F. Bacon, n. d.-d, p. 167). To discover Form "is the work and aim of Human Knowledge" (ibid., p. 167).

The simple natures, for which Forms may be sought are few in number *De Augmentis Scientiarum* (F. Bacon, 1863f, p. 508), hot, cold, dense rare, heavy, light, gravity, tangible, pneumatic, volatile, fixed, and the like—the last phrase growing the few-in-number to some forty-one possible candidates *Advancement of*

Learning (F. Bacon, n. d.-a, p. 498) mentioned by Bacon. They are Forms of the first class (F. Bacon, 1863f, pp. 505-506, 508). Some possible forty-one simple Forms, some combination and permutations superinduction headache indeed, but then again, given the breadth of his reading Bacon might have been well aware of ancient estimates of combinations and permutations of ten axioms resulting in such numbers as more than 1,000,000 by Chrysippus (BC 280 - 207), or of $(101,049)^6$ by Hipparchus, (BC 190 - 120), or of a reported estimate of 1,002,000,000,000 by Xenocrates (BC c.350) for the number of Greek alphabet syllables (D. Smith, 1958, pp. 524 - 531)—such quantities now being able to be compared with those serving human genome/phenome matrices, and dare it be said alphabets, there being to date four letters in the human genome alphabet and six billion words in its dictionary.

Bacon’s knowledge of numbers might also lie behind his admission that knowledge of the Forms of compound beings might exhaust human reason. The first expression of the binomial theorem in the form $nCr = n(n - 1) (n-s) \dots(n-r+1)/r!$ occurred in

Bacon on Mathematics in Science

“And inquiries into nature have the best result, when they begin with physics and end in mathematics. Again, let no one be afraid of high numbers or minute fractions. For in dealing with numbers it is as easy to set down or conceive a thousand as one, or the thousandth part of an integer as an integer itself” (F. Bacon, n. d.-a, p. 177). In his *Great Appendix on Natural Philosophy both Speculative and Practical* (F. Bacon, 1898a, pp. 147 - 150) Bacon would have mathematics serve both the operative and speculative sides of philosophy illustrated in the hierarchy on page 501 of this enquiry (ibid., p. 147).

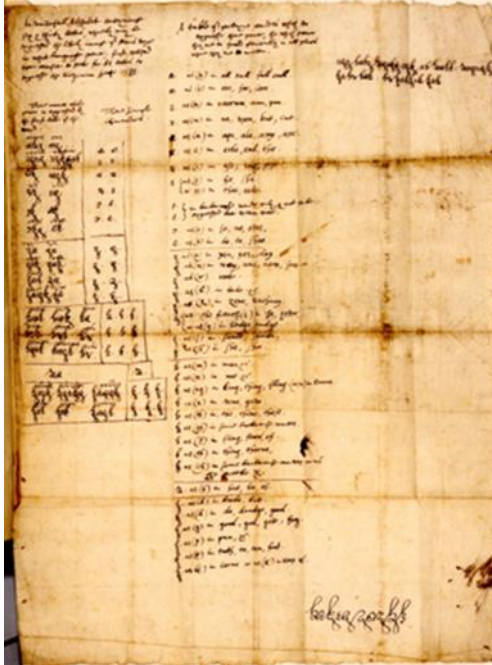
Paris in 1643 (ibid., p. 527), that is, after Bacon’s death. However as the notes to the accompanying illustration on page 509 reveal, Harriot was employing combination and permutation thinking in his analysis of language during Bacon’s lifetime. Yet Bacon’s comment on numbers reproduced

in the accompanying box on page 508 might be taken to suggest an awareness of the numbers required by some forty-one possible Forms in their combinations and permutations participation in the plethora of observable beings.

Nevertheless, Bacon employs a phoneme-letter-syllable-word-alphabet analogy in his *Novum Organum* (F. Bacon, n. d.-a, pp. 49, 152) and his *Advancement of Learning* (F. Bacon, 1863a, pp. 505 - 506, 508) in elucidation of simple Forms and their functions. Thus says Bacon, just as the few letters of the alphabet make up countless words, so the simple natures or Forms “make up and sustain the essences and forms of all substances” *Advancement of Learning* (F. Bacon, 1860b, pp. 505 - 506). Bacon’s various descriptions of the Forms cited in the enquiry text on page 507

or assembled in the information box extending over pages 510 and 511, fall into two usage conventions. One usage admits Forms as essence or definition or *differentia*, *Advancement of Learning* (F. Bacon, 1900a, p. 305), understood as the sum of the

Harriot's Rudimentary Use Combination and Permutation Thinking in His Work on Phonetics



Notes: The original is from Harriot's papers (BL Add MS 6782, f. 337) at the British Library. Stedall's argument is that permutation and combination thinking is visible in Harriot's work from the mid 1580's but to be fair to Bacon most of Harriot's work became public after Bacon's death.

Source: Cropped by Ian Eddington from Stedall, J. (2007). Symbolism, Combinations, and Visual Imagery in the Mathematics of Thomas Harriot. (p. 381). *Historia Mathematica*, 34(4), 380 - 401. (Stedall, 2007).

underived attributes which cause other attributes, that is, the sum of the essential accidents of the phenomena. The other usage admits Forms as laws or causes of natures or qualities of bodies *Novum Organum* (F. Bacon, 1900b, pp. 368 - 369; Ellis, 1861, pp. 89 - 94). In *Novum Organum* Bacon collapses the first and second groupings into a succinct statement admitting Forms as "the true differences of things (which are in fact the laws of simple action)" (F. Bacon, 1900a, p. 335). For Bacon the Forms are not Platonic ideals or abstractions nor Aristotelian entelechies, but exactly how not this latter, he does not appear to say. For example in general terms, how might motion *per se* as the Form of heat differ from motion *per se* as the entelechy of heat? Heat is not heat

without motion, and motion and heat are inseparable if heat is to be present. This conundrum notwithstanding, the Forms are actual working laws, knowledge of which gives mankind power over nature. "The forms are fictions unless they are called by the name, laws of nature" (F. Bacon, 1900c, p. 322). The accompanying box on page 512, which is a *précis* of columns 1 and 3 of Table 5 on page 54, highlight's Bacon's jump from forms *qua* geometrical shapes or unreachable numbers and presences in natures beings, or pattern templates not of this world, or entelechies, or Christ as Logos, to Forms knowable as God-ordained discernible laws of nature operable in superinduction, laws that through art may help mould nature for the benefit of mankind. Bacon's treatment of the Forms remains a topic of scholarly interest (Fowler, 1899; Gaukroger, 2001; Peltonen, 1996; Rossi, 1987; Whitaker, 1970).

The practical knowledge of Bacon's Forms is power, operative power over nature (F.

Bacon on Simple Forms

To God, truly, the Giver and Architect of Forms, and it may be to the angels and higher intelligences, it belongs to have an affirmative knowledge of forms immediately, and from the first contemplation. (F. Bacon, n. d.-d, p. 204).

I have thought it my duty besides to make a separate history of such Virtues as may be considered cardinal in nature. I mean those original passions or desires of matter which constitute the primary elements of nature; such as Dense and Rare, Hot and Cold, Solid and Fluid, Heavy and Light, and several others. (F. Bacon, n. d.-e, pp. 48 - 49).

The power of man cannot possibly be emancipated and freed from the common course of nature, and expanded and exalted to new efficient and new modes of operation, except by the revelation and discovery of Forms of this kind" *The New Organon*. (F. Bacon, n. d.-d, pp. 206 - 207).

If a man be acquainted with the cause of any nature (as whiteness or heat) in certain subjects only, his knowledge is imperfect; and if he be able to superinduce an effect on certain substances only (of those susceptible of such effect), his power is in like manner imperfect. Now if a man's knowledge be confined to the efficient and material causes (which are unstable causes, and merely vehicles, or causes which convey the form in certain cases) he may arrive at new discoveries in reference to substances in some degree similar to one another, and selected beforehand; but he does not touch the deeper boundaries of things. But whosoever be acquainted with Forms, embraces the unity of nature in substances the most unlike; and is able therefore to detect and bring to light things never yet done, and such as neither the vicissitudes of nature, nor industry in experimenting, nor accident itself, would ever have brought into act, and which would never have occurred to the thought of man. From the discovery of Forms therefore results truth in speculation and freedom in operation. *The New Organon* (F. Bacon, 1863a, pp. 168 - 169).

(Continued in the next page.)

Bacon, 1900a, p. 369) which power travels with an attendant caveat that "we increasingly pray we may administer [that Science and its power] to the advantage and happiness of mankind" *The Scaling Ladder of the Intellect* (F. Bacon, 1850c, p. 520, my square brackets) of which more later in the chapter's discussion on Ethics.

Efficient and material causes are "mere vehicles conveying form to particular substances" (F. Bacon, 1900a, p. 369) and as earlier demonstrated form, once known through Metaphysic, might be employed in Mechanic and in superinductions in Magic under Bacon's clarified meaning of that term.

Bacon claims that the "roads to human knowledge and human power lie close

together and are nearly the same" *Novum Organum* (F. Bacon, 1863f, p. 169) and in discovery of the Forms, and their use in superinduction, the contemplative should serve the active for, in respect of true Forms, the active and contemplative "are one and the same thing; and what in operation is most useful, that in knowledge is most true" (ibid., p. 171) which statement begs questions about the nobility of the operative above the speculative domain and vice versa. Truth and utility are one because they catch the "true marks of the Creator" *Novum Organum* (F. Bacon, 1900c, p. 363) as these are imprinted on, and defined in, the matter of his creatures (ibid., p. 363). In particular:

Human knowledge and human power meet in one; and where the cause is not known the effect cannot be produced. Nature to be commanded must be obeyed; and that

which in contemplation is as the cause is in operation as the rule. *Novum Organum* (F. Bacon, 1863f, pp. 67 - 68, Aphorism III)

Bacon's Induction is predicated on simple cause and effect and Hume was in turn to

Bacon on Simple Forms

(Continued from the Previous page.)

For a true and perfect rule of operation then the direction will be that it be certain, free, and disposing or leading to action. And this is the same thing with the discovery of the true Form. For the Form of a nature is such, that given the Form the nature infallibly follows. Therefore it is always present when the nature is present, and universally implies it, and is constantly inherent in it. Again, the Form is such, that if it be taken away the nature infallibly vanishes. Therefore it is always absent when the nature is absent, and implies its absence, and inheres in nothing else. Lastly, the true Form is such that it deduces the given nature from some source of being which is inherent in more natures, and which is better known in the natural order of things than the Form itself. For a true and perfect axiom of knowledge then the direction and precept will be, that another nature be discovered which is Convertible with the given nature, and yet is a limitation, of a more general nature, as of a true and real genus, Now these two directions, the one active the other contemplative, are one and the same thing; and what in operation is most useful, that in knowledge is most true. *Novum Organum* (F. Bacon, n. d.-e, pp. 170 - 171).

kick down that logic, as Bacon had kicked down Aristotelian syllogism. Successive generations however employ induction and cause and effect thinking in the cut and thrust of everyday existence, even in cases where their lives depend on them. Nevertheless, in respect of the preceding quote, Bacon's usage of obedience to nature is disputed. For example, Funari claims that it would be a mistake to interpret Bacon's

usage of obey in a sense of humble submission, before nature, of human initiative to know, and suggests that Bacon's sense is closer to observe and correctly interpret nature (Funari, 2001, p. 5) and I return to this question below in the section on Ethics. God and his spirit as final cause cannot, as earlier discussed, be known through Science.

In summary of this section—that is window (b) of the three insight opportunities identified on page 489, which treats of Bacon's classification of knowledge, his situation of Science within that classification, and his nuance of terms prescription of that Science—Bacon's Physic and Metaphysic, broadly examined, might not on the face of it be as different from received Aristotelian usage of these categories as he, Bacon, might have it believed. For Aristotle, Physics deals with individual beings subject to motion, coming to be, being and ceasing to be while for Bacon it addresses that which is most inherent in matter and therefore transitory, vague and variable and does not search for the constant. For Aristotle Metaphysic focuses on the immovable and unchanging, for Bacon it addresses the unified and constant. So much is evident from a comparison of the content of this section with that of the description of

Aristotle’s terms provided on pages 211 and 212 of this enquiry. Yet the difference lies in the detail.

For example Bacon rips metaphysics out of Aristotelian theology and places it, as

Travelling Nuance for the Term Form	
Users	Usage
Presocratic Scientists	The shapes, the things or beings, into which matter successively arranges itself.
Pythagoreans	The soul or mind found in humans and in nature as number.
Plato	The ideas - real objective existences accessible by the soul; patterns and templates through reminiscence of which the objects of the universe are able to be understood.
Aristotle	For inanimate natural beings: the entelechy of the body and that which defines what a thing is. For animate objects: “the first grade of actuality of a natural organised body” De anima II 412a25–412b (Aristotle, 1952, p. 642; 1957, 1984). It is the soul. For manufactured bodies: the ‘thisness’ or ‘thatness’ brought to proximate matter, for example the shape, a Doric column say, of wood or bronze, of which proximate matter the artefact is made.
Aquinas	Christ as logos: all nature exists in God.
Francis Bacon	True differences of things, simple Laws of Nature which constitute the essence or definition or differentia of a phenomenon <i>qua</i> the sum of the essential accidents and which may bring mankind power over nature. For Bacon, Forms, unlike entelechies, are extractable.
Thomas Hobbes	There are no Platonic universal forms. Only singulars exist in reality and universals as names are only words or signs and exist nowhere. Universals are not essences, form or essence being the dominant accident which identifies the matter of the singular being or body (Hobbes, 1913, p. 67). There are no independent formal or final causes, each of these collapses into efficient cause. Effects are caused by material and efficient causes acting together.
Source: This box is a <i>précis</i> of columns 1 and 3 of Table 5 on page 54.	

Metaphysic, within nature, the best part of nature. He then discards final cause from Metaphysic *qua* Science. He makes the inseparable entelechies *qua* forms extractable and operational as Forms or laws of nature, outside the permission of final cause. He holds that Science is not Science without experimentation insisting on a higher order of operative Mechanic and Magic working towards superinduction above the yet vital speculative Physic and Metaphysic working to supply superinduction with its Forms. His Science is boldly utilitarian being for the betterment of mankind’s estate. Bacon’s nuanced usage of the terms Physic, Metaphysic, Mechanic, Magic, Form and Induction, the latter yet to be more fully discussed, when taken together with his exclusion of final

cause from Science, are, in the methodology of this enquiry, confronting to Aristotelian syllogistic method in particular, and his received political philosophy in general.

I continue articulation of the nature of Bacon’s Science through discussion of his scientific method, the role he ascribes to Induction within that method, and the nature

of that Induction itself, which articulation constitutes the work of (c), that third window into Bacon’s Science identified on page 489.

Of the divisions and subdivisions of human understanding discussed over pages 495

Eduction

The Oxford English Dictionary’s reported first usage of the word is by Bulwer in 1649, that is after Bacon’s death, and in Bulwer’s usage it is “a leading forth or out, a putting forth” (OED, 1970c). Eduction as “the action of drawing forth, eliciting, from a state of latent, rudimentary, or potential existence; the action of educing (principles, results of calculation) from the data” (OED, 1970c. p. 45 for letter E) is tracked emerging from 1649 to 1865. On the Science and technology side Watt had, by 1782, patented eduction pipes (ibid.) which by 1829 were connected to eduction valves (ibid.). Eduction may well be a translator’s word but this speculation is not to say that it mistakes Bacon’s meaning.

to 505 with the aid of illustrative hierarchy tables, those involving the interpretation of nature fall under a precept of scientific method requiring that investigation proceed under two caveats, one pertaining to how to “educe and form axioms from experience” *Novum Organum* (F. Bacon, 1863f, p.

178) and the other pertaining to how to “deduce and derive new experiments from axioms” (ibid., p.178). The former caveat, which frames eduction of axioms, employs all of sense, memory and mind and consists of eduction of a Natural or Experimental History—made “sufficient and good” (ibid., 178), through application of “Tables and Arrangements of Instances” (ibid., p. 178)—to serve as a foundation for the latter caveat which frames application of Bacon’s true Induction and procedures of method which house it. I discuss the nature of Bacon’s Induction, and experimentation within it, below beginning on page 514.

Although the scientific method Bacon advocates appears cumbersome, he requires that natural philosophers, no matter how great their individual excellence, must conduct their investigations according to its process because it “levels men’s wits” *Novum Organum* (F. Bacon, 1900b, p. 362) and replaces much of their superiority with “most certain rules and demonstrations” (ibid., p. 362). His method of science involves arriving at the Forms or causes of things by a rigorous process of “rejections and exclusions (ibid., p. 363).

Before applying Bacon’s scientific method, investigators must first rid their minds of individual whim and preferences from which basis they ordinarily investigate nature. These whims or so-called “idols or phantoms” *Plan of the Work* (F. Bacon, n. d.-g, p. 45) of the human soul are “prejudices, false conceptions, and errors of the mind” *Advancement of Learning* (F. Bacon, 1900a, p. 306). They are explained in Table 55

on page 515, are four in number, and are induced from experience or are a kind of innate self-deception inherent in the human cognitive condition *Plan of the Work* (F. Bacon, n. d.-g, p. 45).

The idols arise in the collective human condition, and in individual nature. They also

The Idols⁽¹⁾ in a Different Cut of Ermine?

In brief, our only direct view of the mind depends on a part of that very mind, a self process that we have good reason to believe cannot provide a comprehensive and reliable account of what is going on. At first glance, after acknowledging the self as our entry into knowledge, it may appear paradoxical, not to mention ungrateful, to question its reliability. And yet that is the situation. Except for the direct window that the self opens into our pains and pleasures, the information it provides must be questioned, most certainly when the information pertains to its very nature. The good news, however, is that the self also has made reason and scientific observation possible, and reason and science, in turn, have been gradually correcting the misleading intuitions prompted by the unaided self. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain* (p. 13). Random House. Kindle Edition. (Damasio, 2010, p. 13).

(1) Mention is made of a method by which reason in scientific observation might check and balance idols. Will neuroscience bring new insights for method?

arise in culture and education and the tyranny of words, and from false philosophies and theories. They are a block to scientific enquiry *Advancement of Learning* (F. Bacon, 1900a, pp. 156 - 159). Until individuals rid themselves of idols they are restricted to studying nature through a Turner-on-a-smudgy-

day filter and, even once freed of those idols, if freed they can be, Constable-on-on-a-clear-day glimpses of nature's formal togetherness may trend on the side of exception rather than rule, nature's laws sometimes likely being so complex, so secret, so hidden, so through a glass darkly as to be beyond the reach of humans.

While the painting analogy may adduce enigma or complexity in Bacon's preparation for method, it hardly catches the full-souled painters. Constable can smudge exquisite storm pictures too (Constable, 1818 - 1819), and Turner also has an eye for detail (J. M. W. Turner, 1796, 1833). Nevertheless, once purified of the idols, mind might begin its task of mirroring nature. It must start with observation and, through eduction, systematically coordinate that accumulated sense experience into scientific propositions. Only when these propositions are made robust under further examination and experimentation, can they be used to make discoveries. As mentioned on page 513 the aim of Science is to find the causes or laws, *qua* Forms of natural phenomena, heat being explained there as a natural phenomenon or nature, the Form or cause of which Bacon was want to discover.

There are a number of initial steps in Bacon's scientific method each of which requires completion of tables "the office and use [of which he calls] the presenting a

review of instances to the understanding; and when this has been done induction may be brought into action” *Novum Organum* (F. Bacon, 1900b, p. 387, my square

Table 55: Bacon’s Idols of the Mind

Idol	Definition	Example
Of the Tribe	Flaws in the tribe of mankind: a flaw associated with the species.	Favouring the positive above the negative: three survivors of a shipwreck are evidence of Neptune’s providence, the multitude of the shipwrecked being ignored.
Of the Den or Cave	Deceptions emanating from the nature of both mind and body of the individual; accidents of the individual, and cultural and educational flaws associated with the particular man or woman.	Not being able to see the wood for the trees; being too narrowly educated as and/or to be unable to grasp whole, integrated understandings.
Of the Forum or Market	Deceptions resulting from the tyranny and insincerity of words and devaluation of the meaning of words.	Two kinds are identified in <i>Novum Organum</i> : (1) assigning a name to something that does not exist, or assigning “confused, badly defined, and hastily or irregularly abstracted from things” <i>Novum Organum</i> (F. Bacon, 1900c, p. 325) to actual objects, Bacon’s examples being fortune, the element of fire, the planetary orbits (sic), and the <i>premium mobile</i> , in Bacon’s day the outermost moving sphere of the heavens (ibid., p. 325) and (2) assignment of crude ill-fitting names to actual objects or conditions, for example moist, dense, heavy, light, and earth are examples of this type. (ibid., p. 325). The idol is inherent in conative word usage and one irremediable by strict definition in words, or in mathematical formula, because behind such definitions are more words.
Of the Theatre	Deceptions emanating from false philosophies, or theories, or the perverted laws of demonstration.	Bacon named the whole Aristotelian edifice in its Scholastic form an Idol of the Theatre.
Source: Compiled by Ian Eddington from Bacon, F. (1900). <i>Advancement of Learning</i> . (pp. 156 – 159). In J. Creighton (Ed.), <i>Advancement of Learning and Novum Organum</i> . (pp. 1 - 297). London: The Colonial Press; Bacon, F. (1900). <i>Novum Organum</i> . (pp. 319 – 332). In J. Creighton (Ed.), <i>Advancement of Learning and Novum Organum</i> . (Revised ed., pp. 311 - 368). London: The Colonial Press. (F. Bacon, 1900b).		

brackets). For example, in Aphorism 11 of Book 2 of the *Novum Organum* (F. Bacon, 1900a, p. 376), Bacon introduces his first table which he names the Table of Existence or Presence in which are recorded instances where the quality or nature under investigation, in this case heat, is present. For example, heat is present in dung, quick lime sprinkled with water, the sun’s rays, moulding vegetation, fire, animal life and other instances.

In Aphorism 12 in the same work, Bacon explains that the investigator must then complete a Table of Deviation or of Absence in Proximity *Advancement of Learning* (F. Bacon, 1900a, pp. 376 - 382) in which are recorded instances analogous to affirmative instances but in which the nature or essence is absent. Bacon’s reasonable-for-its-time example is the absence of heat in the “middle regions of the air” [because that region] “is neither sufficiently near to the body of the sun whence

the rays emanate, nor to the earth whence they are reflected” *Advancement of Learning* (F. Bacon, 1900a, p. 376, my square brackets).

To complete Bacon’s third table, his Table of Degrees or the Table of Comparative Instances *Novum Organum* (F. Bacon, 1900c, pp. 382 - 383), the researcher is process-bound to record instances where the quality or nature occurs in various intensities or degrees. For example heat is, as Bacon claims, present in saltpetre, naphtha and sulphur through their predisposition to flame but cannot be detected by touch (ibid., p. 283). Heat is present in animals to different degrees *Novum Organum* (1909b, Aph. 13, p. 384).

Bacon’s completed tables prepare the ground for Induction, in which process they are used as follows. The first table is employed to exclude natures absent when the given nature is present, the second table to exclude natures which are present when the given nature is absent, and the third table to exclude natures which increase when the given nature decreases, or decrease when the given nature increases. For example, using the first table of deviation or absence in proximity, Bacon excludes the rays from the celestial bodies as the Form, or cause of the nature of heat, because heat is found in underground fires as volcanoes frequently attest. He also rejects the earth alone as the cause of heat because heat is found in the sun’s rays which come from elsewhere else (ibid., p. 389).

Use of the tables in the manner explained in the previous paragraph produces only a “first vintage” *Novum Organum* (F. Bacon, 1900a, p. 390) of understanding. From this first vintage a “true and perfect induction” (ibid., p. 395) may proceed and Bacon provides twenty-seven “helpes to the understanding” *Novum Organum* (F. Bacon, 1900c, pp. 395 - 469) for this purpose. Bacon gives these helps or prerogatives interesting names. For example, help or prerogative 16, the instance of the door or gate (F. Bacon, 1900a, p. 424), assists understanding through the immediate action of the senses. He cites vision and the use of microscopes and telescopes. Instance 15, the instance of the cross *Novum Organum* (F. Bacon, 1900a, p. 415) helps in sorting out which Forms and natures are most tightly bound and therefore might help in weeding out unlikely explanations. The cross is suggested by an intersection of roads and on one arm of a cross might be arrayed the possible natures, on the other the

possible causes, and one intersection might appear the stronger. Only after these helps had been applied to derive the highest level of induced knowledge would deduction of new discoveries and inventions proceed.

Bacon differentiates his true Induction from that hitherto puerile kind “which decides

Aristotle’s Caution about True Knowledge
It is hard to be sure whether one knows or not; for it is hard to be sure whether one’s knowledge is based on the basic truths appropriate to each attribute—the differentia of true knowledge. We think we have scientific knowledge if we have reasoned from true and primary premises. But that is not so: the conclusion must be homogeneous with the basic facts of science. *Posterior Analytics* I 76a25 – 30 (Aristotle, 1952p, p. 104; 1960a)

from too small a number of facts” *Novum Organum* (F. Bacon, 1909b, p. 353) and “leads to uncertain conclusions” (ibid., p 353) by “being exposed to danger through one contradictory instance” (ibid., p. 353) and hello Karl Popper and falsification (Popper, 2005, pp. 15 - 19). Although he pardons Plato a little, that so called puerile induction is of the kind developed by Aristotle as discussed earlier on pages

252 to 262 of this enquiry. As the accompanying text box quotation reproduced from that discussion reveals, Aristotle is cautions about the be-all and end-all inductive capture of true knowledge.

Bacon’s method may well appear as blunt and cumbersome by comparison with present-day methodology, as on his own admission, Aristotelian syllogism seems to have appeared to Bacon himself. Irrespective of this claim, Bacon’s use of method to discover that “the very essence of heat, or the substantial self of heat, is motion and nothing else” (F. Bacon, 1900a, p. 391) is astounding. For one in Australia schooled in the wash up of the electron theory (O. Richardson, 1914, *passim*) and Nils Bohr quantum leap and periodic table articulations of atomic theory (Bohr, 1913; Kragh, 2012, p. 33), especially one who conscientiously drew successive circular periodic table proton-neutron-electron atoms, it might be difficult, but most likely incorrect, to imagine Bacon not, in some way, invoking thoughts of atoms in his explanation of heat *qua* motion. However such speculation is on thin ice: all of Bacon’s references to atoms and their existence in both *Advancement of Learning* and *Novum Organum* are negative or dismissive of their existence and when writing of movement in his derivation of heat, and elsewhere, his preferred word is particles. The wash up of the electron and Bohr atom continues to this day in secondary school Physics in Australia as an aid to explanation of kinetic theory *qua* heat as motion and the three

states of matter, except that now, all matter, depending on its kind, has its Joule's equivalent and heat capacity, matter is a form of energy, and that change in form from matter to energy, Trinity as Oppenheimer called it, might yet, in the hands of some, strike terror once again—an observation raised now in preparation for further comment in respect of Bacon's prayer about the right use of Science by and for mankind.

In summary, the last of the page 489 windows into Bacon's Science, window (c), informs that Bacon's new machine of science comes with an instruction manual requiring that users (a) check-list-out cognitive pathogen idols of mind, (b) become proficient in first vintage table technique in filtering out simple natures and forms, and (c) be appraised of, and skilled in use of, twenty-seven helps-of-mind procedures to aid the progress of true Induction. Bacon has scrapped Aristotelian syllogism as a tool for Science, redefined induction as Induction and placed it at the center of experimental Science.

Conclusion to Bacon's Science

For Bacon, philosophical or scientific knowledge is generally sense knowledge engendered by memory, imagination and reason and more particularly knowledge of the Laws of Nature predicated on sense and experience.

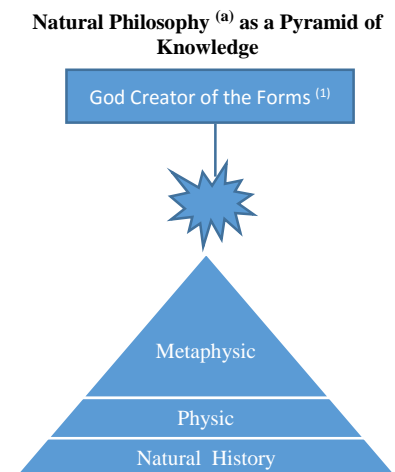
Its method consists of educing axioms during observation and further refining them through Induction and experiment before applying them in further experiment and discovery. Science's sphere of operations is sensual experiential knowledge about the Forms or Laws of Nature, refined and made good through application of Science's own method to nature, and made powerful over nature by virtue of its understanding of her Forms. Its constraints are the idols of the tribe of mankind, the secrecy of nature's laws, and the complexity of scientific method—in this case the method Bacon has formulated.

Bacon's advocacy of applied Science, his nuance in terms usage and employment of those nuanced terms in a new scientific method, when taken together, exhaust the esoteric/exoteric dimension methodology that has served this enquiry thus far

because, with Bacon, the esoteric dimension cannot but help more directly flow into its exoteric form as experimental or applied Science.

Bacon's Ethics

Bacon does not break the link between theology and Ethics and would discuss Ethics inductively *Novum Organon* (F. Bacon, n. d.-e, p. 159) it being amongst the branches



“For knowledges are as pyramids, whereof history and experience are the basis. And so of Natural Philosophy the basis is Natural History; the stage next the basis is Physic; the stage next the vertical point is Metaphysic. As for the cone and vertical point (‘the work which God worketh from the beginning to the end’⁽²⁾ namely, the summary law of nature) it may fairly be doubted whether man’s inquiry can attain to it” *Advancement of Learning* (F. Bacon, n. d.-a, p. 507).

Notes: (a) Bacon calls natural philosophy Science. (1) God = Unity = The Single Pinnacle Point. (2) *Ecclesiastes* 3:11

Source: Constructed by Ian Eddington from the content of *Advancement of Learning*. (p. 507). Boston: Houghton, Mifflin and Company. (F. Bacon, n. d.-a).

of philosophy on the right hand or sense side of the hierarchy illustrated on page 494. The God of Genesis made the world and all things in it and in Bacon’s usage, Metaphysic, when occupying its place in a pyramid of Natural Philosophy knowledge, does not employ final cause in its operations but rather proceeds within a scientific method in compatibility with Bacon’s stated belief in God as creator *Novum Organum* (F. Bacon, 1900a, pp. 366, 387 - 388). The accompanying illustration of Bacon’s natural philosophy knowledge pyramid located on page 519 of this enquiry was constructed from Bacon’s text *De Augmentis Scientiarum* (F. Bacon, n. d.-a, p. 507) and in broad terms its content parallels that of the reproduced engraved title page of *Sylva Sylvarum* (F. Bacon, 1670) discussed further on page 561 of this enquiry. In the page 561 illustration the God of the Tetragrammaton from which light shines is named in Hebrew as YHWH or Yahweh and

further comment on such use of symbolism is made, beginning on page 561.

Bacon does not concern himself with detailed questions of soul and matter, that is, questions about *nous* and substance. For Bacon, created objects exist and humans can obtain knowledge about them through experience, perception, and experiment. He allows mankind two souls, a rational soul received as the breath of God, and an irrational soul shared with the brutes and received from “the elements” *Advancement*

of Learning (F. Bacon, 1900b, p. 125), that is, from the “dust of the earth” (ibid., p. 125). Knowledge of the substance of the rational soul *Advancement of Learning* (F. Bacon, 1900b, p. 126) and the mysteries of faith and precepts of moral principles *Advancement of Learning* (F. Bacon, 1900b, p. 299 - 301) must, as discussed earlier on pages 494 to 495, be derived from divine revelation.

The irrational soul also known as the spirit of the sensible soul might well be the

Bacon on the Human Soul

Let us now proceed to the Doctrine which concerns the Human Soul, from the treasures whereof all other doctrines are derived. The parts thereof are two; the one treats of the rational soul, which is Divine; the other of the irrational, which is common with brutes. I mentioned a little before (in speaking of Forms) the two different emanations of souls, which appear in the first creation thereof; the one springing from the breath of God, the other from the wombs of the elements. ... Now this [irrational] soul (as it exists in man) is only the instrument of the rational soul, and has its origin like that of the brutes in the dust of the earth. ... Wherefore the first part of the general doctrine concerning the human soul I will term the doctrine concerning the Breath of Life; the other the doctrine concerning the Sensible or Produced Soul.

The Works Published, or Designed for Publication, as Part of the Instauratio Magna (F. Bacon, 1882g, pp. 48 - 49, my hierarchy, my square brackets).

For there are many and great excellencies of the human soul above the souls of brutes, manifest even to those who philosophise according to the sense. Now wherever the mark of so many and great excellencies is found, there also a specific difference ought to be constituted; and therefore I do not much like the confused and promiscuous manner in which philosophers have handled the functions of the soul; as if the human soul differed from the spirit of brutes in degree rather than in kind; as the sun differs from the stars, or gold from metals. The doctrine concerning inquiries touching its nature, whether it be native or adventive, separable or inseparable, mortal or immortal, how far it is tied to the laws of matter, how far exempted from them; and the like. Which questions though even in philosophy they admit of an inquiry both more diligent and more profound than they have hitherto received, yet I hold that in the end all such must be handed over to religion to be determined and defined. ... [The knowledge of the substance of the divine rational soul] ... must be drawn from the same divine inspiration, from which that substance first proceeded (ibid., pp. 49 -50, my square brackets).

(Continued on the next page.)

subject of natural philosophy or Science because it is composed of corporeal elements and this division of human soul in part helps explain the range of investigations permissible under Natural Theology identified earlier on page 500. Nevertheless such knowledge might best be derived from sense and experience by virtue of Bacon’s scientific method *Novum Organum* (F. Bacon, 1900a, pp. 76, 316 - 317). As the body in brutes is the instrument of the irrational soul, so too, the irrational soul in humans is the instrument of the rational soul *Advancement of Learning* (F. Bacon, 1900b, p. 126 – 127).

Bacon addresses his doctrine of the union of sensitive soul and body *Advancement of Learning* (F. Bacon, 1898a, pp. 153 - 156) within his League of Mind and Body

subdivision located in the position shown in the Human Philosophy hierarchy illustrated on page 502 and its two subdivisions, Indications and Impressions.

Indications subdivides into Physiognomy “which by the lineaments of the body, discovers the dispositions of the mind” (ibid., p 153) and Interpretation of Natural Dreams “which from the agitations of the mind discovers the state and disposition of the body” (ibid., p 153). Impression also divides into two parts and would address

Bacon on the Human Soul
(Continued from the Previous Page)

The doctrine concerning the sensible or produced soul, however, is a fit subject of inquiry even as regards its substance; but such inquiry appears to me to be deficient. For of what service are such terms as *ultimate act, form of the body*, and such toys of logic, to the doctrine concerning the substance of the soul? For the sensible soul—the soul of brutes—must clearly be regarded as a corporeal substance, attenuated and made invisible by heat; a breath (I say) compounded of the natures of flame and air, having the softness of air to receive impressions, and the vigour of fire to propagate its action; nourished partly by oily and partly by watery substances; clothed with the body, and in perfect animals residing chiefly in the head, running along the nerves, and refreshed and repaired by the spirituous blood of the arteries; as Bernardinus Telesius and his pupil Augustinus Donius have in part not altogether unprofitably maintained. *The Works Published, or Designed for Publication, as Part of the Instauration Magna* (F. Bacon, 1882g, pp. 50 - 51).

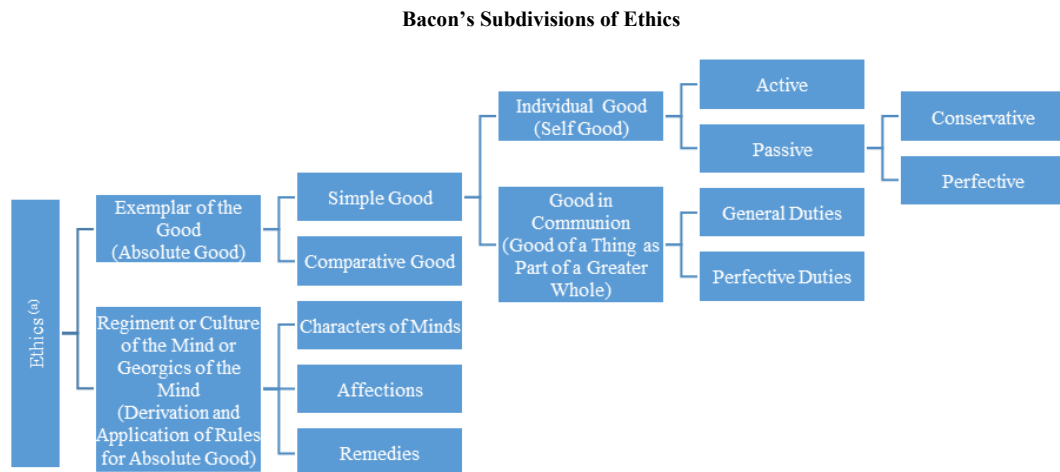
For this [irrational] soul is in brutes the principal soul, the body of the brute being its instrument; whereas in man it is itself only the instrument of the rational soul, and may be more fitly termed not soul, but spirit. And so much for the substance of the soul (ibid., p. 51, my square brackets).

first, “how, and to what degree the humours and constitution of the body affect the soul” (ibid., p. 154), which is largely wanting and second, “how, and to what degree the passions and apprehensions of the soul may affect and work upon the body” (ibid., p. 154). Medicine is implicated in both subdivisions of Impressions and religion has strongly implicated itself in the first subdivision, the effect of body humours on the soul.

Bacon would have the deep question of the impact of imagination on body investigated further (ibid., p. 155). In particular he would have new enquiry of the situation of the faculties of the sensible soul in the organs of the body. Neuroscientists, psychologists and psychiatrists are still at work on this question of body and soul although their domains are different, for example the functions of central nervous systems or the cerebral cortex itself (Damasio, 1995, 1999, 2003, 2010; Edelman, 2004) or in multidisciplinary contributions now beginning to constitute a field of study known as embodied cognition (Lakoff & Johnson, 1999; Lakoff & Núñez, 2001; Pfeifer & Bongard, 2006; Varela, Thompson, & Rosch, 1991), there generally being acknowledgements to Descartes (AD 1596 – 1650) and Kant (AD 1724 – 1804). Again, for Bacon, questions about substance and other essences of divine and rational soul are the province of religion (F. Bacon, 1900b, p. 126) while questions about sensitive or produced soul are the province of philosophy or Science (ibid., p. 126 – 127). Bacon does not appear to go to detailed differentiation of soul from mind or to explanation of an actual physiology of the sensitive soul’s communication with either the divine element of human soul or with

the human body although, as the content of the box on page 520 reveals, Bacon did hold an elementary theory of soul-body physiology.

The faculties of the rational component of sensible soul named in *Advancement of*



Notes: (a) Follows on from the Use of Faculties/Objects of Faculties subdivision in the hierarchy on page 502. Bacon would have an Appendix to Ethics named *Congruity between the Good of the Mind and the Good of the Body*.

Source: Constructed by Ian Eddington from Bacon, F. (1882). *De Augmentis Scientiarum*. (pp. 191 – 230). Boston: Houghton, Mifflin and Company. (F. Bacon, 1882b).

Learning (F. Bacon, 1900b, p. 127) are understanding, reason, imagination, appetite, and will, memory not gaining a mention on this occasion, and those of the irrational

Bacon on Rhetoric, Logic, Imagination and Will

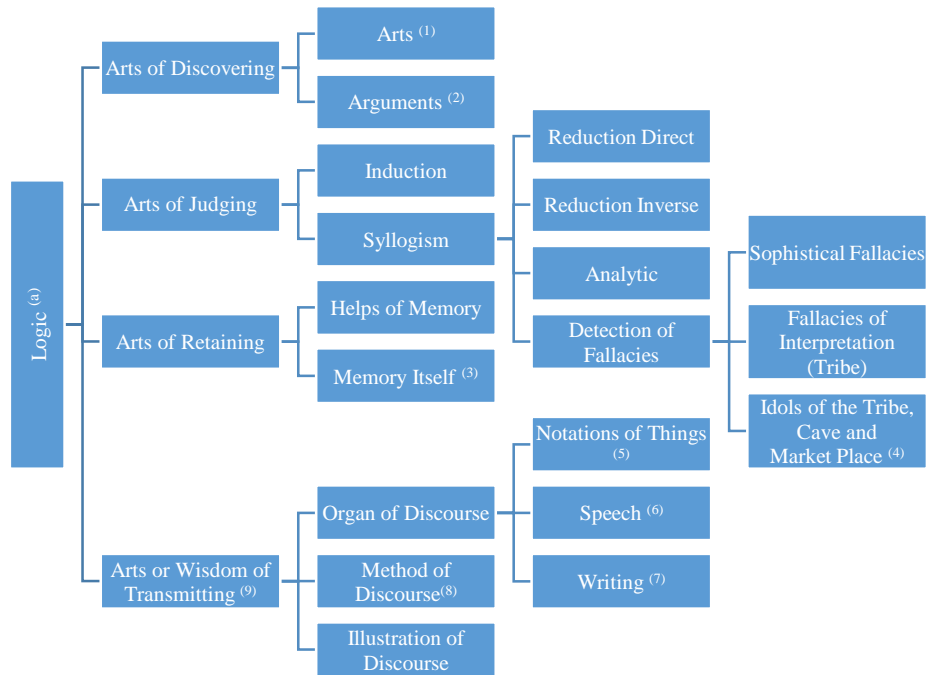
“Rhetoric is subservient to the imagination, as Logic is to the understanding; and the duty and office of Rhetoric, if it be deeply looked into, is no other than to apply and recommend the dictates of reason to imagination, in order to excite the appetite and will. For we see that the government of reason is assailed and disordered in three ways; either by the illaqueation [snaring, trapping] of sophisms, which pertains to Logic; or by juggleries of words, which pertain to Rhetoric; or by the violence of the Passions, which pertains to Ethics. For as in negotiations with others, men are usually wrought either by cunning, or by importunity, or by vehemency; so likewise in this negotiation within ourselves, we are either undermined by fallacies of arguments, or solicited and importuned by assiduity of impressions and observations, or agitated and transported by violence of passions. And yet the nature of man is not so unfortunately built, as that those arts and faculties should have power to disturb reason, and no power to strengthen or establish it; on the contrary they are of much more use that way” *De Augmentis Scientiarum* (F. Bacon, 1882g, p. 131).

component of soul are voluntary motion, sense and perception *Advancement of Learning* (F. Bacon, 1900b, p. 129). Perception is unconscious action and reaction. For example, attraction between magnets is perception, so too visceral feeling in humans *Advancement of Learning* (F. Bacon, 1900b, pp. 129 - 130). According to Bacon perception of this kind can be independent of sense although, as often is his position, he

would have the matter investigated further. In some respects, Bacon is prior to present day usage of the term perception employed in psychology.

All of the faculties of the rational soul are actualised through Ethics and Logic *Advancement of Learning* (F. Bacon, 1900b, p. 127). Ethics facilitates will, appetite

Bacon's Subdivisions of Logic



Notes: (a) Follows from the Use of the Faculties/Object of the Faculties subdivision in the hierarchy on page 502. (1) Bacon would further subdivide Arts into Learned Experience and The New Organon. (2) Bacon would further subdivide Arguments into Promptuary and Topics, and Topics further into General and Particular. (3) Bacon would subdivide Memory Itself into Prenotion and Emblem. (4) Bacon would have an Appendix to the Arts of Judging titled Analogy of Demonstration [According to the Nature of the Subject]. (5) Notations of Things further subdivides into Hieroglyphs and Real Characters. (6) Speech is further subdivided into Literary and Philosophic and includes a Reference to Poesy in respect of metre. (7) Writing includes a reference to the Doctrine of Ciphers. (8) Bacon speaks of method being either Magistral (teaching) or Initiative (of intimation, of examination and enquiry) the terms being further explained in the dialogue box on page 525. (9) Bacon would have two Appendices to the Arts or Wisdom of Transmission respectively named Critical and Pedagogical. Bacon's treatment of Rhetoric is contained in Chapter III of Book Six of *De Augmentis Scientiarum*.

Source: Constructed by Ian Eddington from Bacon, F. (1882). *De Augmentis Scientiarum*. (64 – 190). Boston: Houghton, Mifflin and Company. (F. Bacon, 1882b).

and affections in matters of individual and common good *Advancement of Learning* (F. Bacon, 1900b, p. 133) from its position in the hierarchy on page 522. Logic facilitates reason and understanding across a range of divisions of human understanding, as illustrated in the hierarchy on page 523.

As earlier explained beginning on page 495, in Bacon's architecture or geography of mind all three of the rational soul's faculties of memory, imagination and reason flow from sense which opens the mind for understanding. Imagination is pronounced the currency of exchange between reason and will. Unfortunately, imagination can be destabilising *Advancement of Learning* (F. Bacon, 1900b, p. 218) and frustrate reason in matters of religion, and more generally through "persuasion insinuated by

the power of eloquence” *Advancement of Learning* (F. Bacon, 1900b, p. 134). Rhetoric is to be, but may not be, stabilising of reason.

Again, but this time from an Ethics perspective, Bacon’s separation of Natural Philosophy and Natural Theology from Divine Theology earlier illustrated on pages 494 and 496, and his prohibition of their use of final cause in Science, frees investigative reason from revelation in particular and philosophy *qua* Science from faith in general. In this way Bacon breaks from Aristotelian method and political philosophy and Scholasticism’s renditions of them. Yet as mentioned on page 519 he did not separate Ethics from theology so that the break is a kind of green-stick fracture although still one of substantial importance.

For example, among today’s scientists there are those who return home after a day’s unencumbered rational and methodical research and experiment to live in conformity with religious and/or moral dictates. It is as though for Bacon Aristotle’s final cause is superfluous in Science given God’s position as the creator of things, as the pyramid hierarchy and title page engraving respectively depicted on pages 519 and 561 of this enquiry suggest, so that experimental Science need not concern itself about the matter.

However, as earlier discussed on page 476, banishment of the words final cause from Science, that is, banishment of final cause as a construct or technique pure and simple, was short-lived and to some extent Bacon’s own caveat on final cause *qua* human need for logic lets him down lightly on this count:

... nevertheless the human understanding being unable to rest still seeks something prior in the order of nature. And then it is that in struggling towards that which is further off it falls back upon that which is more nigh at hand; namely, on final causes: which have relation clearly to the nature of man rather than to the nature of the universe ... *Novum Organum* (F. Bacon, 1863f, p. 81)

and one may wonder if de Maistre would acknowledge Bacon’s own caveat even if he, Bacon, does go on to say that mankind’s past reliance on final cause in this way has “strangely defiled philosophy” (*ibid.*, p. 81).

Bacon’s treatment of mankind as either “separate or joined in society” *Advancement of Learning* (F. Bacon, 1909b, p. 106) calls forth and differentiates Civil Philosophy

from Human Philosophy as earlier illustrated in the hierarchy on page 502 of this

Bacon's Usage of Magistral

Let the first difference of Method then be this: it is either Magistral or Initiative. ... The magistral method teaches; the initiative intimates. The magistral requires that what is told should be believed; the initiative that it should be examined. The one transmits knowledge to the crowd of learners; the other to the sons, as it were, of science. The end of the one is the use of knowledges, as they now are; of the other the continuation and further progression of them. Of these methods the latter seems to be like a road abandoned and stopped up; for as knowledges have hitherto been delivered, there is a kind of contract of error between the deliverer and the receiver; for he who delivers knowledge desires to deliver it in such form as may be best believed, and not as may be most conveniently examined; and he who receives knowledge desires present satisfaction, without waiting for due inquiry; and so rather not to doubt, than not to err; glory making the deliverer careful not to lay open his weakness, and sloth making the receiver unwilling to try his strength.

Source: Bacon, F. (1882). *De Augmentis Scientiarum*. (pp. 122 - 123). Boston: Houghton, Mifflin and Company. (F. Bacon, 1882b).

enquiry. From Human Philosophy emerges Moral Philosophy. Ethics, moral philosophy's attendant, is the doctrine of the will in search of the good understood as the welfare of the individual or society *Advancement of Learning* (F. Bacon, 1900a, pp. 133, 177, 211, 220). Logic, which serves Ethics, is the doctrine of knowledge in search of truth. Truth and goodness are twins and logic provides the route to goodness. Rhetoric is stabilising not

destabilising of reason's search for truth and Ethics, logic, rhetoric, imagination and reason are linked in the following manner:

The end of logic is to teach the form of arguments for defending, and not for ensnaring, the understanding. The end of ethics is so to compose the affections, that they may co-operate with reason, and not insult it. And lastly, the end of rhetoric is to fill the imagination with such observations and images as may assist reason, and not overthrow it. *Advancement of Learning* (F. Bacon, 1900a, pp. 177 - 178)

Ethics has two dimensions: first a so-called absolute good or theoretical model or template Exemplar of the Good, and second a Regiment or Culture of the Mind or Georgics of the Mind *Advancement of Learning* (F. Bacon, 1900a, p. 210 - 211) *qua* practical derivation and application of rules through which human nature may be regulated in conformity with the theoretical model or template of the good *Advancement of Learning* (F. Bacon, 1900a, pp. 211, 210 - 213).

Bacon claims that the appetite for absolute good is native to all existing beings *Advancement of Learning* (F. Bacon, 1900b, p. 213). As the Ethics hierarchy on page 523 of this enquiry illustrates, absolute good may be either a simple good or a comparative good. Simple good may be an individual or self-good, understood as good of a thing in its own right, or a good-in-communion, understood as good of a thing as part of a greater whole *Advancement of Learning* (F. Bacon, 1900b, p. 213).

Individual self-good can be active or passive: in its active form it inheres in multiplying and propagating and in its passive form in self-preservation and defence. The active *qua* multiplication and propagation is more worthy than the passive *qua* self-preservation and defence, Hobbes' good pen status with Bacon being all the more interesting for this, and so too Bacon's Architect of Fortune Ethics of which more later.

Whereas active individual self-good and good-in-communion may sometimes coincide, the default object of active individual self-good is one's own gratification, not the service and benefit of others (ibid., p. 217). Individual passive self-good might be conservative, that is "the receiving and enjoying of things agreeable to our nature" (ibid., p. 218) or perfective, that is, aspiration and exaltation of inferior natures towards more noble natures, as towards their origin, or, in the imagination of a poet he invokes to aid his explanation, an "ethereal vigor ... [aspiring to] celestial origin" (ibid., p. 217, my square brackets). Although the quote is not from Plato, is this borrowed depiction a Platonic de Maistre moment for Bacon? In any event "corrupt and preposterous imitation of perfective good is the pest of human life" (ibid., p. 218), creative of storms which sweep things away. Perfective individual self-good is more excellent than conservative individual self-good (ibid., p. 217).

In human affairs such thwarting of the process by which inferior natures aspire to higher natures in search of perfection at the self-good level may compromise perfective good-in-communion and may become dysfunctional and inflict calamity on others *Advancement of Learning* (F. Bacon, 1900b, p. 217). I take Bacon's affirmation of a plague resulting from exaltation of place over nature to mean that humans, especially those in power, when they get above themselves, may cause considerable harm not only to themselves and others as well.

What then is the simple good called good-in-communion? It is that good which inheres in duty to society *Advancement of Learning* (F. Bacon, 1900b, p. 219). While Bacon requires that politics serves Civil Philosophy, in which service it addresses external goodness *Advancement of Learning* (F. Bacon, 1900b, p. 235), his divide between Ethics and politics is sometimes fine.

For example, the good of man with respect to society, which in kind is a good-in-

Bacon's Usage of Comparative Good

Again, for the nature of Comparative Good, they [the ancients] have also excellently well handled it, in their triplicity of good; in the comparison between a contemplative and active life; in the distinction between virtue with reluctance, and virtue settled and secured; in their encounters between honesty and profit; in their balancing of virtue with virtue, as to which outweighs the other, and the like; so that I find that this part is excellently laboured, and that the ancients have done their work admirably therein, yet so as the pious and earnest diligence of divines, which has been employed in weighing and determining duties, moral virtues, cases of conscience, the bounds of sin, and the like, has left the philosophers far behind. *De Augmentis Scientiarum* (F. Bacon, 1882b, p. 195, my square brackets).

communion, functions through duty. Duty is to the mind well-formed towards others, what virtue is to the mind well-formed and composed in itself *Advancement of Learning* (F. Bacon, 1900b, p. 219) and duty and virtue are inextricably interwoven. Duty so understood is, for Bacon, a part of Ethics rather than politics because it prepares a basis upon which politics might operate. Duty is that process by which the individual governs their

behaviour towards others, not how the individual governs others (ibid., p. 219).

There is a common duty which pertains to every man *Advancement of Learning* (F.

Terms Usage

Ovid or Video-sequor Moment⁽¹⁾

I see and approve of the better but follow the worse solution

Augustine-moment⁽²⁾

God give me the strength but not just yet.

Goethe-moment⁽³⁾

I see no fault committed which I could not have committed myself

Yahoo-moment⁽⁴⁾

Self-deceived sensitive being so detestable on all accounts, ever present from Plato's shadow boxers to Nietzsche's last man.

Notes: (1) *Metamorphoses* VII, 20 - 30 or VII 25 - 30 (Ovid, 1826, p. 159; 2008, p. 144). (2) Anecdote. (3) (Goethe, 1906, p. 86). (4) (Swift, 1800, pp. 54, 290, 295 - 297).

Source: Short form statements of terms explained on page 190.

Bacon, 1900b, p. 220), and a special duty which pertains to every man in his "profession, vocation, state, person and degree of particulars" (ibid., p. 220). Ethical choice is choice between comparative duties and it exists for both self-good and good-in-communion "between man and man, case and case, private and public, present and future" *Advancement of Learning* (F. Bacon, 1900b, p. 222). Ethics and moral philosophy should be subservient to theology (ibid., p. 224),

Ethics, as earlier discussed, being a preparation for politics.

Bacon does not situate self-good and good-in-communion in a simple good setting. Rather he places them in a comparative good framework after his usage of the term as it is outlined in the accompanying box located on this page, which situating requires that that earlier mentioned duty be discerned within competitive choice situations, as Aristotle might agree. Bacon ranks good-in-communion above self-good by reference to Pompey's decision to endanger his own life and sail for help during a storm rather than prolong starvation in his community, and by the Christian

faith's example of sacrifice for others. Theology he says knows nothing of a monastic life that stops at "merely contemplative and unexercised ecclesiastical duties such as continual prayer, the sacrifice of vows, oblations to God, and the writing of theological books for promulgating divine law" (ibid., p. 214), exercises of a kind, certainly in a different setting and era, but not necessarily unlike those Hadot (1995, 2002) attests necessary for medicining-in philosophy as a way of life, of which more later.

Situating self-good and good-in-communion in a comparative good setting and defining good-in-communion as duty towards others predicated on a virtuous self-good mind "well-formed and composed in itself" *De Augmentis Scientiarum* (F. Bacon, 1882b, p. 207), ensures that for Bacon, as in the case of Aristotle too, virtue is an active commodity, a kind of performance test. Virtue's existential condition consists of choosing between competing individual and societal good alternatives and then behaving them out in accordance with received moral precepts which informed those choices in the first place, moral precepts in Bacon's system most likely being mainly supplied through Christianity. Unlike Aristotle who shys clear of specific advices or rules for specific action choice dilemmas, Bacon takes one step beyond saying what virtue is, one step into Goethe-moment existence by suggesting in his so-called Architect of Fortune Ethics, and elsewhere under such names as Rising in Life, or Self-Politician Ethics (F. Bacon, 1898b, pp. 319, 330, 335), or in general didacticism in his essays, what virtue may do, that is, what action man(kind) *qua politique* might be excused in particular circumstances. Henceforth in this enquiry such referents as Architect of Fortune Ethics, Civil Business Ethics and the like, whether used singularly or jointly, all exemplify newness and novelty on Bacon's part and subsequent use of any one of them may confidently call the others into conversation. Architect of Fortune Ethics *qua* Civil Business Ethics is, in Bacon's own words, a departure from Philosophical or Theological Ethics *Essay 1: Of Truth* (F. Bacon, 1909-1914b, n. d.), and beginning in the next paragraph, which commences on the following page to accommodate formatting and layout imperatives of the software, I discuss it further.

Bacon and Innovation in Ethics

Recently, in the light of earlier exegesis of philosophy as a way of life (Hadot, 1995, 2002), Bacon has been interpreted from philosophy as therapeutics and philosophy as medicine and/or cultivation of mind perspectives (Corneanu, 2011; Corneanu & Vermier, 2012; P. Harrison, 2012; Lancaster, 2012; Sharpe, 2014) and *inter alia* this interpretation reaches to, and engages with Bacon's so-called Georgics of the Mind, that is, that "means to procuring the true moral habit of virtue" *Advancement of Learning* (F. Bacon, 1900a, p. 306), that stairway by which mankind might ascend to the platform of the good. This recent and valuable work draws in part on medicine of mind ideas expressed by Hadot (2002), who, in his work cited in this sentence, does not mention Bacon. Before proceeding to discuss this new work, I provide a brief account of Hadot's contribution for background purposes. Discussion of Hadot's work occupies pages 529 to 532, and that of Bacon's posited innovation in Ethics, which includes engagements with works discussing Bacon from medicine of mind perspectives, occupies pages 532 to 545 after which it merges into discussion of particular features Bacon's Architect of Fortune Ethics by then, for enquiry purposes, also called *Politique Ethics*.

Hadot and Philosophy as a Way of Life

Hadot contends, for example, that unlike modern philosophy which "appears above all as the construction of a technical jargon reserved for specialists." (Hadot, 1995, p. 272), "ancient philosophy proposed for mankind an art of living" (ibid., p. 272). Ancient philosophy "is not wisdom, but a way of life and discourse determined by the *idea* of wisdom" (Hadot, 2002, p. 46, Hadot's italics).

Hadot (1995, p. 57) derives his opinion from a survey of various ancient schools and depicts Socrates' inquiry into, and erotic deepening of, the nature of wisdom *Symposium* 201d – 212c (Plato, 1925g; 1952u, pp. 162 - 168), and the good-at-what skills question for mankind discussed earlier on pages 87 to 90 of this enquiry, as foundational and central to (a) apperception of ancient philosophy as a way of life and discourse predicated on spiritual exercises which might assist the acquisition of true good understood as a will to effect absolute moral intent (Hadot, 2002, pp. 32 - 36) and (b) apperception of wisdom as that which, even though sought for, is

unlikely ever attained (ibid., p. 4). Plato's Socrates is, for Hadot, the mother example of philosophy as a way of life and Socrates' dialogical call in *Apology* 36c (Plato, 1952a, p. 209; 1966a) for mankind to focus more on their being than their having, on what they cognitively and existentially are, rather than what they otherwise materially possess, and what they can then contribute to others as well, appears to be Hadot's absolute-value (sic) touchstone for moral intent.

In ancient therapeutic philosophy, discourse illuminates and facilitates choice of a

Apology 36 b - 36c
 [Socrates] And so the man proposes the penalty of death. Well, then, what shall I propose as an alternative? Clearly that which I deserve, shall I not? And what do I deserve to suffer or to pay, because in my life I did not keep quiet, but neglecting what most men care for—money-making and property, and military offices, and public speaking, and the various offices and plots and parties that come up in the state—and thinking that I was really too honourable [36c] to engage in those activities and live, refrained from those things by which I should have been of no use to you or to myself, and devoted myself to conferring upon each citizen individually what I regard as the greatest benefit? For I tried to persuade each of you to care for himself and his own perfection in goodness and wisdom rather than for any of his belongings, and for the state itself rather than for its interests, and to follow the same method in his care for other things. What, then, does such a man as I deserve. (Plato, 1952a, p. 209; 1966a, my square brackets).

Symposium 203c - 204a
 [Socrates] Hence it is that Love from the beginning has been attendant and minister to Aphrodite, since he was begotten on the day of her birth, and is, moreover, by nature a lover bent on beauty since Aphrodite is beautiful. Now, as the son of Resource and Poverty, Love is in a peculiar case. First, he is ever poor, and far from tender or beautiful as most suppose him: rather is he hard and parched, shoeless and homeless; on the bare ground always he lies with no bedding, and takes his rest on doorsteps and waysides in the open air; true to his mother's nature, he ever dwells with want. But he takes after his father in scheming for all that is beautiful and good; for he is brave, strenuous and high-strung, a famous hunter, always weaving some stratagem; desirous and competent of wisdom, throughout life ensueing the truth; a master of jugglery, witchcraft, and artful speech. By birth neither immortal nor mortal, in the selfsame day he is flourishing and alive at the hour when he is abounding in resource; at another he is dying, and then reviving again by force of his father's nature: yet the resources that he gets will ever be ebbing away; so that Love is at no time either resourceless or wealthy, and furthermore, he stands midway betwixt wisdom and ignorance. The position is this: no gods ensue wisdom or desire to be made wise; such they are already; nor does anyone else that is wise ensue it. Neither do the ignorant ensue wisdom, nor desire to be made wise: in this very point is ignorance distressing, when a person who is not comely or worthy or intelligent is satisfied with himself. The man who does not feel himself defective has no desire for that whereof he feels no defect. *Symposium* 203c - 204a (Plato, 1925g; 1952u, pp. 163 - 164, my square brackets).

way of life, acceptance of which is tantamount to acceptance of, and participation in, existential protocols and procedures, so-called spiritual exercises which capture, distill and occasion a particular school's way-of-life being, and which frame one's behavioural actions towards themselves and others. Ongoing articulation and discourse of this chosen way of life, including through spiritual exercises, is therapeutic and begetting of changed visions and perspective.

For example in Plato's Academy spiritual exercises might have been predicated on

preparation for death and salvation of soul through living a philosophical life (Hadot, 2002, pp. 62 - 65). In Aristotle's Lyceum *theoria*, cradled through research and contemplation, leads to a philosophic life. Epicurean, Stoic, and Skeptical gatherings each had their philosophical way of life percepts, sustainable pleasure, life in

accordance with nature and reason, deferral of belief and the like, and their attendant

Hadot's Spiritual Exercises

Spiritual exercises in ancient philosophy are participations through which humans might transform themselves into a way of being and act of living predicated on a search for wisdom. In function they are existential as well as moral, engage intellect, imagination, sense and will, and are accessible in a number of forms. For example spiritual exercise might engage contemplation and meditation, introspective knowledge of self, reflection, writing including gloss and commentary, exegesis, memorisation, vigilant attention, detached relaxation, indifference, listening, dialogue, inquiry, research, duty-task performance, mastery of passion and preparation and training for death. Socratic dialogue is a spiritual exercise in common. Spiritual exercises aim at bringing about states of *autarkeia* or self-sufficiency, *ataraxia* or tranquillity of soul and or cosmic consciousness, a surpassing of oneself to become part of a whole, part of a cosmic order. The reduction of philosophy from a way of life to detached philosophical discourse, except perhaps in some monasteries, occurred in the middle ages. One might be a philosopher in ancient times and have not written a word. So might one today, but they might not necessarily recognise their kind amongst philosophy departments in today's universities, modern philosophy there and elsewhere presenting itself "above all as the construction of a technical language reserved for specialists" (Hadot quoted in A. Davidson, 1990, p. 480) —hard words those. In ancient therapeutic philosophy spiritual exercises are formative, rather than informative and for a participation to qualify as a spiritual exercise it must make one change their attitude, opinion, or conviction through dialogue and struggle with oneself.

Source: Extracted from Davidson, A. (1999). *Spiritual Exercises and Ancient Philosophy: An Introduction to Pierre Hadot*. (pp. 475 – 482). *Critical Enquiry*, 16. (A. Davidson, 1990); Hadot, P. (1995). *Philosophy as a Way of Life: Spiritual Exercises from Socrates to Foucault*. (passim). Malden, MA: Blackwell Publishing. (Hadot, 1995).

existential exercises. Under imperial Rome before the closing of the academies, and under developing and changing teaching methods, gloss and commentary accompany existing spiritual exercises which, during a time of renewed interest in Platonism, were taught through texts appropriately graded for stages of spiritual development being taught and exercised for. For example a graded text approach to Plato might lead students through dialogues ranked upwards from those harboring mostly Ethics through to those permitting metaphysical contemplation of the highest spiritual order, in Plato's case, the one. Hadot

(1995, pp. 99, 118) offers Porphyry's compilation of Plotinus's *Enneads* (Plotinus, 1956) as an example of a graded textual approach in Neoplatonic teaching and learning of philosophy as a way of life. Separation of self from worldliness, its ensuing spiritual development and attendant idea of sagacity *qua* a sage, says Hadot, are common to ancient schools of philosophy.

Ongoing articulation and discourse of a chosen way of life is considered therapeutic, begetting of changed visualisations and a defense against passions predicated on false beliefs and misguided understandings and it provides succor in times when challenging life matters arise. Christianity, Hadot says, played a role in uncoupling ancient philosophy and discourse as a way of life. According to Hadot, grinding out of philosophy as a way of life extends beyond the closure of the pagan schools whereafter an almost total and final eclipse of it is conjectured to have occurred.

Yet Hadot glimpses embers of philosophy as a way of life tradition cindering on in works of such notables as Descartes (AD 1596 – 1650), Spinoza (AD 1632 – 1677), Rousseau (AD 1712 – 1778), Goethe (AD 1749 – 1832), Thoreau (AD 1817 – 1862), Heidegger (AD 1889 – 1976), Nietzsche (AD 1844 – 1900), and others (Hadot, 1995, pp. 65 – 66, 69, 108 – 109, 259, 260, 270, 272). Constructing possible particular espoused forms of existential and moral philosophical being, *a posteriori*, from those embers and/or from reported life practices of each of those notables named and cited above might not perhaps be done without ambiguity, if viably done it might be. Davidson urges that Foucault’s last two works (Foucault, 1986, 1990) if not his

Bacon on God’s Creation of Nature’s Laws and Inherence in Nature

I HAD rather believe all the fables in the Legend, [*The Legend of the Saints* (de Voragine, 1483/1914)] and the Talmud and the Alcoran, than that this universal frame is without a mind. And therefore God never wrought miracle to convince [contest] atheism, because his ordinary works convince it. It is true, that a little philosophy inclineth man’s mind to atheism; but depth in philosophy bringeth men’s minds about to religion. For while the mind of man looketh upon second causes scattered, it may sometimes rest in them, and go no further; but when it beholdeth the chain of them, confederate and linked together, it must needs fly to Providence and Deity. *Of Atheism* (F. Bacon, 1909 -1914, Vol. III, Part I, n. p., my square brackets).

Bacon names God the maker of the universe and its laws and simple natures, the Forms, in *Advancement of Learning* (F. Bacon, 1860b, pp. 507 - 509; 1902a, p. 30).

whole project of the history of sexuality is “guided and framed in terms of Hadot’s notion of spiritual exercises” (A. Davidson, 1990, p. 480). For that matter spiritual exercises of a Hadot kind may well smolder on in present day lodge rituals and practice, armed and emergency service conditioning and bonding exercises, youth movements, sports coaching schools, morning recitations of creed in some Japanese business organisations, and in maintaining business culture within, for example, organisations like

the Mondragon Corporation, this sentence, and its speculative supposition carrying no intended pejorative association of Hadot-type spiritual exercises, or any of the postulated possible present day homes of such Hadot-type exercises, with rabid indoctrination.

One claimed legacy of Hadot’s conjectured uncoupling of ancient philosophy and discourse *qua* way of life is “that there are nowadays professors of philosophy, but not philosophers” (Hadot, 2005, p. 229; Thoreau, 1971, p. 14). Hadot *qua* philologist is aware of complexities—adoptions, revisions, false interpretations, dogmatisms, historical overlays and the like—which obscure identification of essential way of life pedagogical processes and methods of the various pagan schools.

After Hadot

Corneanu (2011, p. 2) situates her discussion of Bacon's cleansing human mind of its idols, if indeed humans are capable of it, within a seventeenth century medicine of mind therapeutics tradition predicated on partial restoration of mental power to its condition before mankind's fall. In received interpretation of Chapters 2 and 3 of *Genesis* (Holy Bible, 1932) mankind's pre-fall state appears to be one of innocence before eating the forbidden fruit, and afterwards, until expulsion, one of knowledge of good and evil. Subsequently, now outside the garden, mankind must till the earth, separated from Eden and its guarded tree of life. Corneanu uses the term prelapsarian to denote before-the-fall conditions thus introducing Calvinistic overtones. Corneanu's so situating Bacon is thus not incompatible with apperception of Bacon as one insisting on God's creation of, and perhaps inherence in, an ordered natural world, and a possibility of mankind's access to God's provisioning through obedience to His laws of nature in so far as knowledge of these can be fathomed through Bacon's new machine of Science.

Yet one may not jump too quickly from the page 532 boxed quotation about a presence of divine mind in the universal frame of nature to claim Bacon as an advocate or otherwise of God's active daily presence in nature. Gascoigne (2010) demonstrates a fine line in Bacon's balancing of a God who no longer, beyond the sixth day, inhered in His fixed given laws, and a God who sometimes intervened through miracles in apparent contradiction of those laws. Bacon, he says, holds that nature is ordered, not chaotic—a question still in contention amongst physicists—and that for Bacon order does not follow from Aristotelian immanent intelligent cause but rather, in accordance with a voluntarist tradition strong in Calvinism, from God's imposition of laws before His first Sabbath day of rest (Gascoigne, 2010, pp. 220 - 222).

Corneanu argues that English philosophers Boyle (AD 1627 – 1691) and Locke (AD 1632 – 1704) held firm views about acquisition and transfer of knowledge, reason and its constraints, and the right and proper conduct of scientific method, and that they framed these views within cure and cultivation of mind regimens existing by

virtue of a rational soul ordained in humans by the Creator. Bacon and his development of scientific method, and subsequent contributions by Royal Society virtuosi, namely Hooke (AD 1635 – 1703), Charleton (AD 1619 – 1717), Glanvill (AD 1636 – 1680) and Spratt (AD 1635 – 1713), are central to Corneanu’s exegesis of regimen of mind environments germane to Hooke and Locke. Corneanu states that marshalling of scientific method is a predominant part of a wider scientific and literary culture and cure of mind phenomenon in which European writers, for example Descartes (AD 1596 - 1650), Gassendi (AD 1592 – 1665), Pascal (AD 1623 – 1662), and Arnauld (AD 1612 – 1694) and Nicole (AD 1625 – 1695) of Port Royal Abbey (Arnauld & Nicole 1964; Descartes, 1952; Gassendi, 1981; Pascal, 1952), were also involved (Corneanu, 2011, pp. 59, 87 – 89, 92 – 94, 99 – 100, 169, 252). In this wider culture of mind tradition, while experiment was linked to nature, those then-called natural philosophers might yet reach to, and work within, revealed scripture in their interrogations of nature as God’s creation (ibid., p. 3).

Corneanu collects the works of these early modern medicine of mind writers under the descriptor *medicina-cultura-animi*, medicine of mind notions within those works having, *inter alia*, Patristic and/or Augustinian dimensions. The *cultura animi* genre is cross-disciplinary, uses a variety of prose forms, treatises, rhetorics, consolations, moral, religious and psychological discourse and the like, and crosses institutional boundaries. Corneanu conjectures that *cultura-animi* genre—it “interweaves Stoic, skeptical and Christian virtues ... and relies on mitigated Augustinian accounts of human possibilities ... [for inner reformations] ... of the human mind” (ibid., p. 8, my square brackets)—might serve as an alternative to Aristotelian-Thomistic and hermetic-mystic lines of virtue exegesis.

Late sixteenth and early seventeenth century *cultura-animi* tradition allows conjoint religious and philosophical regimens of mind and Corneanu interprets acquisition of scientific objectivity as a *cultura animi* regimen begetting of such personal virtues as constancy, humility, candor and the like, some of which, one may speculate, are not necessarily always found present in natural philosophers then, and practicing scientists now. Corneanu’s depiction, within early modern English *cultura animi* tradition, of culture of mind and culture of society being two sides of one coin, with

no diminution of the private in construction of the public, is in keeping with her depiction of *cultura animi* as therapeutical philosophy. Gatherings of early modern English philosophers are, first and foremost, medicine of mind imbibings of objectivity, some of which objectivity may eventually trickle across and pond in the wider community. I found Corneanu’s contribution, and contributions by some she names (Abernethy, 1622/1630; J. Hall, 1606/1863; Reynolds, 1640; Robert Burton also known as Democritus Junior, 1621/1883; T. Wright, 1601/1971) as representative of *cultura animi genre* (Corneanu, 2011, pp. 16, 28, 31, 44, 46, 47, 53 – 54, 55, 58, 63 – 64, 69, 70, 73 – 74, 119, 139, 140), most instructive to understanding a general shift of interest from reason to emotion and a possible literary background from which Hume (AD 1711 – 1776) may subsequently, in part, have drawn his “reason is, or ought to be, the slave of the passions” (Hume, 1739, p. 415) conclusion.

Corneanu’s skillful paraphrasing, and carefully worded naming of a core insight of post Hadot scholarship—detection of an early modern appropriation of “the ancient

Corneanu’s Terms Usage

Paideia
Paideia = preparation (education and training) for membership of an ideal *Polis*.

Askesis
Askesis = training oneself, transforming oneself towards a chosen state of being. For example, McGushin (2007) explains Foucault’s Collège de France lectures 1982 – 1984 (Foucault, 2011, 2012) as not being first and foremost about discovery of new knowledge of the history of philosophy but rather about Foucault’s own *askesis* occasioned in the last stages of his life through acts of thinking that would transform him into becoming a philosopher.

Theoria
Theoria = that state of mind attained through speculative wisdom’s contemplation of the unchanging.

view of philosophy as fundamentally *paideia* or *askesis* [that] might effectively medicine in a transformational unshakeable way of life in the absence of Aristotelian *theoria*” (ibid., p. 6, my square brackets)—does not take me far enough towards understanding just how effective and transformational *paideia*

or *askesis* might be in the absence of an Aristotelian kind of *theoria* or one of its many interpretations, irrespective of the level of the object being contemplated, or for that matter, in the case of *techné* guiding action when an artisan is in contemplation of right rules of their craft, my understanding being that Aristotle allows that all rational contemplation moves one closer to god or the unchanging. I would also like to know more about resolution of conflict between competing regimens of mind.

Short Speculative Ideas-Linking Digression: Situating Therapeutic Philosophy and *Politique* Ethics in 20/21st Century Settings

To wit, and by way of a short but relevant passing digression designed to contemporize medicine of mind philosophical perspective in preparation for subsequent discussion of Bacon's *Politique* Ethics otherwise referred to in this enquiry as Architect of Fortune Ethics, Rising in Life Ethics, and Civil Business Ethics, it is no offence to philosophy in general, or to impressive scholars in particular, to ask how medicine of mind philosophy, whether ancient or more recent, might morally solve problems of clashes between unshakably medicined-in but incompatible ways of life existences.

The dialogical Socrates, Hadot's epitomizing example of philosophy as a way of life,

Terms Usage
Goethe-moment
I see no fault committed which I could not have committed myself.⁽¹⁾
Yahoo-moment⁽²⁾
Self-deceived sensitive being so detestable on all accounts, ever present from Plato's shadow boxers to Nietzsche's last man.
Notes: (1) (Goethe, 1906, p. 86). (2) (Swift, 1800, pp. 54, 290, 295 -297).
Source: Short form statements of terms explained on page 190.

is worded to say that for his way of life existence he deserves to be given his meals in the prytaneum *Apology* 36d (Plato, 1952a, p. 209; 1966a) but his hemlock death is outrageous, shameful and sobering for many. So too was

detention of Aung San Suu Kyi, (AD 1945 -) and assassination of Martin Luther King Jr. (AD 1929 – 1968) as examples of outcomes to practise of their respective way-of-life being. Can philosophy as a way of life regimen envelop communities to such an extent as to eradicate such Goethe and/or Yahoo-moment transgressions of natural law?

For example, given a Hadot-type already-medicined-in particular, ugly and destructive philosophy as a way of life value construct, one rendering mind a formidable and unassailable citadel of those particular values, and actions they permit, how is new medicine to be prepared and administered and on what ingredient values might it be termed a medicine?

To wit, one might be a devotee of Dionysian recitation and practice including its ugly *sparagmos*. If so, how might medicining in a Stoic management of passions proceed if management of passions is to be sought? This medicining of the passions question

is as relevant for therapeutic philosophy in today's world of terrorist murder, let alone the obscenities of war, unequal wealth distribution and poverty, child sex

“Wot prawce selvytion nah?”⁽¹⁾ Shaw as a Referent for Enquiry Purposes

UNDERSHAFT. It is settled that you do not ask for the succession to the cannon business.

STEPHEN. I hope it is settled that I repudiate the cannon business.

UNDERSHAFT. Come, come! Don't be so devilishly sulky: it's boyish. Freedom should be generous. Besides, I owe you a fair start in life in exchange for disinheriting you. You can't become prime minister all at once. Haven't you a turn for something? What about literature, art and so forth?

STEPHEN. I have nothing of the artist about me, either in faculty or character, thank Heaven!

UNDERSHAFT. A philosopher, perhaps? Eh?

STEPHEN. I make no such ridiculous pretension.

UNDERSHAFT. Just so. Well, there is the army, the navy, the Church, the Bar. The Bar requires some ability. What about the Bar?

STEPHEN. I have not studied law. And I am afraid I have not the necessary push—I believe that is the name barristers give to their vulgarity—for success in pleading.

UNDERSHAFT. Rather a difficult case, Stephen. Hardly anything left but the stage, is there? (*Stephen makes an impatient movement.*) Well, come! is there a n y t h i n g you know or care for?

STEPHEN (*rising and looking at him steadily*). I know the difference between right and wrong.

UNDERSHAFT (*hugely tickled*). You don't say so! What! no capacity for business, no knowledge of law, no sympathy with art, no pretension to philosophy; only a simple knowledge of the secret that has puzzled all the philosophers, baffled all the lawyers, muddled all the men of business, and ruined most of the artists: the secret of right and wrong. Why, man, you're a genius, a master of masters, a god! At twenty-four, too!

STEPHEN (*keeping his temper with difficulty*). You are pleased to be facetious. I pretend to nothing more than any honourable English gentleman claims as his birthright (*he sits down angrily*).

UNDERSHAFT. Oh, that's everybody's birthright. You are all alike, you respectable people. You can't tell me the bursting strain of a ten-inch gun, which is a very simple matter; but you all think you can tell me the bursting strain of a man under temptation. You daren't handle high explosives; but you're all ready to handle honesty and truth and justice and the whole duty of man, and kill one another at that game. What a country! What a world!

(Continued on the next page.)

slavery and sweatshops and the like, as it may be said to have been relevant to quelling of, and defence against, passionate persecution of Puritans in Bacon's time, and the passionate tit-for-tat civil war atrocities of Roundheads and Cavaliers later in the century of Bacon's death. Today's medicining-of-mind scholarship may, in part, reflect recognition of postmodernism's ongoing dilemma with a values relativism unable to bring new light to solutions of such problems.

The question asked of philosophy as a way of life at the end of the penultimate paragraph in respect of its efficacy in resolving clashes between differing way of life existences may be asked of other domains. For example a unified and shared religious convention seems to have been ever compromised as an agreed upon

values benchmark, governments appear to game ratified United Nations Conventions as guides for sustainable, just and peaceful being, and man-made laws have ever thus been violated over recorded eons. Shaw's question worded through Walker to the Christian sole-saving, one might even say soul-medicining, Major Barbara during her desperate loss-of-faith-moments, “Wot prawce Selvytion nah?” (Shaw, 1917, p.

114), is devastating and loses little of its cut, when by extension to arts, philosophy, politics and the like Shaw raises the baffling question of right and wrong for Goethe-moment humanity in conditions of moral and cultural plurality.

A quotation illustrating Shaw's take on the question of right and wrong in plural

"Wot prawce Selvytion nah?"⁽¹⁾ Shaw as a Referent for Enquiry Purposes

(Continued from the previous page.)

LADY BRITOMART (*uneasily*). What do you think he had better do, Andrew?

UNDERSHAFT. Oh, just what he wants to do. He knows nothing; and he thinks he knows everything. That points clearly to a political career. Get him a private secretaryship to someone who can get him an Under Secretaryship; and then leave him alone. He will find his natural and proper place in the end on the Treasury bench.

STEPHEN (*springing up again*). I am sorry, sir, that you force me to forget the respect due to you as my father. I am an Englishman; and I will not hear the Government of my country insulted. (*He thrusts his hands in his pockets, and walks angrily across to the window.*)

UNDERSHAFT (*with a touch of brutality*). The government of your country! I am the government of your country: I, and Lazarus. Do you suppose that you and half a dozen amateurs like you, sitting in a row in that foolish gabble shop, can govern Undershaft and Lazarus? No, my friend: you will do what pays us. You will make war when it suits us, and keep peace when it doesn't. You will find out that trade requires certain measures when we have decided on those measures. When I want anything to keep my dividends up, you will discover that my want is a national need. When other people want something to keep my dividends down, you will call out the police and military. And in return you shall have the support and applause of my newspapers, and the delight of imagining that you are a great statesman. Government of your country! Be off with you, my boy, and play with your caucuses and leading articles and historic parties and great leaders and burning questions and the rest of your toys. I am going back to my counting house to pay the piper and call the tune.

STEPHEN (*actually smiling, and putting his hand on his father's shoulder with indulgent patronage*). Really, my dear father, it is impossible to be angry with you. ... It is natural for you to think that money governs England; but you must allow me to think I know better.

UNDERSHAFT. And what does govern England, pray?

STEPHEN. Character, father, character.

UNDERSHAFT. Whose character? Yours or mine?

STEPHEN. Neither yours nor mine, father, but the best elements in the English national character.

UNDERSHAFT. Stephen: I've found your profession for you. You're a born journalist. I'll start you with a high-toned weekly review. There!

Notes: (1) (Shaw, 1917, p. 114)

Source: Shaw, G. B. (1917). *Major Barbara*. (pp. 125 – 128). New York: Brentano's (sic). (Shaw, 1917).

society is contained in the dialogue box spanning pages 537 and 538. Shaw's biting satire is confronting and arresting and is included as a contemporising marker and exemplar of an intractable human condition and moral enigma which Bacon, in his attempt at describing Civil Ethics, may have been addressing in his own way in his own times, of which more later. Like Undershaft, Bacon is confronted by appalling courts and parliaments, and is sanguine about the kinds of human nature best fitted to a life *politique*. Shaw is white hot in comparison with Bacon but then Bacon might be seen as breaking the news about an arriving new Ethics—*Politique* Ethics—for an arriving new era while Shaw is writing some 240 years into that new era in development. Likewise Shaw might be considered white hot by comparison with early twenty-first

century protestation about *politique* behaviour voiced some further 110 years since,

by which time citizens, at least in some countries, have some modicum of institutional capital and ballet box redress to countervail beyond the pale *politique* behaviour. Neither Shaw’s white hotness, nor twenty-first century apparent sanguine

Terms Usage
Ovid or Video-sequor Moment⁽¹⁾
 I see and approve of the better but follow the worse solution
Augustine-moment⁽²⁾
 God give me the strength but not just yet.
Goethe-moment⁽³⁾
 I see no fault committed which I could not have committed myself
Yahoo-moment⁽⁴⁾
 Self-deceived sensitive being so detestable on all accounts, ever present from Plato’s shadow boxers to Nietzsche’s last man.

Notes: (1) *Metamorphoses* VII, 20 - 30 or VII 25 – 30 (Ovid, 1826, p. 159; 2008, p. 144). (2) Anecdote. (3) (Goethe, 1906, p. 86). (4) (Swift, 1800, pp. 54, 290, 295 - 297).

Source: Short form statements of terms explained on page 190.

acknowledgement of corrupt politicians, might, in and of themselves, not obscure a possibility that Bacon’s innovatory *Politique* Ethics is, for its times, a much more significant departure than it may first now appear. This contention and others are addressed in further discussion of Bacon’s Civil Business/*Politique* Ethics beginning on page 544 where discussion of Bacon’s step into Goethe-moment being and its consequences for Philosophical or Theological Ethics is further articulated. Until then, and

beginning in the next paragraph I resume discussion of therapeutic philosophy left off for digression purposes on page 536.

Discussion of Therapeutic Philosophy Continues

In a work with Vermier (2012, pp. 183 - 236) Corneanu discusses the Baconian idols

And So Ethical Dilemma Continues

“The people of our United Nations are not as different as they are told. They can be made to fear, they can be taught to hate, but they also respond to hope. History is littered with the failure of false prophets and fallen empires who insisted that might makes right, and that will continue to be the case. You can count on that. But we are called upon to offer a different leadership—leadership strong enough to recognize that nations share common interests and people share a common humanity.”
President Obama’s closing sentences in his address to the 70th General Assembly of the United Nations on 15 September, 2015. (Obama, 2015, n. p.).

more specifically in a medicine of mind context which focusses on imagination and its possible role in so-called curative or therapeutic philosophy. Their investigation is predicated on medicine and healing metaphor found in Bacon’s writing and their exegesis allows them to claim explicit and implicit imagination-bridging of various subdivisions of Bacon’s

knowledge hierarchies like the one’s constructed throughout this chapter for explanation purposes. Their sweep is wide and encompasses the faculties of mind and their arts, the league of mind and body, and natural, moral and human philosophy. These authors also attribute Stoic overtones and parallels to Bacon’s medicine-of-mind idols physiology (ibid., pp 187 – 188) and more specifically Stoic

phantasia (ibid., p. 195) understood as sense impression and its cognitive affection in the material soul. It is sobering to recall that, in respect of all present-day interpretations of Stoicism, no complete work of any early and middle Stoic

Terms Usage

According to Colish (1990, p. 51) Stoic theory of knowledge did not change significantly after Chrysippus (BC 279 – 206). True and certain knowledge about the real world is possible due to a current of rational *logos* from the *hégemonikon* or control center to the sense organ, thence to the air surrounding the sense object, thence back to the mind where it dumps the sensed object as *phantasia* it carried back with it. The *hégemonikon* now subjects the *phantasia* to a process of *synkatathesis*, that is, a free and conscious act of judging the correctness and moral status of the *phantasia*, this latter being an automatic action. *Synkatathesis* is complete if and when it certifies correctness and assigns moral value, which acts of certification and assignment convert *phantasia* into *phantasia kataleptike* bringing objective and subjective certainty to mind (ibid., pp. 51 – 52). Watson (1998, pp. 208 - 209) detects phantasy in the modern senses of imaginary, unreal or ideal emerging around the time of Philostratus (circa A.D. 170 to 250)

philosopher survives, those complete works which do survive being Roman texts of the late Stoa, Cicero being instrumental in conveying Stoic construct from Greece to Rome. Hadot is acknowledged in a footnote (ibid., p. 184).

Corneanu and Vermier’s choice of Socrates’ contested resistance to Alcibiades’ erotic advances as a stand-alone abstracted example of control of passion pending clarification of mind might serve as equally efficacious as a

stand-alone example in Puritan, Calvinistic, Schoolman settings, as it does in the Stoic setting in which the authors placed it, and there appears little acknowledgement of a Hadot *qua* philologist problem of the layers that might be peeled back, if peeled back they can be, to distill Stoicism itself, even though Bacon’s exposure to possible

Samson and Delilah



Source: Cropped by Ian Eddington from Echenagusía, J. (1884). (artist). *Samson and Delilah*. (oil on canvas). Bilbao: Museo de Bellas Artes de Bilbao. (Echenagusía, 1884).

intermediate sources is acknowledged.

Lancaster (2012, pp. 181 - 196) views *Natural History* as an introduction or kind of ideas reservoir or springboard—his term is propaedeutic—for self-betterment, and distinguishes Bacon’s construct of self-betterment from a more general usage of it employed by renaissance humanist historians such as Gessner (AD 1516 – 1565) and Topsel or Topsell (AD 1572 – 1625), and also by Erasmus (AD

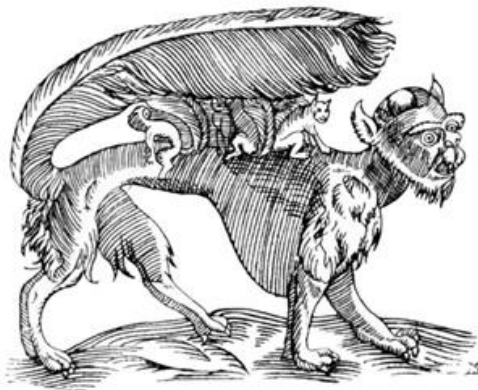
1466 - 1536) and Rabelais (AD 1494 - 1553). He predicates Bacon’s expression of self-betterment in *The Great Instauration* (F. Bacon, n . d.) on Christian charity *qua*

social betterment, and in so doing differentiates it from a more general renaissance usage predicated on individual self-betterment. On this basis Lancaster detects a moral dimension in Bacon’s Natural History and its role in his *Great Instauration* (F. Bacon, n. d.-b), and interprets this differentiated usage as a transformation of renaissance Natural History.

Sharpe (2014, pp. 89 - 121), in complement of Corneanu’s culture-of-soul-literary-genre scaffolding of Bacon’s epistemology (Corneanu, 2011), articulates Bacon’s Georgics of the Mind from a philosophy *qua* therapeutics perspective. His twin purpose is to demonstrate first, how “Bacon’s conception of human nature, and the importance of habit and custom” (p. 89) and second, how, his, Bacon’s, sensitivity to “the proliferation of different rhetorical, and literary forms aiming at different pedagogic, therapeutic and psychogogic aims (ibid., p. 89), might each reflect “the ancient pagan thinkers’ justifications of philosophical therapeutics” (p. 89). Bacon’s sensitivity to those literary forms is taken as sensitivity to “another marker of ancient

Imagination in the Century of Bacon’s Death

Of a Wilde Beast in the New-found World called SU



Source: Cropped by Ian Eddington from Topsel, E. (1648). *The History of Four-footed Bests and Serpents*. (p. 411). London: Published by E. Cotes for G. Sawbridge at the Bible on Ludgate hill, T. Williams at the Bible in Little-Britain and T. Johnson at the Key in Paul’s church yard. (Topsel, 1648). Not all engravings from Topsel are so fabulous and many can, without difficulty, be recognised today, by the names by which they are called in Topsel’s publication.

therapeutic philosophy as Pierre Hadot in particular, has recently presented it” (ibid., p. 89) and, in respect of reflection on those ancient pagan thinkers’ justifications, Sharpe detects in Bacon’s advocacy of practical exercises “a surprising proximity to the Stoics in particular” (ibid., p. 96), a proximity which he subsequently qualifies by acknowledging Bacon’s put-downs of aspects of Stoicism, and more generally in terms of Bacon’s acknowledgement of limitation of rhetoric *per se* (ibid., p. 101). However,

by the end of Part 3 of Sharpe’s contribution the reader is fully appraised about newness and novelty in respect of Bacon’s therapeutic philosophy.

In his clarification Sharpe names the passions—they have the capacity to overpower judgement and affect best human theoretical and practical endeavour—as the object of his, Bacon’s, philosophical therapeutics (ibid p., 99); specifies the aim of Georgics of the Mind *qua* philosophical therapeutics “[as] ‘superinducing’⁷³ new beneficent habits or ‘customs in the psyche’⁷⁴” (ibid., p. 103, my square brackets), the numbers 73 and 74 footnoting qualifications not discussed further in this inquiry; advocates rectification of bad habit as a key role for collection and memorisation of percepts and apothegms urged in Bacon’s Georgics (ibid., p. 105); and identifies “Bacon’s conception of human nature, and the importance of habit and custom” (ibid., p. 96) as one reflection of ancient therapeutical philosophy. A second reflection of such philosophy, in this case its appeal to a range of literary forms to “transmit knowledge or tradition” (ibid., p. 100), is drawn from Bacon’s recognition of poets and historians as doctors of knowledge (ibid., p. 100 - 101), and on page 104 Sharpe further articulates his second aim noting that the means to the cure of mind, those means declared by Bacon as “sadly neglected amongst the ancients” (ibid., p. 104), nevertheless resemble Hadot’s spiritual exercises *qua* “key markers of ancient therapeutic philosophy” (ibid., p. 104). A third reflection is detected in Bacon’s argument that “the only way philosophy could be able to move the passions therapeutically ... is if it takes upon itself the charge of rehabilitating individuals’ characteristic ways of thinking and acting” (ibid., p. 102). A philosopher might occasion such a rehabilitation through mastery of a variety of literary forms subject to the nature of students’ engagement with them and their willingness to apply learnings in management of their own passions and lives (ibid., p. 102). Sharpe acknowledges involvement of religious faith in Bacon’s therapeutical philosophy (ibid., p. 104), imagination’s communication with reason in respect of medicining passions of mind towards goodness (ibid., p. 108), and efficacy of rhetoric, *qua* eloquence of persuasion, in winning imagination to the side of reason in its confrontation with the passions (ibid., p. 108).

In Part 3 Sharpe questions whether Bacon *qua* philosophical therapist constitutes an exception to Hadot’s postulated disappearance of ancient medicining of mind traditions or whether he goes further, whether “Bacon’s ‘magistral’ philosophy significantly challenges some of the key substantive commitments of ancient pagan

philosophical ethics” (ibid., p. 109). Differences are addressed, for example Bacon’s reported unease with Platonic and Aristotelian private contemplation of good and his, Bacon’s, leaning towards an individual’s charitable participation in public good; a detected narrow and private nature of ancient philosophical medicining and its compromise of magnanimity; Bacon’s downplaying of Stoic attempts to eradicate passions and his, Bacon’s, perceived disaffection with ancient conditioning of uniformity and harmony of mind to the detriment of consideration of contrary notion; an Ethics more active in embrace of the adverse and contrary than Neostoicism might countenance; Bacon’s reach to literature and history for purposes of extending therapeutical Ethics beyond those narrow Stoicism-*qua*-referent of ancient therapeutic philosophy confines and last, but not least, Bacon’s architect-of-fortune call for an enabling Ethics of public life whereby active man[kind] *qua politique* might advance their progress and welfare. This last difference, “Bacon’s most remarkable departure from [the call of] philosophical ancients” (ibid., p. 116, my square brackets) for self-knowledge and attendant therapeutic exercise is to place that call “in the service of a new kind of half-Puritan, half-Renaissance-courtier ethical ideal” (ibid., p. 119).

Given Sharpe’s instructive detection of threads of therapeutic philosophy in Bacon’s innovative lark to hawk (F. Bacon, 1898a, p. 319; 1909-1914b, p. 270) Civil Business/*Politique* Ethics, and given the qualification expressed earlier beginning on page 467 in respect of Bacon’s perceived enigmatic persona, his real-life pushing of his own advancement, and for him, Bacon, its tragic consequences, some might be quick to gainsay depiction of Bacon as a seventeenth century equivalent of a Hadot-type sage within an Architect of Fortune Ethics he, Bacon, sketches. Given that an architect of fortune *qua politique* must make their way in civil business, and that truth for civil business is not theological or philosophical truth *Of Truth* (F. Bacon, 1909-1914b, n. p.), a Hadot-type sage construct is hardly a suitable or even viable referent or criterion in these circumstances. Nevertheless, Bacon’s identification of Ethics for civil business as a separate category of Ethics is itself indicative of his innovation and insight and one wonders, without intended flippancy, or devaluation of Bacon’s contribution, or attribution of blame to Bacon, whether core promises and non-core promises, and tell-them-anything limited-shelf-life lies are now an

inevitable part and parcel of early twenty-first century *politique* truth permissions in election campaigns in countries like Australia. As mentioned in numerous places in this chapter, there are already those who name Bacon Machiavellian, atheist,

<p style="text-align: center;">Goethe-moment⁽¹⁾</p> <p>I see no fault committed which I could not have committed myself</p> <p>Notes: (1) (Goethe, 1906, p. 86).</p> <p>Source: Short form statements of terms explained on page 190.</p>

Calvinist, Stoic, Patristic, Augustinian, sitting on a fence dividing religious from secular, and other names as well, and in this chapter's section on *Polis* later following, I cite authors finding a strong Christian presence among other influences

in *New Atlantis* (F. Bacon, 1952a). This present chapter carries no intention to conjecture yet another name to add to the list already attributed to Bacon and in the next paragraph I resume discussion of Bacon's step into the Goethe-moment being of his *Politique* Ethics suspended on page 539.

Discussion of Bacon's Innovatory Architect of Fortune Ethics Resumes

Sharpe has spotlighted Bacon's "half-Puritan, half-Renaissance-courtier ethical ideal" (2014, p. 119) and this illumination may in reply attract scholarly depictions of Bacon in Aristotelian clever-man versus moral-man, or continent-man versus incontinent-man terms. Other participants may emerge to interpret Architect of Fortune Ethics from a psychological perspective as a creative outpouring of Bacon as a particular personality type, selfish or unselfish as the case may be, emanating from his own Idol of the Cave or Den entrapment in court and public affairs. Irrespective of the validity or otherwise of such surmise, the discussion on therapeutical philosophy being lifted by Corneanu, Sharpe, Lancaster, and Harrison, and in related fields, for example medicining of melancholy by Schmidt (2007) and prolongation of life by Jackson (2010, pp. 140 - 371), offers a window for timely reflection about, and search for, a sustainable action Ethics to medicine-in open government, safe and civil society, and social and responsible business in today's sometimes brutal and often complex values matrix. In respect of such a quest, philosophy is as much under challenge as politics, theology and humanism. In respect of such a quest Bacon might well be read alongside Heidegger and Arendt, and countervailing others too, in search of insights into good and bad conduct and performance of active above passive moral being, but surely not to the exclusion of Plato and Aristotle, or for that

matter even Aquinas, or in dismissal of Goethe whose no-crime-so-awful statement remains an ongoing and inconvenient confrontation and challenge for humanity.

To wit, on the face of it, over the millennia of Western philosophic thought, it appears that the best of minds, in bringing forward their outstanding and instructive conversations on the nature and definition of Ethics and morality, have known of mankind's brute presence, acknowledged it, sometimes offered general advice about how to act out good being in specific circumstances, and moved on without necessarily attempting to construct a self-service moral action algorithm that their identified Goethe-moment humans—that procession of Plato's cave-dwelling murderers of returning enlightened ones, Aristotle's most unholy and most savage of animals, Aquinas' hopeless, faithless, loveless, Bacon's pests, busy, mischievous and wretched vermin, Swift's Yahoos, or unfortunate Struldbrugs, or those critics happy in perpetual possession of self-deception, and after all that, Nietzsche's last men—might adopt to occasion our own individual moral beings: yes G.B.S. what a species, what a challenge, what an impasse.

The posited conjecture in the paragraph above does not focus on the scholarly delineations of ethical life discussed in earlier chapters, nor the repeated confirmations of Ethics as act, rather—given the claim made earlier on page 528 that Bacon issues suggestions about what a *politique* be excused of doing or not doing, and therefore of being or not being, in comparative good settings of Goethe-moments—the focus is on how individuals may think and act to remain existentially ethical during such Goethe-moments of temptation, Goethe-moment transgression being understood as occurring outside of stated prohibitions, outside of preventive Ethics domains such as ten commandments for example. In preparation for discussion of Bacon's novel confrontation of this impasse I provide a one paragraph recapitulation of Bacon's Ethics as it has so far been discussed in this chapter.

Bacon's Philosophical or Theological Ethics is conventional in that there is in all native beings an appetite for perfective good. In humans it is active at a self-good level wherein rhetoric assists logic in regimenting imagination to will's alliance with reason in its task of discerning ethical being *qua* correct choice between comparative good alternatives. In this process Ethics is the servant of theology. At a good-in-

communion level Ethics manifests in a mind well-formed towards others, a mind at work in its duty to promote welfare of society. Yet, as Bacon's lark to hawk metaphor (c.f. F. Bacon, 1898a, p. 319; 1909-1914b, p. 270) and other comments reveal, Bacon's Architecture of Fortune Ethics is a subset of his formulation of Philosophical or Theological Ethics and in this subset form, Ethics is a compromised servant of Christian theology because in this domain Ethics serves other referents as well, for example, humanistic philanthropy and renaissance-courtier values.

To continue, Sharpe has already clearly unearthed footings on which Bacon's Architect of Fortune Ethics might be built. Other referents, for example fable, myth, proverb, classical literature ideals, outstanding example set by ancient personages, more general historical example taken from ancients and some nearer to Bacon's own time, an amalgam of self-interest, and Stoic and sceptical virtue elements, are also implicated as this chapter subsequently reveals. Now in respect of Bacon's step into Goethe-moment being, that is his step into articulation of actions excusable for *politiques* of fortune, this conundrum of Goethe-moment impasse may yet be approached, in words at least, with some optimism, because morality as good-in-communion cannot completely disappear, irrespective of levels to which it might sink, while some individuals battle for good-in-self and in-common in comparative good settings—and battle they will by virtue of an appetite for perfective good found amongst God's creatures.

Yet it may well be a difficult optimism to defend. For example positions variously taken by both Aristotle and Bacon do not necessarily justify optimism. For example, Aristotle holds that when the ratio between the number citizens honouring just and good constitution and the number of citizens dishonouring it falls below a Rubicon value, societies will fail *Politics* IV 1296b15 (Aristotle, 1944; 1952r, p. 496) and Bacon, as earlier explained on page 526, allows that thwarting of perfective individual self-good, that is, thwarting of the process by which inferior natures aspire to higher natures, may tip society into calamity. How such societies are to recover is as pertinent a question today as it has been in the past and in some countries it may be a desperate question of whether it is down to Strauss' few, if any, exceptional people in each generation.

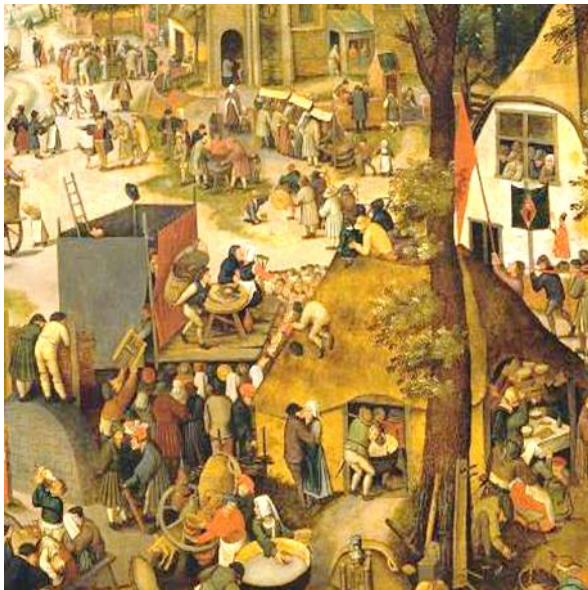
In addition, to be optimistic in the face of sanguine hindsight about Bacon's step into Goethe-moment being, one might, by way of imaginative and speculative challenging example, confront a possibility that there may be, bellied up to and thumping bars around the world, or more comfortably in chardonnay numbness in places high or low, those who hold Socrates and the Luther Kings of life complete and utter serve-themselves-right Quixotes, and contemptible for their stands, or alternatively a possibility of many desensitised other humans who hold, on the basis of our experience of the human condition alone, that to simply raise the question of morally bridging Goethe-moment impasse might be viewed with incredulity as gauche and get-a-life. Irrespective of such desperate image-making conjecture I contend that, wisely or unwisely, bravely or recklessly, or in some other condition as the case may be, Bacon did challenge that impasse by advocating an Architecture of Fortune/Art of Rising Life/Self-Politician/Civil Business Ethics, *Advancement of Learning* (F. Bacon, 1898b, pp. 319, 330, 335, 294 - 338) henceforth also called *Politique* Ethics, in which he ventures towards providing specific opinions about what passes for ethical conduct for those making their way in these domains. He builds a kind of half-way house for containment purposes. Certainly, as Bacon makes clear, *Essay XIII: Of Goodness and Goodness of Nature* (1909-1914d), a step away from Philosophical or Theological Ethics, *qua* a step towards *Politique* Ethics is a second best solution requiring relaxation or bending of some of the strictures that Philosophical or Theological Ethics would apply, but he does not give *Politique* Ethics free reign, he does not untie it from the perfecting example of Philosophical or Theological Ethics *Essay I: Of Truth* (F. Bacon, 1909-1914b, n. p.).

Further, in respect of optimism, given that Bacon's general discussion on *Politique* Ethics *Advancement of Learning* (F. Bacon, 1898a, pp. 294 - 338), including Aphorisms I – XXXIV (*ibid.*, pp. 300 – 319) is most instructive, and given that little offence might be taken to his circumlocution, slight-devilling of scriptures, and a kind of Tantalus predicament setting he employs for discussion purposes, some relaxations he elsewhere allows may well be considered appalling as subsequently discussed. In his general discussion Bacon glances from man to man, from man to God, from God to man—he is reminiscent of Plato's Socrates “glancing in turn from one to the other of them” *Republic* (Plato, 1952r, IX, p. 419; 1969a) in his, that is,

Socrates’ discussion of best kinds of men for best kinds of states and an attendant requirement of “virtue and happiness ... of man in relation to man” (ibid., p. 418)—and for so long as Bacon’s tantalised *politique* may not abandon his/their mind well-ordered and composed in itself, well disposed towards others, and answering to theology, he/they may well have as much anxiety in receding with a falling tide of Philosophical Ethics as rising with an incoming tide of Architect of fortune Ethics to pick the first fruit that new machine of science, the *novum organum*, will offer those inheriting a New Atlantis. As earlier mentioned *Politique* Ethics is outside of New Atlantis.

In addition, and gain in respect of optimism, given the questionable morality of Elizabethan and Jacobean courts earlier discussed, and given that theatrically humorous but sadly human parade of stereotypes soon to walk across page 549 of

Theatre in Fourteenth Century Country Europe



Source: Cropped by Ian Eddington from Pieter Brueghel the Younger, (1500s). *A Village Fair or Village Festival in Honour of Saint Hubert and Saint Anthony*. (oil on panel). Auckland: Auckland Art Gallery. A saintly procession, right above centre, passes by a performance at a country theatre.

this enquiry, and postulating those givens as experiential bases from which Bacon might proceed to articulation of Architect of Fortune Ethics, it is a wonder that he found strength to proceed at all, even if such strength might, as some are bound to argue, emerge from a sense of his own misfortune rather than from a sense of good fortune for all. As earlier mentioned, a present day Ethics *qua politique* is writ large on a daily basis in media releases in countries like Australia whose citizens do, from time to

time, appear to vote against excessive greed and the like, established institutional capital as earlier mentioned, serving to provide some relief. To apply such advantages of hindsight in analysis of Bacon’s case might not necessarily be disqualified on anachronistic grounds. Foibles of human nature were writ large in the media outlets of Bacon’s day as well—John Donne’s sermons, public standing pits

and better seats at theatres like the Red Lion, Bear Garden, Swan and Globe, and campus and country stages too. Even Shakespeare aside, that whole procession of human condition is paraded for public consumption—here walks Sir Petronel Flash, Quicksilver and Gertrude (Jonson, Chapman, & Marston, 1605/1903), Squire Tub, Knowell and Brainworm (Jonson, 1601), Wasp and Overdo (Jonson, 2015a), Subtle, Force and Doll Common (Jonson, 1903), and that basket of unfortunates, Volpone the fox, Mosca the fly, Voltora the vulture, Sir Politic and Lady Would-Be and others (Jonson, 1616). Jonson, who had already spent a time in jail for murder, spent a second spell there for offending the Scots in *Eastward Hoe* (Jonson et al., 1605/1903, p. vi) and just how Bacon might have taken Johnson’s *Alchemist* (Jonson, 1903) and its mockery of alchemy and self-advancement would be interesting to know. As well, Greek myths and morality aside, just some of the books of the so-called *Old Testament* Bacon surely would have read abound with examples of petty and not so petty behaviour he allows his *politiques* and perhaps others. There the wisdom of Solomon appears lost on King David whose exhibitionism and sometimes awful death-plotting stratagems could, from 1611 on, be read about in English. There in the Elizabethan and Jacobean Courts, and increasingly in their environs, having to acknowledge those Sirs Politic, Squires Tub and Dolls Common, a *politique* must seek his fortune amongst a mankind of “busy, mischievous, wretched thing[s]; no better than a kind of vermin” *Of Goodness and Goodness of Nature*. (F. Bacon, 1909-1914d, n. p.) such “as it were, in season ... not so good as the dogs that licked Lazarus’ sores; but like flies that are still buzzing upon any thing that is raw; *misanthropi* [haters of mankind],” (ibid, n. p., my square brackets) enough to make one hang oneself (ibid., n. p.). Yet persons carrying these dispositions which “are the very errors of human nature” (ibid.) are “the fittest timber to make great politics of” (ibid.). Whether such dispositions *qua* errors of human nature housed in great *politiques* make the truth for Civil Business or *Politique* Ethics a truth of pretergeneration is a question not discussed further in this enquiry yet it is an awful thought if such an interpretation correctly catches Bacon’s intended meaning.

Nevertheless, irrespective of the speculation of the previous sentence, in order to pass from “theological and philosophical truth to the truth of civil business” *On Truth* (F. Bacon, 1909-1914b, n. p.) *politiques* as pragmatic persons must exercise an

appropriate learning, one that is “not like a lark which can mount and sing and please itself and nothing else”; but rather one which “partakes of the nature of a hawk which can soar aloft and can also descend and strike upon its prey at leisure” (c.f. F. Bacon, 1898a, p. 319; 1909-1914b, p. 270). Larks do though have to hunt for sustenance but Bacon’s metaphor seems to work and in any case a swooping hawk is a different kind of mind set from the one called for at *Apology* 36b - 36c (Plato, 1952a, p. 209; 1966a) or expressed in the spirit of the so-called *New Testament*. Are such kinds of persons Bacon describes, armed with such kinds of thought, the *politiques* to whom Bacon would deliver Science’s discoveries of “new Instruments of Destruction, in the way of War, Poison, &c” *Magnalia Naturae* (F. Bacon, 1733, p. 30), or entrust with state management of mankind’s power over nature, those for whom he increasingly “pray[s] ... may administer [Science and its power] to the advantage and happiness of mankind” *The Scaling Ladder of the Intellect* (F. Bacon, 1850c, p. 520, my square brackets)? Again, given the weight of such a heavy apperception of political life as that expressed by Bacon, one may cling to optimism about it as best they can.

While Bacon approaches his architect of fortune task soberly, feet on the ground—“it may seem a new and odd kind of thing to teach men how to make their fortunes ... for the things required to procure fortune are not fewer or less difficult than those to procure virtue ... [it being] as rigid and hard a thing to become a true politician as a true moralist” (F. Bacon, 1898a, p. 319), and while private fortune might be no measure of moral worth, “as the instrument of virtue and doing good, [it] is a particular doctrine, worthy of consideration” (ibid., p 319, my square brackets).

Yet Bacon appears divided about the basis upon which his human Ethics is built. For example whereas in *Advancement of Learning* all things were “indued with an appetite to two kinds of good” (F. Bacon, 1900b, p. 213), in his essay *Of Goodness and Goodness of Nature* (1909-1914d) he retains an earlier established qualified version:

Neither is there only a habit of goodness, directed by right reason; but there is in some men, even in nature, a disposition towards it; as on the other side there is a natural malignity. *Of Goodness and Goodness of Nature*. (F. Bacon, 1909-1914d, n. p.)

and the countervailing medicine-of-mind he prescribes for his *politiques* in the face of such a divide between goodness and malignancy is what the “Grecians call *philanthropia*” *Of Goodness and Goodness of Nature*. (F. Bacon, 1909-1914d, n. p.), “the word *humanity* (as it is used) ... [being] a little too light to express it” (ibid., n. p.), all be it a Greek *philanthropia* “dressed in the character of the Deity” (ibid., n. p.), predicated on theological charity or love, and whose only error is excess (ibid.). It is little wonder then, given that apparently intractable human dimension Bacon has faced up to, that the actions he sanctions as morally appropriate for *politiques* in particular situations are offered with such a pinch of sugar.

Examples of actions excused in *Politique* Ethics mode are expressed in Aphorisms I – XXXIV of Chapter 2, Book VIII of *Advancement of Learning* (F. Bacon, 1898a, pp. 300 - 316), and in Bacon’s discussion on the doctrines of business, and rising in life in that same chapter (ibid., pp. 316 – 337). Some of his essays (F. Bacon, 1909-1914a, 1909-1914b, 1909-1914c, 1909-1914d, 1909-1914e, 1909-1914f) reveal Bacon at work in elucidating his new Ethics. Here his technique admits fable, myth, proverb, classical literature ideals, outstanding examples set by ancient personages, more general historical example taken from ancients, Machiavelli, Christian scripture, and an amalgam of self-interest, Stoic, and sceptical virtue elements as *Politique* Ethics referents.

In those works cited above in the previous paragraph Bacon identifies some actions

<p>Terms Usage Ovid or <i>Video-sequor</i> Moment⁽¹⁾ I see and approve of the better but follow the worse solution. Goethe-moment⁽²⁾ I see no fault committed which I could not have committed myself</p> <p>Notes: (1) <i>Metamorphoses</i> VII, 20 - 30 or VII 25 – 30 (Ovid, 1826, p. 159; 2008, p. 144). (2) (Goethe, 1906, p. 86).</p> <p>Source: Short form statement of terms explained on page 190.</p>	<p>as unethical, for example dissimulation, feigned friendship, less than plain speaking, broken promise and the like. Yet at the same time he admits exceptions, or spices his discussion by countenancing benefits that might accrue upon admission of a little of these unethical ingredients on certain occasions. In this reject-then-countenance-a-little approach to self-</p>
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politician departures from ideal ethical behaviour—his adduction of Machiavelli to his cause (F. Bacon, 1898a, pp. 311, 317, 331 - 332) and then distancing himself from him at the end ibid., p. 335) is one example of this technique—there is a sense

of inevitability about the presence of such defects, and although he seldom strays from declaration of philosophical and moral virtue being superior to self-politician architect of fortune virtue, Ovid-moment is discernible and might be conjectured as a frequent existential condition interrupting Goethe-moment awareness plausibly employed by seasoned *politiques* to filter everyday affairs of business of life. No suggestion is made that such Ovid-moment filtering of Goethe-moment mindset might be the only existential mode occurring. Given Bacon’s opinion about the stuff of which best *politiques* are made, even Yahoo-moment existence might not lightly be ruled out as default position for some. Certainly some of the actions Bacon pardons himself *qua politique*—they are outlined beginning on page 552 of this enquiry—might reasonably evoke alarm about efficacy and containment of an Architect of Fortune category of Ethics.

Augustine-moment existence, *qua* slight differentiation of Ovid-moment being in

Terms Usage

Augustine-moment⁽¹⁾
God give me the strength but not just yet.

Yahoo-moment⁽²⁾
Self-deceived sensitive being so detestable on all accounts, ever present from Plato’s shadow boxers to Nietzsche’s last man. (2) (Swift, 1800, pp. 54, 290, 295 - 297).

Source: Short form statement of terms explained on page 190.

that it carries a request for help, is, in heavy situations where any person will do any thing, although hardly pardonable, is understandable as a condition likely to occur among Bacon’s *politiques* and plausibly in the lives of many of us and possibly rarely in the lives of some very few.

Specific actions permitted an architect of fortune are such as these: to deflect envy of one’s own virtues, ascribe them to “good Providence and Fortune” *Essay XL: Of Fortune* (F. Bacon, 1909-1914e, n. p.); to prevent a final downfall resulting from extreme self-love—are extreme narcissists so capable?—let reason separate self-love from action *Of Wisdom for a Man’s Self* (F. Bacon, 1909-1914f, n. p.); when fame or opinion, secrecy in habit, or dissimulation fail to support desired projections of character, then develop a power to feign *Of Simulation and Dissimulation*, (F. Bacon, 1909-1914a, n. p.); that in behaving to establish one’s reputation as a clear dealer, a little falsehood may act as an alloy just as introduced substances act to alloy gold and silver in coins *Of Truth* (F. Bacon, 1909-1914b, n. p.); and when honour is challenged out-gun competitors by outshining them at their own game including the

use of servants to communicate ostentation *Of Honor and Reputation* (F. Bacon, 1909-1914c, n. p.). All of such behaviours might, in present times, regrettably or otherwise, be accepted by many as commonplace naked ape (Morris, 2005) stratagem and spoil, but whether such speculative comment is true or not, it implies neither an excuse for petty human behaviour nor condemnation of Bacon's architect of fortune treatment of it. None of such *politique* strategies enhance personal integrity.

Such sanctioned behaviour, written up so eloquently in Bacon's essays and other cited works, and ridiculed so effectively in plays of his time and now arguably streamed *de rigor* day and night on radio and television, though despised and despaired of by some, might be reasonably tolerated in less than the best of perfect-world political environments by voters in free democracies, and others too under more restrictive political duress, who, even possibly knowing their own shortcomings, clearly signal they would have their leaders not employ such behaviours. Dare it be said, that to pillory Bacon the man on such counts is to pillory a human condition from which none of us might be entirely free. Even so, such a dare-it-be-said is again a poor foil in defence of petty human behaviour.

Yet when it comes to acknowledging behaviours that Bacon *qua politique* allowed himself as architect of his own fortune, serious behaviours such as some of those discussed in the first section of this chapter, and other get-above-the-rest behaviours intended for his own use and noted in his *Commentaries Solutus sive Pandecta, sive Ancilla Memoriae* (F. Bacon, 1868a), some present day voters might balk at pardoning such Uriah Heep-and-worse activity in their preferred candidates, even whether or not they recognise such behaviours in themselves. There in the *Commentarius Solutus* Bacon ratifies promoting his fortune through ingratiating himself to one in power and supporting that person's views whether they are considered right or wrong; putting words into peoples' mouths, that is their speeches, and planting ideas in their heads; courting acquaintance with the King's Bedchamber for the sole purpose of access to the King; engaging eminent persons in public conversation to enhance his own reputation; undermining a current Attorney General whose position Bacon covets by urging on powerful people his, Bacon's, superiority

and/or obsequiousness as the case may be; issuing compliments and/or messages of sympathy, and constructing stratagems mainly to induce persons to remember him in their wills; preparing his own way to office by throw away lines about, and casual ridicule of, carefully studied Achilles' heels opportunities of those he would depose; and charting a course to gain practice in the Star Chamber (ibid., pp. 40-41, 45 – 49, 52, 56 – 57, 63, 75, 93 – 94).

Again, with perhaps the exception of the Star Chamber example, such activities might be portrayed as unfortunate and unavoidable dimensions of human political nature. Somehow though, permitted exceptions of this kind are received as more contemptible when Bacon issues them to himself, against the rest of us, than when he issues them to the rest of us so elegantly in his open essays. Is rhetoric at the service of truthful reason in his essays, as he says elsewhere rhetoric should so serve *De Augmentis* (F. Bacon, 1882g, p. 131), or is it helping to sell a Civil Ethics, or are his essays one big permissible architect-of-fortune dissemble?

Given such a litany of qualifications in respect of Bacon's *Politique* Ethics, can that stand for optimism made on page 546—namely that in spite of a Goethe-moment capacity in mankind, and in the face of Bacon's advocating a relaxation of Philosophical Ethics standards for mankind in *Politique* Ethics mode, an optimistic position might yet be taken because of an appetite for perfective good inherent in God's creatures—be other than risible? If an affirmative answer is given then, from hindsight, is it possible to be maintain and justify optimism about Architect of Fortune Ethics?

Three justifications for optimism are offered. First, *Politique* Ethics may be interpreted in itself simply as a fortuitous public announcement about a kind of Ethics likely needed to accommodate the work that *politiques*, those likely new recipients of power in emerging and/or changing states, are likely to be faced with. While the King of New Atlantis “would join humanity and policy together” (F. Bacon, 1952a, p. 206) there is no hint of a *politique* in him even in his shadow, yet on occasions state policy is ethically a little flawed as evidenced first by Merchants of Light concealing their country's identity under the names of foreign nations, that is under foreign flags, when sailing on fact finding and technology collecting

missions (ibid., p. 214), now-called industrial espionage missions—even though products and information collected were to be paid for, or their owners rewarded (ibid., p. 207)—and second by a policy strategy of “Colour[ing] techniques used for managing land leave for Bensalem’s own vulgar mariners [so as they do not give away New Atlantis’ location] under the names of different nations” (ibid., p. 207, my square brackets). Are small departures from Philosophical Ethics to be excused even in the New Atlantis? Variation on such disguised registration and colouring themes has in the past, and also in this twenty-first century, extended to policy for detention centre location and/or torture of suspected nine-eleven terrorists. Ethics it appears is seldom a simple matter.

Secondly such a simple announcement, because it brings into open and public gaze a believable behaviour matrix for *politiques*—these public life operatives additionally likely to be trusted with stewardship and distribution of wealth and welfare fruits of a new Science—provides a focus upon which to design and or improve countervailing institutional-capital defences against their likely malfeasance, defences in the form of institutions, structures, statutes, processes, procedures and protocols to help contain excesses of *politique* behaviour and abuses of power. Thirdly, while it has been argued that Bacon’s *Politique* Ethics is an innovative departure from Philosophical or Theological Ethics, Bacon keeps his lower-than-dog *politiques* *Essay XIII: Of Goodness and Goodness of Nature* (F. Bacon, 1909-1914d, n. p.) on short leashes. Philosophical Ethics remains the benchmark, nowhere does *Politique* Ethics rise mankind morally above it, and always demeans the one employing it. Although Bacon cites Machiavellian opinion that they who keep to the good, when those around them keep to the bad, keeps on a path to their own destruction, his *politiques* may not follow Machiavelli all the way.

It may well be argued—on the basis that transition of power from monarch to parliament and capture of parliament by commercial business interests were in their early stages during Elizabeth 1’s lifetime, and even so after her death in 1603 during the remainder of Bacon’s lifetime—that the first and second reasons for optimism might be dismissed as an imposition of anachronistic and misplaced hindsight, there being insufficient institutional capital then in existence for containment purposes in

the manner suggested. However a contrary view is taken in this enquiry predicated on evidence, in Bacon's time, of a robust if rough institutional capital, for example statutes and laws, courts, legal procedures, and rules, and a plethora of political parties, merchant leagues, trade guilds and religious persuasions sufficient to engage with that capital in promotion of their own interests and containment of countervailing others. For example, Essex, Raleigh *qua* out-of-line merchant explorer, and Bacon *qua* bribe accepting judge and debtor in arrears, fell afoul of it, some might say even in rough ways. A battle between Elizabeth I and merchants, about favouritism in granting of monopoly right, occupied time in the House of Commons from 1571 to 1601 and is a good example, whether just or not, of public policy management of innovation and change in Bacon's centuries (Sacks, pp. 272 - 291). Coke's *Institutions of English Law* (Coke, 1853) now widely held as a foundation for common law, began publication in 1628. The subject matter on which this volume is predicated is not confined to the some two years separating its publication from Bacon's death. Rather it extends further back in time as the discussion on torture in the first section of this chapter reveals. Further, there was no shortage of street crowd anger on a range of issues. For example, *Henry V* (Shakespeare, 1952) performed in 1599 is, in one school of scholarship, interpreted as representing a growing questioning of authority during the 1590s (Herman, 2002, p. 206). In short, institutional capital, parliamentary debate and attendant vindictiveness is argued sufficiently developed to make the first and second claims for optimism plausible, even if marginally so and with some concession from credulity.

It might be argued in respect of the third reason for optimism, that in the face of religious intolerance, so-called death of God in the West and philosophy's unending struggle for acceptance and relevance, Bacon's tethered-philanthropy and attendant *Politique* Ethics might be the next best of a bad lot. It is not unreasonable to speculate that without some kind of such limping humanity present in say the Security Council of the United Nations, its necessary political machinations might not work and instead degenerate into such a debacle as to rob it of the remaining efficacy it possesses, there yet being no suggestion made in this claim that humanity

alone could bring success in such a place without the presence of hard and sometimes brutal political imperative.

It is a little disconcerting though to accept a possibility that in its rush to emulate so-

Some Criteria Used in Welfare Economics

Kaldor: Those gaining can compensate those loosing and still remain better off (W. Gorman, 1955, p. 25).
Kaldor-Scitovsky: A proposal increases welfare if it satisfies Kaldor's criterion but its later reversal does not (Broadway, 1974, pp. 926 - 939; W. Gorman, 1955, p. 25).
Pareto Optimum: Exists when it is not possible to make one person better off without making another worse off. (Sen, 1993, p. 521).
Kaldor-Hicks: Exists if those made better off could potentially compensate (sic) those made worse off. There need be no actual compensation made some remaining worse off by the change (Hicks, 1939, pp. 696 - 712).

called positive Science, arriving market economics paid relatively little attention to Bacon's reiteration that money wealth might be no measure of moral wealth and that, as market economics meandered its way into existence through that wealth of nations and its attendant moral sentiments (A. Smith, 1761, 1776/1952),

pleasure/pain calculus (Bentham, 1823) and Marshallian supply and demand allocations of benefits and losses between producer and consumer (Marshall, 1890/1895), to pool into so-called welfare economics (Feldman & Serrano, 2010; Hicks, 1939; Little, 1950; Mishan, 1969) with its dollar equivalent internalisation of human value, it did not carry with it much edification to Bacon's question about "private fortune ... as the instrument of virtue and doing good" (F. Bacon, 1898a, p. 319). Here in market economics theoretical economists reallocate money benefits between consumer and producer surplus with scarcely a mention of those excluded from the market because they cannot meet the price and/or find sustaining jobs to admit their participation in the market, while in welfare economics, welfare criteria are applied in search of so-called second best distributions of wealth, highly likely, since Arrow (1951; Arrow & Debreu, 2002), unattainable or recognisable in terms of applied economic theory itself.

Such questionable challenges to scarcity and wellbeing have, fortunately, generated alternative approaches in welfare theory and alternative criteria for practise of philanthropy, if not welfare economics *per se*.

In general, Bacon allows the contemplative life as an aid to private good but dismisses it, that "mere contemplation, ending in itself, and casting no rays of heat

and light on human society” *Novum Organum* (F. Bacon, 1900c, p. 214), in favour of

What Does GDP Really Measure?

“Even if we act to erase material poverty, there is another greater task, it is to confront the poverty of satisfaction—purpose and dignity—that afflicts us all.

Too much and for too long, we seemed to have surrendered personal excellence and community values in the mere accumulation of material things. Our Gross National Product, now, is over \$800 billion dollars a year, but that Gross National Product - if we judge the United States of America by that - that Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage.

It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. It counts napalm and counts nuclear warheads and armoured cars for the police to fight the riots in our cities. It counts Whitman's rifle and Speck's knife, and the television programs which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile.

And it can tell us everything about America except why we are proud that we are Americans.

If this is true here at home, so it is true elsewhere in world.”

Source: Excerpt from a speech made by Robert Kennedy at an election rally, University of Kansas, on March 18, 1968. (R. Kennedy, 1968)

the practical life in matters of communal good. While, as earlier discussed, God is still in Bacon's *Politique*-Ethics machine He is but one referent, Bacon being only slightly prior to Hobbes' declaration that to be ethical is to obey the law, which law may well contain new statutes to countervail excessive *politique* behaviour, those new statutes themselves being an emerging form of the institutional capital mentioned in the pitch for optimism contained in the preceding paragraphs of this enquiry. Some of Bacon's down-to-earth-advice on ethical behaviour begs anew that question on how humans might transform moral thought into moral action and, after all, such renewed begging of the question is an important outcome in itself, and hardly a basis on which to dismiss Bacon's contribution.

Conclusion to Bacon's Ethics

In summary, on the face of his writings Bacon's Ethical method at first appears conventional and, subject to human rationality and the precepts of

morality being God-given, it consists of logically directing the will to make correct selections between comparative duties. Ethics inheres in an appetite for good, native to the human mind and all existing things, and in this domain it expresses itself through the logical or truthful search for the good understood as the welfare of the individual or society. Ethics' constraints are conventional. They consist of frustration of the natural movement from lower nature to higher nature by such human conditions as ambition.

Yet Bacon's *Politique* Ethics is a departure from the general condition because what passes for ethical behaviour is in part predicated on a range of referents and as

previously discussed, is questionable when measured against his Philosophical Ethics alone. The practicality of this kind of Ethics, together with Bacon's advocacy of good-in-common above self-good in comparative good settings, including duty to govern others by governing oneself well towards others, again in comparative good settings, exhausts the esoteric/exoteric distinction employed in this enquiry.

Bacon's *Polis*.

Differing constructions of ideal *Polis* are germane to the period under discussion: *City of the Sun* (Campanella, 1902), *New Atlantis* (F. Bacon, 1902b), *Oceana* (Harrington, 1902), *The Prince* (Machiavelli, 1968), and *Utopia* (More, 1901). Those of Bacon (AD 1561 – 1626) and Tommaso Campanella (AD 1568 – 1639) provide illuminating insights into the changing nature of the relationship between Science and *Polis* and Ethics and *Polis* and it is clear that Bacon acknowledges some of Machiavelli's ideas. I discuss only Bacon's *New Atlantis* (F. Bacon, 1909a) in this enquiry.

New Atlantis (F. Bacon, 1909a), which Speeding thinks may have been written circa 1624/25, was published posthumously in 1627 by Bacon's chaplain William Rawley (AD 1588 – 1667) as a stand-alone piece in a volume containing *Sylva Sylvarum* (F. Bacon, 1670) in the place Bacon intended for it, the one, *New Atlantis* (F. Bacon, 1909a), symbolising the end of the work of the other that he, Bacon, was beginning, namely the *Sylva Sylvarum*, symbolising his Natural History (Speeding, n. d, p. 349). Speeding claims that Bacon's unrealised intention was to have the *New Atlantis* (F. Bacon, 1909a) contain a "model political constitution, as well as a model college of natural philosophy" (ibid., p. 350).

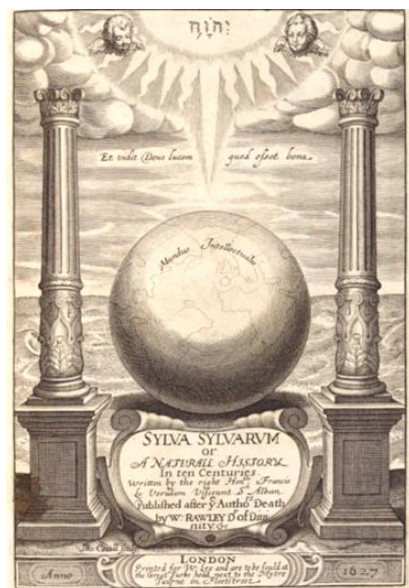
Even in its existing form *New Atlantis* may be interpreted as a symbol of Bacon's scientific method and heritage of wealth and prosperity his machine of Science might bring. A recent contribution by Colclough (2010) supplies convincing details of Speeding's claim and debunks views offered by Ellis (1857, pp. 325 - 329) urging *Sylva Sylvarum* (F. Bacon, 1670) to be primarily a literary collection of information extracted from such notables—Ellis does not name all of them—as Aristotle (BC 384 – 322), pseudo-Aristotle and Pliny (AD 23 – 79) and near contemporaries or contemporaries of Bacon, for example Scaliger (AD 1540 – 1609), Ficino (AD 1433

– 1499), Telesio (AD 1509 – 1588), Galileo AD 1554 - 1642, della Porta (AD 1535 – 1615), Sandys (AD 1577 – 1644) and Cardano AD 1501 - 1576). Colclough admits such sources but demonstrates that *Sylva Sylvarum* (F. Bacon, 1670) contains Bacon’s own trials of some of the collected experiments it contains, and his reflections about causes of phenomena under experimentation (Colclough, 2010, p. 182).

Colclough (ibid., pp. 184 – 191) also argues against a view by Langman (2006, p. 3) that “publication of *New Atlantis* alongside *Sylva Sylvarum* in 1626/27 was more the result of William Rawley’s need to assert his own authority as the protector and disseminator of Bacon’s textual legacy than an appreciation of the work’s own qualities” (2006, p. 3). Publication of *Sylva Sylvarum* and *New Atlantis* side by side is not, says Colclough, evidence of a rush into print by Rawley. Colclough also counter’s Langman’s argument that *Sylva* is common to only (sic) 23% of *New Atlantis* (Langman, 2006, p. 69) by identifying additional sources (Pliny, 1601/1634; G. Sandys, 1621) common to both works. Langman’s thesis has since been published (Langman, 2007). Rees dispels accusations that Bacon collected so-called experiments from others without acknowledgement and locates Bacon’s attributions in the *Sylva* to other writers as well, not previously named in this paragraph (G. Rees, 1981, pp. 389 - 390). Rees also convincingly argues that the *Sylva* is more than a simple collection or collage of plagiarised material (ibid., pp. 377, 388- 393).

The complementary relationship of *Sylva Sylvarum* (F. Bacon, 1670) and *New Atlantis* (F. Bacon, 1909a) might also be evidenced through the pre-eminent act of the kings of Bensalem, the island of the *New Atlantis* (F. Bacon, 1909a), in their storied erection of Salomon’s House “an order, or society ... [which is] the noblest foundation, as we think, that ever was upon the earth, and the lantern of this kingdom. It is dedicated to the study of the works and creatures of God” *New Atlantis* (F. Bacon, 1952a, p. 206, my square brackets) and is the “eye” of the whole society (ibid., p. 206). “The end of our foundation is the knowledge of causes, and secret motions of things; and the enlarging of the bounds of human empire, to the effecting of all things possible” (ibid., p. 210). On pages 210 to 214 of that same edition Bacon discusses the “preparations and instruments we have for our works ...

the several employments and functions whereto our fellows are assigned and ... the



Sources: The top panel is a reproduction of an engraved title page from *Novum Organum* cropped by Ian Eddington from an image available from the Image Delivery Service of Harvard University Library (Anonymous, 1648). The bottom panel is an image of an engraved title page of *Sylva Sylvarum* cropped by Ian Eddington from Bacon, F. (1670). *Sylva Sylvarum: A Natural History in Ten Centuries*. London: J. R. for William Lee. (F. Bacon, 1670).

the purpose of *The Great Instauration* through an imagery of voyage and discovery shared by the three (ibid., p. 189).

ordinances and rites which we observe” (F. Bacon, 1952a, p. 210). On the face of these pages, Bacon makes Science the legitimate experimentation of a likely Christian society, which trades in the light of God’s given reason. These pages contain mention of sounds that travel along pipes and wires, ships that go under the water, and machines that fly. The work of Salomon’s House extends to “diverse other things” (F. Bacon, 1952a, p. 214), likely those new foodstuffs and clothing materials, rapid germination in agriculture, new industrial material products, cure of disease, creation of new and beneficial species and others of the kind mentioned in *Magnalia Naturae* (F. Bacon, 1733, pp. 29 - 30), and presumably as well, to enquiring after “new instruments of destruction in the way of war, poison, &c” (ibid., p. 30). Bacon’s namesake Roger Bacon had, as discussed on page 446 of this enquiry, mentioned wonders similar to some of these.

Colclough (2010, p. 182) makes a claim that “virtually every experiment described in *New Atlantis* has its equivalent in *Sylva*” (ibid., p. 187). In addition to citing Rawley’s report that Bacon himself desired the English editions of *Sylva Sylvarum* and *New Atlantis* to be published together (ibid., p. 187), Colclough detects shared symbolism and iconography linking *New Atlantis* and *Novum Organum* to each other and jointly to

For example, the title page of *Sylva Sylvarum* substitutes more elaborate Corinthian columns for the Doric columns framing the ships of new knowledge returning through those Pillars of Hercules *qua* existing limits to knowledge depicted on the title page of *Novum Organum*. Between the Corinthian pillars of the *New Atlantis* a global intellectual world, a *Mundus Intellectualis*, replaces the ships and it is illuminated by the certified light of YAWH—the Latin inscription above the globe is *Genesis* 1:4. “And God saw the light, and it was good” (Holy Bible, 1932)—under respectively focussed gazes of guardian cherubim which link mankind’s intellectual world to God’s illuminating glory. One cherub looks down upon the intellectual world, the other across to the Tetragrammaton. The cherubim, says Colclough, reappear in *New Atlantis* where light is the principal item traded (*ibid.*, p 190). They are, *inter alia*, depicted there as gold statues on the chariot of the father of Salomon’s House and signify the accompanying presence of God’s light to the very centre of Bensalem. In his study of philosophy and image patterns Vickers (1968, pp. 174 - 175, 174 - 201) states that voyage of discovery imagery is seldom used but to communicate extension of knowledge ideas, other words such as roads, open country and the like reinforcing associations of travel and discovery.

Voyaging and acquisition is central to Bacon’s own *Description of the Intellectual Globe* (F. Bacon, 1882c, p. 403) on the first page of which he calls human understanding the vessel in which the faculties of the mind—memory, imagination and reason—sail the waters of philosophy and theology (*ibid.*, p. 403).

It is not difficult to associate Salomon’s House with heralding of the Royal Society and scholars continue to link Bacon with the name and/or founding of that society (Bruce, 2008, p. xxxi; Ewalt, 2008, p. 108; Fowler, 1881, p. 37; Glanvill, 1676; Gribbin, 2007, p. 51; Hunter & Wood, 1986; Langman, 2006, p. 13; Vickers, 2007, pp. 5 - 6; 2008, p. 788; Webster, 1975, p. 315). A rich literature, not discussed further in this enquiry, raises a plethora of questions about such matters as secular-religious divide in the imagery and symbolism of *New Atlantis*, Bacon as the cause of God-deprived materialism, Bacon *qua* positive scientist, Bacon *qua* founder of modern social biology, origins of Baconian scientific ideas in law, and Rosicrucian imagery in *New Atlantis*, (Boesky, 1996; L. J. Cohen, 1977; Farrington, 1979;

Hacking, 1983; Keynes, 1921; Skolimowski, 1983; Weinberger, 2002; Wheeler, 1983; White, 1968; Whitney, 1990; Yates, 2001).

Bacon's *Polis* is a peaceful, prosperous and Godly society in which Science, through the power over nature its knowledge brings, is wisely applied for the betterment of mankind.

The method of Bacon's *Polis* is the dutiful, wise and good application of Science's power over nature for betterment of mankind. Its sphere of operations is Science's power over nature and the stability it may bring to the state and empire of mankind. Its constraints are failure of the will under logic's council as to the correct choice between comparable duties.

Yet depiction of Bensalem as an esoteric *Polis* is compromised and difficult to maintain within the methodology constructed for the purposes of this enquiry and Bensalem might be signalled a P(p)olis. The twinning of *New Atlantis* with *Sylva Sylvarum* and its Natural History basis on which Second or Active Philosophy was to be built, Spedding's report of Bacon's likely intention to have colonized his *New Atlantis* with blueprints of a model constitution and college of practical science, Salomon's House as a study centre of the works of nature and the enlargement of mankind's material estate, Bensalem's citizenry of workers, traders, and scientists engaged in practical experimentation of a kind outlined in *Sylva Sylvarum*, and Bacon's voyage and discovery imagery of reformed Science's acquisition of new age knowledge and technique, when taken together, render *New Atlantis* at esoteric-status odds with Plato's heavenly city of ideas and heavenly template forms, or Aristotle's entelechies and/or natural state prior to mankind, or Augustine's and Aquinas' cities of God. This rendering blurs the esoteric/exoteric divide and strains the thesis methodology, providing another indication of a challenge to the longevity of Aristotelian science and political philosophy.

CONCLUSION TO CHAPTER 8

The literature on Bacon is vast and during his lifetime and afterwards commentators have offered a variety of opinions about his character, and about the status of his contribution to Science and human welfare. I have found it difficult to discern a so-

called real Bacon. Just as a number of consistent connected facts emerge as might assist depiction of Bacon as one kind of person or another, countervailing opposites and/or contradictions emerge. Bacon the man appears enigmatic, Bacon *qua* man of Science is alternatively praised or vilified, Bacon as innovator and change agent, although sometimes a subject of insulting debate, is difficult to deny.

Bacon pronounces his new method of Science suitable for all philosophy and he situates it in a real world where it may maximise power over nature subject to his named constraints of right reason and true religion. Its method or new engine consists first of cleansing the mind of its idols and then Induction of axioms and laws through application of tables of exclusion and helps to the understanding in experimental Science, and application of those axioms and laws in Induction of further discovery. Its sphere of operations is sense knowledge engendered by memory, imagination and reason predicated on experience—sensual experimental knowledge about Forms or Laws of Nature residing in their own power over nature and operable through superinduction for the benefit of mankind. Its constraints are the idols of mind of mankind, the secrecy of nature's laws, and the complexity of scientific method. Bacon's new Science exhausts the esoteric/exoteric divide employed in the methodology of this enquiry because Induction and/or deduction, including its attendant inference is an applied or operational Science requiring experimentation and practical inventiveness and application.

Ethics for Bacon is, *inter alia*, a preparation for politics and as Philosophical Ethics it answers to theology although, in Architect of Fortune Ethics, as distinguished from Philosophical or Theological Ethics, Bacon seasons its answering with a little *philanthropia* and other ingredients. Philosophical Ethics' method is a making of choice between comparative good alternatives in both self-good and good-in-communion domains, both present and future. Its sphere of operations is an appetite for good, native to the human mind and all existing things, and in humans its twin logical or truthful penchant for welfare of individual or society, inhering at self-good level in mind well-formed and composed in itself and at good-in communion level in

Table 56: Key Terms Nuance—Francis Bacon (AD 1561 – 1626)

Descriptor	Esoteric Dimensions of Science, Ethics and Polis at Dawn of the Modern Era—Bacon			
	Method	Sphere of Operations	Constraints	Era
Science	Induction of axioms and laws through first cleansing mind of its idols and then application of Bacon’s method of tables of exclusions and helps to the understanding in experimental Science, and the application of those axioms and laws in deduction of further discovery.	Sensual experimental and experiential knowledge about the forms or Laws of Nature residing in their own power over nature and competent operation of that knowledge in superinduction of welfare benefits for mankind.	Idols of the mind, complexity of nature, and complexity of scientific method.	Circa AD 1561 to 1626
Ethics	Active logical management of the will in correct choice between comparative good alternatives in both self-good and good-in-communion domains in the interest of the welfare of the individual and society. It consists of internal goodness at the individual level and duty towards others societal level in present and future situations.	Ethics inheres in an appetite for good native to all existing things including the human mind qua its truthful penchant for welfare of individual or society, inhering at self-good level in mind well-formed and composed in itself and at good-in-communion level in mind well-formed towards others. It manifests in an attendant duty to govern others by governing oneself well towards others. Human rationality and the precepts of morality which marshal it are God given.	Frustration of the natural movement from lower nature to higher nature by such human conditions as ambition, self-love and greed.	
Polis	A cognitive gathering in a New Atlantis predicated on Godliness, peace and prosperity through application of Science for the betterment of mankind.	Power over nature which Science brings and stability and advancement it may bring to human society.	The failure of the will under logic’s counsel as to the correct choice between comparable duties.	

Table 57: Progressive Articulation of Thesis Proposition Statements—Francis Bacon (AD 1561 – 1626)

PART THREE OF THE ENQUIRY			
#	Thesis Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 7 Re-emergence of Experimental Science	Not applicable
		Chapter 8 Francis Bacon (AD 1651 – 1626) and Dawning of A Modern Age	There is no nuance of the term Modern Age. The <i>Polis</i> is the peaceful, Godly and prosperous New Atlantis in which scientific knowledge is power over the Laws of Nature. Reason and the precepts of morality are divine. A focus on the right use of knowledge as power replaces a focus on the kind of knowledge of which virtue may consist.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 7	Experimental Science returns and the age of reason begins. Science understood as syllogistic demonstration is becoming replaced by Science as induction and deduction within the rules for reasoning in philosophy.
		Chapter 8 Francis Bacon (AD 1651 – 1626) and Dawning of A Modern Age	Science is knowledge of the Forms or Laws of Nature derived from Bacon’s new kind of Induction applied through his new machine of method, his novum organum. Ethics is the doctrine of the will in search of the good understood as the welfare of the individual or society. It consists of making the correct choice between self-good alternatives and good-in-communion alternatives in their respective comparative good settings. It inheres in mind well-ordered and composed in itself and mind well disposed towards others, and it answers to theology Metaphysic replaces Metaphysics. Metaphysic is inquisition of formal cause in operative Science and partly informs superinduction of welfare benefits for mankind. Practical Ethics is will working towards good of individual and society. At the individual level it is internal goodness and at the societal level it is politics or external goodness.
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 7	Not applicable
		Chapter 8 Francis Bacon (AD 1651 – 1626) and Dawning of A Modern Age	There is no nuance in the term Modern Age Ethics is the doctrine of the will in search of the good understood as the welfare of the individual or society. It consists of making the correct choice between self-good alternatives and good-in-communion alternatives in their respective comparative good settings. It inheres in mind well-ordered and composed in itself and mind well disposed towards others, and it answers to theology.
<u>Integrating Summary of Part Three</u>			
A fledgling experimental Science found in Magnus (AD 1193 – 1280) had, by the time of Isaac Newton (AD 1643 - 1727), developed the basis of the method of Science practised in our times: observe, hypothesise, falsify or verify by testing, and tentatively accept verifications as theory. This long march of the development of experimental Science method occurred within a system of faith Ethics and in its own way, was part of the social, political, and cultural changes and discovery of the times: the renaissance and humanism, the reformation and counter reformation, the discovery of printing, the European discovery of the Americas, and the emergence of nation states. Towards the end of this period Francis Bacon (AD 1561 – 1626)—and also Thomas Hobbes (AD 1588 – 1679) as Chapter 9 will reveal—addressed Science in a political philosophy so different as to constitute a clear change from Aristotelian political philosophy as it had become known in its Western Christian dress. Under Bacon, <i>Polis</i> as an eternal city of God is challenged by <i>Polis</i> as a <i>New Atlantis</i> , Science becomes a practical, experimental, operative activity in pursuit of advancement of learning and human welfare, a pursuit free from Aristotelian metaphysics and final cause, yet subject to Ethical constraints predicated on theology, and Ethics becomes active logical management of human will in correct choice between comparative good alternatives in both self-good and good-in-communion domains in the interest of welfare of individual and society. It consists of internal goodness at the individual level and duty towards others at a societal level in present and future situations. Yet even in Bacon’s works an Ethics for <i>politiques</i> can be differentiated from that construct of Ethics provided on the previous sentence.			

mind well-formed towards others. It manifests in an attendant duty to govern others by governing oneself well towards others. Ethics' constraints are conventional. They consist of frustration of the natural movement from lower nature to higher nature by such human conditions as greed, envy and the like. Bacon's preference for active man-in-communion Ethics over passive self-good Ethics, his insistence on a comparative good setting for ethical choice and his step towards an Architect of Fortune Ethics for practising *politiques* exhaust the esoteric/exoteric divide methodology of this enquiry.

Again, Bacon's *Polis* is a peaceful, prosperous and Godly society in which Science, through the power over nature its knowledge brings, is wisely applied for the betterment of mankind. The method of Bacon's Godly and peaceful *Polis* is its institutionalisation of Science and dutiful, wise and good husbandry of it. Its sphere of operations is power over nature its scientific acumen occasions and partaking of welfare benefits resulting from an Ethical use of that power. Its constraints, if any, are failures of will to implement correct duties made under logic's counsel. I cannot detect Bacon's finding the relative isolation of his *New Atlantis* neither contradictory of its human welfare ideals, nor hindering to its progress and trade in light. Bacon's *New Atlantis* deals in experiment and trade of ideas and actively embraces utilitarian welfare, and these exoteric dimensions and others earlier mentioned, substantially challenge its esoteric *Polis* standing sufficiently to compromise enquiry esoteric/exoteric divide methodology.

Each of Bacon's Science, Ethics and *Polis* compromises the enquiry's esoteric/exoteric methodology and within the framework in which the enquiry is structured this compromise is taken as a marker of a dawning new era.

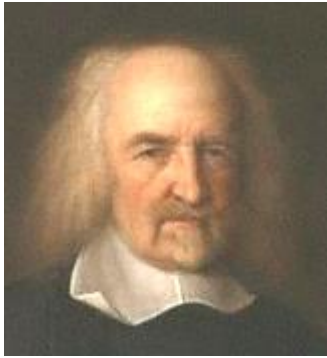
Table 56 on page 565 summarises nuance Bacon brings to the key terms of the enquiry and Table 57 on page 566 carries that terms nuance to cumulative articulation of Thesis Proposition Statements. It was left to Hobbes to separate Ethics from religion. Hobbes was Bacon's employee for a short time and the next chapter discusses Hobbes' contribution.

Chapter 9

Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age

INTRODUCTION

Hobbes, who “even in his youth, ... [being] temperate, both to wine and women” (Aubrey, 1898, p. 350, my square brackets), was no “woman-hater, neither had he an abhorrence to good wine” (ibid.). He possessed a ‘harmonical soul’ (ibid., p. 350) and “a curious sharp wit which was also sure and steady” (ibid., p. 349). It appears that, in spite of these attractive attributes, his birth and life during the period of the English Civil War and Thirty Years Wars (Hobbes, 1680, p. 2) may have led him to a somewhat confronting understanding of the nature of mankind. His stated view is that mankind is first and foremost egoistic and selfish (Hobbes, 1840, pp. 44, 45, 48 – 50, 261) and yet on this basis he attempts to construct a “highway to peace” (Hobbes, 1841, p. xiv), his sanguine understanding appearing partly to inform a unified system of philosophy he develops.



Source: Cropped by Ian Eddington from Wright, J. M. (1669/70). (artist). *Thomas Hobbes*. (oil on canvas). London: National Portrait Gallery. (J. M. Wright, circa 1669-70).

Hobbes’ own life was not always peaceful, and the impact of his work was widespread in his own time. For example, in *Behemoth* (1889a) Hobbes attributes the cause of the civil war to ideological differences between religion and politics and implicates a variety of sects in his claims—Presbyterians (ibid., pp. 4, 20 – 23, 28, 30, 56, 61, 79 – 82, 166 – 175) and “Brownists, Independents, Anabaptists, Fifth-monarchy-men, Quakers, and diverse others, all commonly called by the name of fanatics” (ibid., p. 136). In his *A Dialogue between a Philosopher and a Student of the Common Laws of England* (Hobbes, 1750) he attributes experienced civil strife to lawyers (ibid., 605 – 606 within 591 – 651) and is respectful but not necessarily uncritical of Sir Thomas Coke (ibid., pp.590, 594, 597, 59, 600, 605, 608 609). In some circles Hobbism became a pejorative word. Before parliament banned printing of *Leviathan* in 1666 new copies were selling for eight shillings but by 1868 second hand copies were selling for twenty-four shillings and new for thirty shillings (Pepys, 1893/2015, n. p., entry for 3 September, 1668). Hobbes was from time to time

rejected at court and was estranged and then reconciled with Charles II whom he had tutored. On more than one occasion he felt obliged, in fear of his life, to quit the country of his residency whether it was England or France.

Commentary on Hobbes' work is copious. For example there is scholarly interest in such topics as his professional relationships with Gassendi (AD 1592 - 1665), Mersenne (AD 1588 - 1648) and Galileo (AD 1564 – 1642), banning publication of his works, favour and disfavour at court, his travels and life in France, his claimed obsession with war, unity of moral and scientific wisdom in his works, his use of poetic mimesis, Hobbes as monist, materialist, mechanist, Pyrrhonist, royalist, Cromwellian, Hobbes versus Bramhall (AD 1594 – 1663) on liberty and necessity, Hobbesian man *qua* persona, will and agency and intelligent substance, education in Hobbes' political philosophy, civil association in Hobbes' political philosophy and such a list could run for pages. (Bejan, 2010; V. Chappell, 1990; J. R. Collins, 2005; J. Hamilton, 2012; G. B. Herbert, 1989; Machamer, 2012; Oakeshott, 1975a; Reagan, 2012; Simendic, 2012; Steinberg, 1988).

Hobbes' own writing, like the literature about him, addresses a range of subjects. In this chapter I engage mainly with a limited number of Hobbes' works sufficient for derivation of understandings of his Science, Ethics and *Polis* (Hobbes, 1750, 1839a, 1839b, 1840, 1841, 1889a, 1889b, 1913), and his contribution to breaking the link *Elements of Philosophy: The First Part Concerning Body* (Hobbes, 1839a, p. 10) compare between Science and theology.

Hobbes announces in *De Cive* (Hobbes, 1841) that his unified system consists of three parts.

... in the first I would have treated of a *body*, and its generall properties; in the second of *man* and his speciall faculties, and affections; in the third, of *civill government* and the duties of Subjects: therefore the first Section would have contained the *first philosophie*, and certaine elements of physick; in it we would have considered the reasons of *Time, Place, Cause, Power, Relation, Proportion, Quantity, Figure, and motion*. In the second we would have beene conversant about *imagination, memory, intellect, ratiocination, appetite, will, good and Evill, honest and dishonest*, and the like. What this last Section handles, I have now already shewed you [that is the sections of *De Cive* called *On Liberty* and *On Dominion* which constitute a basis for *Leviathan*. (Hobbes, 1841, pp. xix - xx, Hobbes' italics, my square brackets)

These three components constitute Hobbes' Science, Ethics and *Polis*. I discuss each of them beginning, in the next paragraph, with Science, where I focus on so-called first philosophy in general and Science or physics in particular.

HOBBS' SCIENCE, ETHICS AND *POLIS*
Hobbes' Science

Hobbes' first philosophy is concerned with establishment of definitions of those Galilean-type primary qualities such as quantity and figure, and with method (Hobbes, 1839a, pp. 65 – 90). Philosophy as physics or Science focuses on motion in bodies (ibid., pp. 69 - 73).

Science informs all three parts of Hobbes' unified system and this condition flows logically from his fundamental dictum that:

... the Universe, that is, the whole masse of all things that are) is Corporeall, that is to say, Body; and hath the dimensions of Magnitude, namely, Length, Breadth, and Depth: also every part of Body, is likewise Body, and hath the like dimensions; and consequently every part of the Universe, is Body, and that which is not Body, is no part of the Universe: And because the Universe is All, that which is no part of it, is Nothing; and consequently nowhere. (Hobbes, 1651, p. 497)

The first of the two quotations above reveals Hobbes interest in Galilean primary qualities and mathematical measurement of nature's laws. In both of these quotations Aristotle's primary category, substance, lingers on through Galileo into Hobbes. There are but two types of bodies:

For two chief kinds of bodies, and very different from one another, offer themselves to such as search after their generation and properties; one whereof being the work of nature, is called a *natural body*, the other is called a *commonwealth* and is made by the wills and agreement of men. (Hobbes, 1913, p. 14)

In today's world of Body Corporate entities in real estate, and Limited Liability Companies as persons in law, we may think little of Hobbes' calling *Leviathan*, his Commonwealth, a body. But to Hobbes it is a body by virtue of movement, a condition discussed further on pages 572 and 573 of this enquiry. From the two divisions of body outlined in the previous quotation:

... spring the two parts of philosophy, called *natural* and *civil*. But seeing that, for the knowledge of the properties of a commonwealth, it is necessary first to know the dispositions, affections, and manners of men, civil philosophy is again commonly

divided into two parts, whereof one, which treats of men's dispositions and manners, is called Ethics; and the other, which takes cognizance of their civil duties, is called *politics* or simply *civil philosophy*. (Hobbes, 1839a, p. 11)

The quotation above clearly differentiates natural philosophy, Ethics and politics, each from the other. Hobbes calls Science “knowledge of consequences which is also called PHILOSOPHY” (Hobbes, 1904, p. 53, Hobbes' capitalisation). His classification of scientific knowledge, that is his classification of the Sciences, flows from this usage and understanding, and from his earlier discussed maxim that the entire universe is body and that there are but two kinds of body. His differentiation of natural philosophy or the “Consequences from the Accidents of Bodies Natural” (ibid., p. 53) from civil philosophy, or the “Consequences from the accidents of *Politique* Bodies” (ibid., p. 53), today's political Science, is clearly illustrated in tabular form in *Leviathan* (Hobbes, 1952, p. 72). His table provides another informative nomenclature allowing insight in to the nature of Science at the dawn of the Modern Age.

More generally, Science is defined as a domain of philosophy:

which treats of every body of which we can conceive any generation, and which we may, by consideration thereof, compare with other bodies, or which is capable of composition or resolution, that is to say, every body of whose generation and properties we can have any knowledge . (Hobbes, 1839a, p. 10)

Hobbes' method of resolution and composition (Hobbes, 1839a, p. 66) is not controversial it being consistent with emergence of various new methods to replace scholasticism's appeal to authority in matters of Science. Resolution, the analytical dimension, is a breaking down of a being into its constituent parts, for example the natural object signified by the word man may be resolved into rational, animated or moving and body, (Hobbes, 1839a, p. 24). Composition, the synthetical dimension, consists of assembly of component parts into a whole. Analysis proceeds forwards synthesis backwards (ibid., p. 310) and method is the shortest way of finding out causes by their known effects and vice versa (ibid., p. 66). Hobbes distinguishes his use of method in geometry from his use of it in physics which is the investigation of sense phenomena in the real world (ibid., p. 397 – 389). Whereas in geometry premises are known or accepted as true, such is not the case in physics where premises about its objects, those individual appearances or phenomena of nature *qua*

works of the author of nature, are less certain. Hobbes claims of physics that it may reveal the ways and means of generation or cause of the effects or appearances of nature, not that it will reveal them (ibid., p. 388).

Neither is his generation *qua* movement controversial. It echoes back to Aristotle. Hobbes' method of Science is served by syllogistic demonstration of truth beginning with premises and ending in established fact. Science:

begins with the Definitions of Words, and proceeds by Connexion of the same into generall Affirmations, and of these again into Syllogismes; the End or last summe is called the Conclusion; and the thought of the mind by it signified, is that conditionall Knowledge, or Knowledge of the consequence of words, which is commonly called SCIENCE. But if the first ground or such Discourse, be not Definitions; or if the Definitions be not rightly joyned together into Syllogismes, then the End or Conclusion, is again Opinion. (Hobbes, 1929, p. 50, Hobbes' capitalisation)

Like Francis Bacon, and like Aristotle for that matter, Hobbes questions mankind's ability to agree on initial premises. He also allows that premises are conditioned by culture and experience (Hobbes, 1904, p. 109). He argues that such conditioning may be so diverse that resolution of differences might not be possible by mutual agreement or by force of authority. Hobbes' discussion of natural phenomena, for example, lightning and thunder, gravity, light, heat and colour, the world and the stars can be found in Part 4 of his *Elements of Philosophy* (Hobbes, 1839a, pp. 387 - 508).

For Hobbes, "where there is no generation or property there is no philosophy" (Hobbes, 1839a, p. 10). On this basis, Hobbes expels theology (ibid., p. 10), understood as the doctrine of God, from Science, because, of God, there is no property or generation, nothing to add or subtract. He also excludes the doctrine of angels (ibid., p. 10) because there is no place for ratiocination, by which he means computation or the capacity to add or subtract something. The addition and subtraction of ratiocination should not be thought of only as simple arithmetic, which it includes. Ratiocination applies to "all the kinds in which philosophy consists" (ibid., p. 5) which are "magnitude, body, motion, time, degrees of quality, action, conception, proportion, speed and names" (ibid., p. 5). Hobbes also excludes revelation, divine inspiration, astrology, and the doctrine of God's worship from Science because they are unattainable by reason. History, both natural and political,

although necessary to philosophy, is also excluded because such knowledge is but experience or authority, but not ratiocination” (ibid., pp. 10 – 11).

Although Hobbes’ method is somewhat cumbersome, he was not ignorant of extant developments in Science. He spent many years with the scientific elite in France. He visited Italy in his forty-sixth year to meet Galileo in his seventieth year, and learned more about his, Galileo’s, wider works and experimentation. He was Bacon’s secretary for a short time and, according to Aubrey (1898, p, 395), borrowed Induction from Bacon. He seems to see everywhere the motion of a clockwork universe and to apply the idea of motion to psychology, physics, political economy and Ethics, which is clearly revealed in his *Leviathan* (Hobbes, 1952) and *De Cive* (Hobbes, 2010).

In summary, Science for Hobbes is ratiocination about qualities of body, reason understood as computation *qua* addition and subtraction, being its intellectual attendant. Its method is ratiocination in resolution and composition operational through syllogistic demonstration of fact. Its sphere of operations is knowledge of accidents and laws of bodies natural or political and the power brought by such understanding for construction of a peaceful and prosperous artificial state. Its constraints are nature’s complexity, problems of definition and deficiencies in syllogistic demonstration.

POLIS

Hobbes’ Civil Philosophy: Leviathan

The Aristotelian thread found in generation as movement ties natural body and its Science *physick* to human body and its Science Ethics. In turn, it ties human body and Ethics to artificial body and its Science of politics. For example, bodies are entities that can be moved, and movement is interpreted widely. The movements found in mankind carry various names: will, emotion, imagination, and trains of thought are some examples. Natural bodies can possess movement from place to place, for example in waterfalls or landslides, but also through change in form from say water to ice or mist. Natural bodies, both lifeless and living, are moved according to the natural laws that govern them. Control of interactions between bodies should not be predicated on other than scientific understanding of those natural laws. It

follows says Hobbes that a Commonwealth or state as an artificial body which results as a consequence of control of inanimate and animate natural bodies—including human nature as a property of body—should be founded on his-called correct understandings of natural laws that account for those movements in those bodies.

In what sense then is this Commonwealth or Leviathan an artificial body?

Hobbes' Leviathan is that political body which emerges as a consequence of the scientific management of the natural laws that correctly account for mankind's behaviour.

NATURE, (the Art whereby God hath made and governes the World,) is by the *art* of man, as in many other things, so in this also imitated, that it can make an Artificial Animal. For seeing life is but a motion of Limbs, the beginning whereof is in some principall part within; why may we not say, that all *automata* (engines that move themselves by springs and wheelles as doth a watch) have an artificiall life? For what is the *heart*, but a *spring*; and the *nerves*, but so many *strings*; and the *joints*, but so many *wheelles*, giving motion to the whole body, such as was intended by the Artificer? *Art* goes yet further, imitating that rational and most excellent work of Nature, *Man*. For by art is created that great LEVIATHAN called a COMMON-WEALTH, or STATE, in Latin CIVITAS, which is but an artificial Man; though of greater stature and strength than the natural, for whose protection and defence it was intended (Hobbes, 1839b, p. ix, Hobbes' italics)

It is interesting given Harvey's 1628 publication (Harvey, 1889, p. 140) on circulation of the blood that Hobbes in 1651 names the heart a spring rather than a pump. Nevertheless beyond its existence as an artificial state, an artificial gathering or Polis, the Leviathan becomes simply that:

... to which wee owe our peace and defence. For by this Authoritie, given him [the Sovereigne] by every particular man in the Common-Wealth, he hath the use of so much Power and Strength [88] conferred on him, that by terror thereof, he is inabled to forme the wills of them all, to Peace at home, and mutuall ayd against their enemies abroad. And in him consisteth the Essence of the Common-wealth; which (to define it,) is *One Person, Of whose Acts a great Multitude, by mutuall Covenants one with another, have made themselves every one the Author, to the end he may use the strength and means of them all, as he shall think expedient, for their Peace and Common Defence.* (Hobbes, 1904, p. 119, numbers in square brackets refer to page numbers in Hobbes' 1861 folio edition, Hobbes' italics.)

Leviathan as *Polis*, coming as it did some nineteen centuries after Aristotle, is quite some turnaround. Mankind cognitively gathers in an artificial state and not the prior natural state suggested by Aristotle. Mankind is no longer a political animal in the

Aristotelian sense, one who colonises a natural state prior to man. Rather, mankind develops an artificial state, which it then colonises. Hobbes' artificial Commonwealth leads to questions of what then, in Hobbes's view, is the natural state of mankind which occasions the need for an artificial state, and on what natural laws of mankind might the artificial state be predicated.

The natural state of mankind is a bleak one, says Hobbes. First, no predisposition to cognitively gather is implanted in mankind.

There is no other act of man's mind, that I can remember, naturally planted in him, so as to need no other thing, to the exercise of it, but to be born a man, and live with the use of his five senses. (Hobbes, 1839b, p. 16).

To so exist, that is, to live by one's five senses and by the train of thoughts they occasion is to live in a state of motion. This motion is driven by the felicity enjoyed

Movement Remains Crucial
[Mind] maps are constructed when we interact with objects, such as a person, a machine, a place, from the outside of the brain toward its interior. I cannot emphasize the word interaction enough. It reminds us that making maps, which is essential for improving actions as noted above, often occurs in a setting of action to begin with. Action and maps, movements and mind, are part of an unending cycle, an idea suggestively captured by Rodolfo Llinás when he attributes the birth of the mind to the brain's control of organized movement. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain* (pp. 63 - 64). Random House. Kindle Edition. (Damasio, 2010, pp. 63 - 64)

through gratification of desire (Hobbes, 1904, pp. 37 - 38). This felicity relates to the here and now. "What kind of Felicity God hath ordained to them that devoutly honour him, a man shall no sooner know, than enjoy" (ibid., p. 38) such joy being now "as incomprehensible, as the word of Schoolemen Beatificall Vision is unintelligible" (ibid. p. 38). The desire within is a response to the

things without and in Hobbes' weaving of this Aristotelian thread might be found meanderings of modern stimulus-response psychology.

All other human cognitive faculties of that implanted live-by-the-five-senses imperative are acquired, and their development is possible through formal learning, or activity in industry, and all are made possible only through the invention of letters and words.

For besides sense, and thoughts, and the train of thoughts, the mind of man has no other motion; though by the help of speech, and method, the same faculties may be improved to such a height, as to distinguish men from all other living creatures. (Hobbes, 1839b, p. 16)

Man is no longer distinguished from the beasts by divine soul, or by will, but rather by virtue of an innate capacity for reason after its further development under actions

Now All the World's a Leviathan

In brief, single-cell organisms with a nucleus have an unminged and unconscious will to live and manage life suitably enough, for as long as certain genes allow them. Brains expanded the possibilities of life management even when they did not produce minds, let alone conscious minds. For that reason they too prevailed. By the time minds and consciousness were added to the mix, the possibilities of regulation expanded even more and made way for the kind of management that occurs not just within one organism but across many organisms, in societies. Consciousness enabled humans to repeat the leitmotif of life regulation by means of a collection of cultural instruments—economic exchange, religious beliefs, social conventions and ethical rules, laws, arts, science, technology. Still, the survival intention of the eukaryotic cell and the survival intention implicit in human consciousness are one and the same. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain* (pp. 59 - 60). Random House. Kindle Edition. (Damasio, 2010, pp. 59 - 60).

Behind the imperfect but admirable edifice that cultures and civilizations have constructed for us, life regulation remains the basic issue we face. Just as important, the motivation behind most achievements in human cultures and civilizations rests with that precise issue and with the need to manage the behaviors of humans engaged in addressing that issue. Life regulation is at the root of a lot that needs explaining in biology in general and in humanity in particular: the existence of brains; the existence of pain, pleasure, emotions, and feelings; social behaviors; religions; economies and their markets and financial institutions; moral behaviors; laws and justice; politics; art, technology, and science—a very modest list, as the reader can see. Life and the conditions that are integral to it—the irrepressible mandate to survive and the complicated business of managing survival in an organism, with one cell or with trillions—were the root cause of the emergence and evolution of brains, the most elaborate management devices assembled by evolution, as well as the root cause of everything that followed from the development of ever more elaborate brains, inside ever more elaborate bodies, living in ever more complex environments. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious Brain* (pp. 59 - 60). Random House. Kindle Edition. (Damasio, 2010, pp. 59 - 60).

of the senses and experiential learning. Each new arrival may, through learning, separate themselves from the beasts to different degrees. The balanced virtue and rest of the harmonious Aristotelian soul is dismissed. Nonetheless, the capacity for reason “as an act of man's mind, that I can remember, naturally planted in him, so as to need no other thing, to

the exercise of it” (Hobbes, 1839b, p. 16), mentioned above, seems to linger as a half-way house: for “every man brought Philosophy, that is Natural Reason, into the world with him, for all men can reason to some degree, and concerning some things” (Hobbes, 1839a, p. 1). If Hobbes’ natural reason is part of God’s creation of beings, that is, is part of natural law, then it must be God given, or from whence else did everyman obtain that natural reason carried with them into the world.

For Hobbes, mankind’s natural state becomes a relentless pursuit for ongoing satisfaction of insatiable repetitive appetites which engenders “a perpetual and restless desire of power after power that ceaseth only after death” (Hobbes, 1929, p. 77). The ceaseless desire is driven by such conditions as the need to assure sufficient resources to maintain present or better levels of satisfaction into the future, the desire for more power, and the love of flattery. The competition for “riches, honour, command, or other power” (ibid., p. 77) so generated would, except for the fear of violent death, result in enmity and war, because mankind would “kill, subdue,

supplant, or repel” in pursuit of them (ibid., p. 77). “Worst of all mankind will live in continual feare, and danger of violent death, and the life of man, solitary, poore, nasty, brutish and short” (Hobbes, 1958, p. 107).

The fear of violent death, in Hobbes’ time, was made particularly clear by an ongoing state of war, but is ever present through mankind’s awareness that in general the difference between person and person—Hobbes usage is man and man—in terms of strength of body and mind is such “that the weakest has strength enough to kill the strongest, either by secret machination, or by confederacy with others, that are in the same danger with himself” (Hobbes, 1839b, p. 110). It is interesting in this regard that the face in the opening illustration of *Leviathan* is said to markedly resemble alternatively Cromwell or Charles I (K. Brown, 1980, pp. 410 - 411; Waller, 1904, p. v). The change of portrait may be attributed to flattery, or to fear, or to both, or for that matter be the result of none of these, pirated editions having various printing differences from the original. Rather than live in their natural state—which is “the warre of every one against his neighbour” (Hobbes, 1904, p. 224)—in the absence of the amenities brought by arts and letters, culture, trade, and industry, men construct and inhabit the artificial state, the Leviathan.

Strauss (1966) gives a general explanation of the process by which the essential tension between rapacious self-interest and fear of violent death contributes to the emergence of a Leviathan. He interprets Hobbes’ denial that altruism is natural, and Hobbes’ assertion that mankind is essentially rapacious (ibid., p. 3), as a break from the tradition that mankind, through their gregarious inclination, is essentially good. The artificial state is a resolution of essential tension between two postulates. Under a postulate of appetite, vanity drives the natural appetite occasioned by animal nature and the experiences of the senses such that men, now mankind, from their very birth, and naturally, “scramble for everything they covert, and would have all the world, if they could, to fear and obey them” (ibid., p. 10). Under a postulate of reason, humans ascertain that avoidance of death is necessary for enjoyment of appetite. The fear that humans have of violent death, which is stronger than the appetite and desire for life, is the mechanism through which the postulate of reason checks and balances the postulate of appetite: *ergo* the artificial state.

Hobbes' own explanation is more detailed. There is nature and its bodies both organic and inorganic and its domain of physics, there is mankind foremost among the beasts, and its domain of Ethics, and there is civil government and its domain of politics. Mankind is common to all three and is the link between nature and civil society. Mankind builds the artificial state through applying the Laws of Nature which govern his movements. According to Hobbes:

A LAW OF NATURE, (*Lex Naturalis*.) is a Precept, or generall Rule, *found out by Reason*, [italics added] by which a man IS forbidden to do, that, which is destructive of his life, or taketh away the means of preserving the same; and [is forbidden] to omit, that, by which he thinketh it may be best preserved. (Hobbes, 1904, p. 86, my square brackets, Hobbes' capitalisation)

Table 58 on page 579 contains the first four of Hobbes' so-called Laws of Nature. Hobbes develops nineteen of them, or twenty, if that collection of such harms as drinking to excess, which work against one's good, be counted the twentieth. His social contract and covenant theory flows from the second law. Should Hobbes' exposition:

seem too subtile a deduction of the Lawes of Nature, to be taken notice of by all men; by whereof the most part are too busie in getting food and the rest too negligent to understand; yet to leave all men unexcusable, they have been contracted into one easie sum, intelligible, even to the meanest capacity; and that is, *Do not that to another, which thou wouldest not have done to thy self*. (Hobbes, 1904, pp. 107 - 108)

Unfortunately such easy-sum rules may, due to complexity of human nature, have their efficacy quickly compromised. The Laws of Nature, which are "Immutable and Eternal" (Hobbes, 1904, p. 108), are discovered by reason and are predicated on the true state of human nature. They underwrite the building of the Leviathan through which mankind might live a peaceful life of which it does not weary.

In summary, the method of Hobbes' *Polis* or Leviathan is to cognitively gather in an artificial state predicated on obeying the laws of that state, which laws themselves are Laws of Nature discovered by reason. Its sphere of operations is the Laws of Nature expressed as civil laws and through obedience to them the surrender of individual vanities to the state in return for peace, prosperity and advancement. Its constraints are, *in foro interno*, lack of true desire to obey those laws and thus to feign obedience to them, and *in foro externo*, permission not to obey the law when,

in situations where others are not obeying it, harm might come to one who does obey it.

Table 58: Hobbes' Laws of Nature 1 Through 4

(1) That every man, ought to endeavour Peace, as farre as he has all hope of obtaining it and when he cannot obtain it, Law of that he may seek, and use, all helps, and advantages of Warre.

(2) That a man be willing, when others are so too, as farre-forth, as for Peace, and defence of himselfe he shall think it necessary, to lay down this right to all things and be contented with so much liberty against other men, as he would allow other men against himselfe.

(3) That men perform their Covenants made.

(4) That a man which receiveth Benefit from Gratitude another of meer Grace, Endeavour that he which giveth it, have no reasonable cause to repent him of his good will.

Source: Constructed by Ian Eddington from Hobbes, T. (1904). *Leviathan*. (pp. 86 – 97). London: John Bohm

first principles of natural law through *synderesis*.

We have also already met Hobbes' maxim of living by the senses and development of a fledgling human capacity for reason through experience and learning rather than reason's presence as a divine spark, capacity for reason yet being part of God's made nature. What then does Hobbes mean by Ethical action? His answer is that to be

Terms Usage

Traditional Usage
in foro interno = in closed court, in conscience.
in foro externo = in open court, in person made law

Hobbes' Adaptation
In foro interno as applied in the Laws of Nature is a personal wanting of things to occur.
In foro externo as applied in the Laws of nature captures self-harm that may result from acting out or obeying law in situations where it is known that others are not obeying those laws.

These terms are discussed further in the next section on Ethics

I now turn to discussion of Hobbes' Ethics, the second of the three domains of his philosophy mentioned on page 570.

Hobbes' Ethics

Hobbes' dismissal of crucial parts of an Ethics that Aquinas had developed by extending Aristotelian reasoned virtue has already been mentioned, on page 423, Hobbes claiming that there is no in-blown virtue, and no practical wisdom grasping its own

ethical is to obey the Laws of Nature including the Laws of the Leviathan or Commonwealth.

Hobbes requires that the Laws of Nature bind mankind *in foro interno* (Hobbes, 1904, p. 108), that is in the inner court of conscience, in Hobbes'

usage meaning that mankind should truly desire to obey them. To truly desire to obey the Laws of Nature is a sufficient condition for morality. Feigned observance is immoral. Mankind is not bound to obey the Laws of nature *in foro externo* (ibid., p. 108), that is in open court, the court of person-made law meaning in Hobbes' usage,

that a person is not bound to obey man-made law in situations where they know others are not obeying them, and where to continue to obey them would result in harm to the person so obeying. Observance of the Laws of Nature, and the Laws of the artificial state predicated on them, is at the heart of Hobbes' Ethics or moral philosophy.

The antithesis between natural appetite, driven by vanity, and the fear of violent death, invoking through reason the foundation of the artificial state, is the root of morality and the basis upon which government and the good state exist. The so-called good state for Hobbes is one which delivers peace, and a tolerable life made possible by the flourishing of industry, arts and letters and other such goods as peace permits. For Hobbes, the end and good of mankind, which is always founded on self-preservation, is said to be "nothing else but the security of a man's person, in his life, and in the means of so preserving life, as not to be weary of it" (Hobbes, 1904, p. 89). Only those virtues which lead to the founding of a state which removes the fear of violent death are moral virtues.

For Hobbes, just and unjust actions cannot be judged so, independent of legislation. "Where there is no common Power, there is no Law: where no Law, no Injustice (Hobbes, 1839b, p. 115) and in war force and fraud are the cardinal virtues (ibid., p. 115). Justice and injustice are not faculties of the body or mind (ibid., p. 115): they relate to man in society, not in isolation. The just man obeys the law simply because it is law and for no other reason. One who obeys the law for fear of punishment is, for example, not just.

The surrender of personal power to the authority of the Leviathan is, Hobbes argues, mankind's reasoned choice for peace (Hobbes, 1904, p. 115). These Laws are contrary to our natural passions, passions carrying such names as enmity, jealousy, honour, justice, pride, revenge (ibid., p. 115). Mankind's surrender to civil law in exchange for peace is predicated on mankind's essentially egotistical and selfish nature. The beginning of these Laws is found in the assertion that mankind is selfish in all respects.

For example, the scholastic idea of will as rational appetite is “not good” (Hobbes, 1904, p. 36) because, were it so, the will could not act against reason. Rather, the “last Appetite, or Aversion, immediately adhaering to the action, or to the omission thereof, is that wee call the WILL; the Act, (not the faculty,) of Willing.” (ibid., p. 36). Will is voluntary and “of all Voluntary Acts, the Object is to every man his own Good” (Hobbes, 1904, p. 103). Even those human passions associated with altruism, for example love (Hobbes, 1840, p. 49), grief or pity (Hobbes, 1904, p. 35) are, like revenge (Hobbes, 1840, p. 43), done for selfish reasons.

In the natural state man can do “whatever he listeth [liketh], to whom he listeth, to possess, use, and enjoy all things he will and can” (ibid., p. 84, my square brackets). There, in the state of nature, is found the case of “all men having Right to all things” (Hobbes, 1840, p. 98) and there is nothing individuals:

... can make use of, that may not be a help unto him, in preserving his life against his enemies; It followeth, that in such a condition, every man has a Right to every thing; even to one anothers body. (Hobbes, 1904, p. 87)

Hobbes goes so far as to assert that “irresistible might, in the state of nature, is right” (Hobbes, 2004, p. 51). We have already met Plato’s convincing argument that justice is higher than might on page 112 of this enquiry.

To avoid the natural state, mankind submits to the law of the artificial state and herein lies mankind’s morality:

And consequently all men agree on this, that Peace is Good, and therefore also the way, or means of Peace, which (as I have shewed before) are Justice, Gratitude, Modesty, Equity, Mercy, & the rest of the Laws of Nature, are good; that is to say, Morall Vertues; and their contrarie Vices, Evill. Now the science of Vertue and Vice, is Morall Philosophie; and therefore the true Doctrine of the Lawes of Nature, is the true Morall Philosophie. (Hobbes, 1904, p. 109)

and

Morall Philosophy is nothing else but the Science of what is Good, and Evill, in the conversation, and Society of man-kind. Good, and Evill, are names that signifie our Appetites, and Aversions. (Hobbes, 1904, p. 109)

The problem is that good and evil vary according to the “different tempers, customes,



and doctrines of men” (Hobbes, 1904, p. 109) and the differences may well be too great to resolve.

At the time of the painting, the Scientific Revolution, occasioned in part by the new Science of Bacon and Hobbes, was in progress and the full Industrial Revolution was in waiting. Wright’s subjects were people of industry and commerce, optimistic about progress.

Source: Cropped by Ian Eddington from (Joseph Wright of Derby, 1764-66). (artist). *A Philosopher Lecturing with a Mechanical Planetary*. (oil on canvas). Derby, England: Derby Museum and Art Gallery. (Joseph Wright of Derby, 1764-66).

Hobbes’s novelty was to make scientific understanding of the “movements” of mankind, that is, the Laws of Nature as they applied to inanimate bodies, humans and artificial bodies, an activity effected without direct reference to God or final cause. He separated Ethics from theology and divine reason but in respect of man *qua* citizen, more appropriately man *qua* subject, morality

consists in obeying the law of the artificial state. This is a departure from both the Aristotelian and the Christian tradition but it does not amount to Hobbes’ expulsion of God from his system. At the end of the road, God is still in the machine. The sovereign is not bound to the specific Laws of the Leviathan as his subjects are, but like them he is bound to the Laws of Nature, which Laws are God’s architecture. The Sovereign answers to God to the extent of their failure in delivering a Leviathan.

The OFFICE of the Sovereign, (be it a Monarch, or an Assembly,) consisteth in the end, for which he was trusted with the Sovereign Power, namely the procuration of the safety of the people; to which he is obliged by the Law of Nature, and to render an account thereof to God, the Author of that Law, and to none but him. But by Safety here, is not meant a bare Preservation, but also all other Contentments of life, which every man by lawfull Industry, without danger, or hurt to the Common-wealth, shall acquire to himselfe. (Hobbes, 1904, pp. 242 - 243)

The Church is the State. The Sovereign is the supreme pastor. He alone answers to God. The pastors to whom he, the Sovereign, delegates the work of the Church carry out that work civilly on his behalf. The way to enter the city of God is to obey Christ’s laws but this is mankind’s own affair and it is not the morality of the *Polis*. For Hobbes, the Sovereign must be Christian and were he not, the subject might disobey the Sovereign, but then only when the Sovereign orders the subject to

disavow their faith. Martyrdom then is the only alternative. Thus in this manner, for Hobbes, morality in the *Polis* remains a matter of both politics and theology.

It is easier to accept that Hobbes' morality is largely a political morality than it is to accept it as a God-given stand-alone antecedent morality prior to, and discoverable by, each generation of mankind. To wit, the Laws of Nature, those laws which govern movement, including the movement within mankind, those passions, are said to be eternal and immutable.

They can thus, over and over, be found out by reason, some of which capacity for reason is for Hobbes innate, and other of which is learned through experience. In a universe which consists only of bodies, these immutable and eternal Laws must exist amongst the totality of those bodies. That is, they must exist in nature, including mankind which is a part of nature, and in the artificial Leviathan too, which is predicated on so-called correct understanding of those natural Laws. Nature in its own right is the work of God so that obedience to the laws of nature, including the law of a divine-right Leviathan, is just a divine Sovereign's step removed from a given prior eternal morality. Resolution of this enigma, that is, the possibility of an eternal immutable God-created morality prior to every generation, rather than morality of simple obedience to state law by each generation, is difficult to find in Hobbes. Enigmatically the state of nature is desperate but in the eternal laws of that desperate state mankind's reason is able to discern rules for a workable artificial state. Failure to address such enigma does not dull the force of Hobbes' argument that moral philosophy is the philosophy of right and wrong, good and evil, found expressed in words such as love, valour and their opposites, predicated on correct understanding of animate and inanimate natural condition, including human condition.

In summary, Ethics' method is to obey the Laws of Nature as these are expressed through the laws of the Leviathan. Its sphere of operations is control over movement in bodies in accordance with the Laws of Nature and the laws of Leviathan—will *qua* last appetite in act of improving individual and societal welfare. Its constraint is mankind's egotistical selfish natural state and its propensity to occasion a failure of

Table 59: Key Terms Nuance—Thomas Hobbes (AD 1599 – 1679)

Descriptor	At the Dawn of the Modern Era—Hobbes (AD 1599 – 1679)			
	Method	Sphere of Operations	Constraints	Era
Science	Its method is ratiocination in resolution and composition operational through syllogistic demonstration of fact.	Movement or generation of bodies natural or political; scientific understanding of accidents and laws of those bodies and the power brought by such understanding for construction of a peaceful and prosperous artificial state.	Its constraints are nature’s complexity, problems of definition and deficiencies in syllogistic demonstration.	Circa AD 1561 to 1679
Ethics	To be ethical is to obey the Laws of Nature as these are expressed through the laws of a Leviathan. <i>Politique</i> Ethics, a subset of Philosophical Ethics and discussed in detail in the enquiry, challenges the esoteric/exoteric methodology employed by the enquiry, and is not included in this table.	The will in act of improving individual and societal welfare. Movement in bodies and its control in accordance with the Laws of Nature and the laws of a Leviathan.	Its constraints are mankind’s egotistical selfish natural state and mankind’s failure of virtue understood as a failure to found an artificial state immune from a fear of violent death—a triumph of bad passions, similarly understood, over good passions.	
<i>Polis</i>	Cognitive gathering in an artificial state, a Leviathan or Commonwealth, predicated on obeying the Laws of Nature discovered by reason.	Laws of Nature expressed as civil laws and through obedience to them the surrender of individual vanities to the state in return for peace, prosperity and advancement.	<i>In foro interno</i> lack of true desire to obey those laws and thus to feign obedience to them, and <i>in foro externo</i> permission not to obey the law when, in situations where others are not obeying it, harm might come to one who does obey it.	

Table 60: Progressive Articulation of Thesis Proposition Statements—Thomas Hobbes (AD 1599 – 1679)

PART THREE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nance Brought to Interpretation of Thesis Proposition Statements
1	Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of <i>Polis</i> situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of <i>Polis</i> is situated in natural social instinct implanted in mankind for whom virtue is some kind of knowledge.	Chapter 7 Re-emergence of Experimental Science	Not applicable
		Chapter 8 Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	There is no nuance of the term Modern Age. <i>Polis</i> is the peaceful, Godly and prosperous New Atlantis in which scientific knowledge is power over the Laws of Nature. Reason and the precepts of morality are divine. A focus on the right use of knowledge as power replaces a focus on the kind of knowledge of which virtue may consist.
		Chapter 9 Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	There is no nuance of the term Modern Age Some capacity for reason appears to come ready made into the world with birth, after which, reason <i>per se</i> is learned both formally and also vicariously through industrial arts and activity. No part of reason is divine. Apperception of knowledge as power continues to override focus on the question of what kind of knowledge might constitute virtue. To be morally virtuous is to obey the law because it is the law and not to feign to obey the law. It allows mankind to dominate nature and/or to lift mankind from its natural state. The virtuous person acts to maintain peace and improve the conditions of life. The <i>Polis</i> is an artificial state or Leviathan predicated on Laws of Nature discovered by reason and maintained by the ongoing surrender of vanity to peace and prosperity.
2	Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.	Chapter 7 Re-emergence of Experimental Science	Experimental Science returns and the age of reason begins. Science understood as syllogistic demonstration is becoming replaced by Science as induction and deduction within the rules for reasoning in natural philosophy.
		Chapter 8 Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	There is no nuance of the term Modern Age. Science is knowledge of the Forms or Laws of Nature derived from Bacon’s new kind of Induction applied through his new machine of method, his novum organum. Ethics is the doctrine of the will in search of the good understood as the welfare of the individual or society. It consists of making the correct choice between self-good and good-in-communion alternatives in comparative domains. It inheres in mind well-ordered and composed in itself and mind well disposed towards others, and it answers to theology Metaphysic replaces metaphysics. Metaphysic is inquisition of formal cause in operative Science and partly informs superinduction of welfare benefits for mankind. Practical Ethics is the will working towards the good of the individual or society. At the individual level it is internal goodness and at the societal level it is politics or external goodness.
		Chapter 9 Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	There is no nuance of the term Modern Age Science is ratiocination about qualities of body effected through resolution and composition itself a product of syllogism and reasoned fact. Ethics and theology are expelled from Science. Ethics is no longer the servant of theology. Practical Ethics is the act of obeying the law of Leviathan.

Table 60 (Continued)

PART THREE OF THE ENQUIRY			
#	Proposition Statements	Enquiry Chapter	Shifting Sands: Key Terms Nuance Brought to Interpretation of Thesis Proposition Statements
3	Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.	Chapter 7 Re-emergence of Experimental Science	Not applicable
		Chapter 8 Francis Bacon (AD 1561 – 1626) and Dawning of a Modern Age	To act ethically is to make a correct choice between comparative duties. Ethics is a servant of theology and its end is the good of the individual and society.
		Chapter 9 Thomas Hobbes (AD 1599 – 1679) and Dawning of a Modern Age	To act ethically is to obey the law because it is the law and not to feign to obey the law. Its end is the peace and prosperity of Leviathan or Commonwealth.
<u>Integrating Summary of Part Three</u>			
<p>A fledgling experimental Science found in Magnus (AD 1193 – 1280) had, by the time of Isaac Newton (AD 1643 - 1727), formed a basis for a method of Science presently in practice: observe, hypothesise, falsify or verify by testing, and tentatively accept verifications as theory. This long development of experimental Science method occurred within a system of faith Ethics and in its own way, was part of the social, political, and cultural change and discovery of the times: renaissance and humanism, reformation and counter reformation, European discovery of printing, European discovery of the Americas, and emergence of nation states. Towards the end of this period two scholars, Francis Bacon (AD 1561 – 1626) and Thomas Hobbes (AD 1588 – 1679) addressed Science in political philosophies so different as to constitute a clear change from Aristotelian political philosophy as it had become known in its western Christian dress. Under Bacon Science became a practical, experimental, operative activity in pursuit of advancement of learning and human welfare, a pursuit free from Aristotelian metaphysics and final cause, yet subject to Ethical constraints largely predicated on theology, <i>Politique</i> Ethics being predicated on other referents as well. . Under Hobbes, Ethics was no longer monopolised by theology and to be Ethical was to obey the laws of the state. The enquiry esoteric/exoteric divide methodology is increasingly difficult to sustain because induction and/or deduction, including its attendant inference, is increasingly linked to experimentation and invention and with both Bacon and Hobbes Science applies itself at the level of nature, man and society and its knowledge is a power which occasions mankind’s advancement through peace and economic development. Aristotle’s naturally good state and good life had fallen to an artificial state in which mankind obeyed the law in return for security and prosperity that Science as power over nature’s laws would bring under a peace occasioned by obedience to civil law. Divine reason no longer separated mankind from the brutes, rather capacity for reason learned and developed through sensual experiential occurrence. A <i>Leviathan</i> or a <i>New Atlantis</i>—and others too—were available as alternative <i>Polies</i> to cities of God, a republic of ideas, or a natural state prior to man. Ethics had descended to the will’s correct selection of the means to individual and communal welfare through simple obedience to civil law. Science had become induction and deduction of truths about nature, mankind and society, its knowledge being applied to gain power over nature for utility and advancement of mankind and human condition.</p>			

virtue understood as a failure to found an artificial state immune from a fear of violent death—a triumph of bad passions, similarly understood, over good passions.

CONCLUSION TO CHAPTER 9

For Hobbes, Science is knowledge of consequences. It is a domain of philosophy that treats of generation and properties of body. Science as knowledge is accessible through resolution and composition. Physics emerges from consequences of the accidents of bodies natural. Civil philosophy emerges from the consequences of the accidents of bodies political and is subdivided into Ethics, the consequences of mankind's disposition and manners, and politics, the consequences of mankind's civil duties. Each of these Sciences flows naturally from movement in or of bodies, and the remainder of the Sciences flow from these. The knowledge of Science is power, power to build an artificial state for mankind's peace, and economic and social welfare (Hobbes, 1839b, p. 7). Science's method is ratiocination in resolution and composition operational through syllogistic demonstration of fact. Its sphere of operations is knowledge of accidents and laws of bodies natural or political, and power brought by such understanding for construction of a peaceful and prosperous artificial state. Its constraints are complexity, problems of definition and deficiencies in syllogistic demonstration.

Morality consists of mankind's act of maintaining peace and improving the conditions of life and to act ethically is to obey the law of Leviathan. Internal human virtues involved in this process go by such names as justice, equity and mercy. Ethics is freed from theology understood as a personal affair predicated on other than man-made law. Ethics' method is to obey the Laws of Nature as these are expressed through the laws of Hobbes' Leviathan. Its sphere of operations is control of movement in bodies in accordance with the Laws of Nature and the laws of Leviathan—the will in act of improving individual and societal welfare. Its constraints are mankind's egotistical selfish natural state and its propensity to occasion a failure of virtue understood as a failure to found an artificial state immune from a fear of violent death—a triumph of bad passions, similarly understood, over good passions.

In method *Polis* is a cognitive gathering in an artificial state predicated on obedience to Laws of Nature discovered by reason. Its sphere of operations is those Laws of Nature expressed as civil laws and through obedience to them, surrender of individual vanities to the state in return for peace, prosperity and advancement. Its constraints consist of *in foro interno* lack of true desire to obey those laws and thus to feign obedience to them, and *in foro externo* permission not to obey the law when, in situations where others are not obeying it, harm might come to one who does obey it. The cognitive gathering in its real world form is a utilitarian trade off in which, through a scientific Ethics, mankind obeys the law and one in which the end of scientific knowledge is power over nature, knowledge no longer being simply some kind of virtue.

The nuance Hobbes brings to the enquiry's key terms, like that of Bacon, exhausts the enquiry's methodology and again this is taken as a marker of a dawning of a modern age. Hobbes' Science is an active applied Science requiring investigation and control of movement in real world bodies towards real world utilities for mankind. His Ethics is active and requires will to obey person-made law, a will to act or not act in a real world. His *Polis* is a real *Polis*, a constructed artificial *Polis* rising above a state of nature, and a *Polis* which, unless actively maintained, will fall to a natural state of chaos.

Hobbes' Science, like that of Francis Bacon, incorporates nature, man and society and its knowledge is a power which might occasion mankind's advancement through peace and economic development. Hobbes' work *Leviathan* is among the first so-called modern age works holistically written from a scientific perspective. Hobbes, like Francis Bacon, contributed substantially to a divorce of Science from metaphysics and theology, and advanced the separation of theology from Ethics. Together, without banishing a Christian God from their machines, Bacon and Hobbes all but extinguished the divine spark in reason. Mankind henceforth was to develop their reasoning powers through sensual experiential learning in domains that now might be called theoretical and practical. Table 59 on page 584 outlines the nuance Hobbes brings to the enquiry's key terms. Table 60 on page 585 brings that key terms nuance to integrating articulation of the Thesis Proposition Statements.

Chapter 10

Veracity of the Thesis Proposition Statements, Original Contribution and Closure of the Enquiry

INTRODUCTION

The title of this enquiry, *Relationships amongst Science, Ethics and Polis in Pre-Modern Times*, is the name given to an enquiry into Pre-Modern heritage and its basis for, and possible contributions to, fundamental conditions from which a new era, subsequently named the Modern Age, may have begun to emerge. The enquiry does not then identify tenets of modernism and search for their Pre-Modern origins. Rather it focuses on Western political philosophy prequels to what later came to be called modernism.

Page 1 of the enquiry's Introduction provided a statement of the enquiry's aims. In review, the major aim of the enquiry is to offer a multiple-voice interpretation of conditions of political philosophy both prequel to, and then metamorphosing coincident with, detected emergence of a new era subsequently named the Modern Age.

There is one minor aim, namely, to focus from a geography of mind perspective on mankind's struggle with the fact-value divide, and glean from that focus and from insights gained from ongoing application of enquiry methodology, an opinion about contributions philosophy might offer to ongoing enquiry about human condition and consciousness, and twenty-first century speculation about *Polis*.

Consequently, in respect of the major aim, the completed enquiry consists of three Thesis Proposition Statements demonstrated plausible through progressive measurements of nuance in the key terms of those statements, the demonstration itself being effected within a methodology specifically constructed for enquiry purposes. For the minor aim, the enquiry consists of discussion of insights about the fact/value divide gleaned as a byproduct of application of procedures suggested by enquiry methodology itself. The methodology which, in part, relies on foundational attributions of denotative unchanging key terms meanings is housed within, and confined to, an unchanging ideas hierarchy linking those attributed key terms

meanings. While both exoteric and esoteric dimensions of key terms are explained, enquiry focus is on the latter of these.

Beginning in the next paragraph, and drawing on individual chapter content and conclusions, I offer a *précis* of the case for demonstrated plausibility of those Thesis Proposition Statements and then, after commenting first on the kind of original contribution the enquiry may contain, and second on insights gained about the fact value divide and on implications for further contributions philosophy may make to *Polis/P(p)olis* studies research—pages 606 to 629—I bring the work to a close through a brief comment on achievement of aims.

In particular, the *précis* of the case for demonstrated plausibility is drawn from Summary Table 13 beginning on page 192 and Summary Table 14 beginning on page 196 and, where my summarisation in those tables has been too severe, directly from the text of the enquiry. Tables 13 and 14, despite their early location in the enquiry, were assembled from summary tables developed on a chapter by chapter basis, which chapter tables in turn progressively and respectively summarise measured key terms nuance and articulation of Thesis Proposition Statements 1, 2 and 3 in terms of that nuance. Changing relationships amongst key terms is, within the foundational ideas hierarchy attribution earlier mentioned, interpreted as changing political philosophy so that the traced key terms nuance also traces changing political philosophy.

DISCUSSION OF THE PLAUSIBILITY OF THESIS PROPOSITION STATEMENTS 1, 2 AND 3
Discussion of Thesis Proposition Statement 1 Begins

Thesis Proposition Statement 1. Dawning of the Modern Age is coeval with arriving recognition of a binding sentiment of *Polis* situated in the psyche of a rapacious mankind in whom no part of reason is divine and for whom knowledge is power, which recognition provides an alternative to a long held standpoint that binding sentiment of *Polis* is situated in a natural social instinct implanted in mankind for whom virtue is some kind of knowledge.

Thesis Proposition Statement 1 contains the key term *Polis*, the term Modern Age being simply a marker term as explained on page 3. In its enquiry appearance under Plato, *Polis* or cognitive gathering is a city of ideas, a republic of ideal and absolute

forms. The gathering is bound by four classical Greek virtues which reside in the human soul: wisdom, courage, justice and temperance. Through these virtues mankind may pursue its collective work of attaining happiness with justice through obedience to law, minding their own business, and temperance. Virtue is some kind of knowledge about the good-at-what. Plato's *Polis* is a just and happy *Polis* in which a hierarchy of citizens mirrors a hierarchy of soul and in which the collective good-at-what, justice with happiness, emerges from Greek values.

Aristotle rejected Plato's ideal forms as an explanation of being. He argued that the eternal forms exist in nature and found a binding glue of *Polis* in a natural state prior to man. Aristotle's esoteric *Polis* is a cognitive realisation of a social instinct implanted in man by nature. The *Polis* so understood is the final cause of the good life. It is predicated on balanced soul in contemplation of mankind's end of happiness with justice and honour. The natural cognitive state in which mankind gathers is stable and good and virtue as some kind of knowledge remains relevant for apperception of Aristotle's *Polis*.

Aristotle's *Polis* was transformed into a city of God during a time of intermingling of Judeo-Greek heritage with Christianity in development. The binding substance of the city of God became personal acceptance of God in Christ as *Logos* and all in all. Nature, including mankind's prior necessity to gather, had become a Christian moral order and proving ground for mankind's end in God. The *Polis* as city of God prevailed under progressive interpretation and modification by Magnus (AD 1193 – 1280) and Aquinas (AD 1225 – 1274) and others during times of a rediscovery of Aristotle's wider corpus and a re-emergence of experimental Science until the seventeenth century when its position faced considerable challenge.

First, under Bacon, mankind could investigate God's moral realm of nature by using a Science of which God, other than through the gift of reason, was no part. The cognitive glue of this new *Polis*, this *New Atlantis*, (F. Bacon, 1952a) consists of belief in God as the architect of nature and reason, and belief in, and commitment to, power over nature as the key to mankind's advancement. This change in the nature of *Polis* is substantial. It strains the enquiry's method of tracing *Polis* mainly by its esoteric dimension alone because belief in power over nature in Bacon's *New*

Atlantis (F. Bacon, 1952a) can only be sustained through experimental scientific engagement with existing nature.

Secondly, under Hobbes, God is excluded from reasoned investigation of the physical realm. Reason is not divine, and mankind must live as best they can by their wits, and separate themselves from the beasts by experience and learning. Neither is the natural state prior to mankind and potentially good. The natural state is selfish and rapacious. Mankind cognitively gathers in an artificial state, a *Leviathan*, occasioned by their surrender of the rapacious and selfish, to the fear of violent death, and to law, in return for the prosperity of peace. This change in the nature of *Polis* is also substantial. It exhausts Aristotelian political philosophy. The natural state had become predicated on evil rather than good, and obedience to law became the binding glue of the artificial state and *Polis* that replaced it. In this artificial state might be seen the emerging idea that mankind can go its own way and seek its own power over God's created nature, without God's permission or assistance. In the *Leviathan* no divine presence, whether Greek *logos* or Christian *Logos*, is instrumental in binding the gathering and this departure is taken to signal a possible beginning of a new era. Certainly both Plato and Aristotle require obedience to law, but that law was not simply statute law as it is now known, it being informed by virtue and elements of natural law as it was then understood. It is not simply the law of an artificial state in which the ruler is not bound by that law.

I posit that the transition from a *Polis* predicated on a natural state prior to man, and subsequent variations of it, with its virtue as some kind of good-at-what knowledge and its end in happiness with justice, to a *Polis* predicated on a natural state which, because it is rapacious, evil and destructive, is rejected in favour of a *Polis* predicated on an artificial state in which virtue is obedience to civil law, knowledge is power over nature, and whose end is peace through a trade-off of vanity and personal power for relief from a fear of violent death, is so significant a transition as to signify dawning of a new era. Specifically, validity of Thesis Proposition Statement 1 thus rests on the strength or otherwise of this enquiry's demonstration that a quickening transition of *Polis* from city of God through New Atlantis to Leviathan might not only reveal an emerging new era but also provide a way to

identify and surrogately measure that emergence, and on the basis of enquiry demonstration, and within the confines of the enquiry methodology and the measure it adopts, I consider Thesis Proposition Statement I plausible.

Discussion of Thesis Proposition Statement 2 Begins

Thesis Proposition Statement 2. Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.

Thesis Proposition Statement 2 contains the key terms Science and Ethics and also shares the term Ethics with Thesis Proposition Statement 3, reproduced for reference

in the accompanying text box.

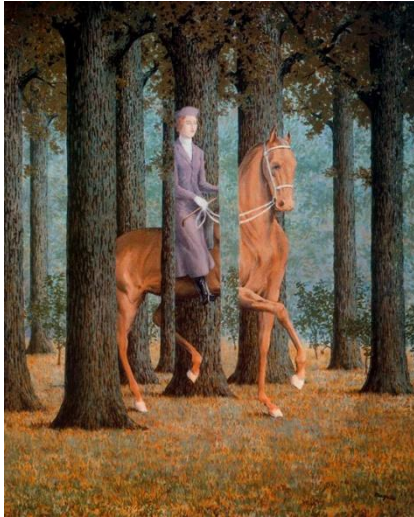
<p>Thesis Proposition Statement 3 Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.</p>

I discuss Science first. There is evidence of an early Western flowering of experimental Science occasioned by mankind's speculations about the world, and about what it is made of, and how it functions.

The dialogical Socrates' dissatisfaction with scientific matters and his second turning is consistent with Plato's formulation of scientific knowledge as infallible knowledge, knowledge about the unchanging, and the highest form of knowing. Through dialogue, Plato urges that humans are capable of misunderstanding sensory information and pronounces scientific knowledge to be knowledge of absolute ideal forms gained by virtue of the human soul's partaking of those forms through mind and intelligence. Human intellect as *nous* accesses the ideal forms while the animal and vegetable desires of the body, aided by the senses, help with access to their glass-darkly earthly resemblances. The final Science is a partaking of Plato's so-called one or ontological principle of being.

Aristotle was soon to reject Plato's forms and explanation of Science predicated on them. For Aristotle natural beings exist. They consist of form and matter and the human mind accesses them in a two-step process. Perception receives the forms

passively which forms are then accessed through active reflection and reason. The forms are eternal and follow imperatives of a final cause of thought thinking itself. In the chain of being, the efficient cause carries form to matter. There are four causes of



Source: Magritte, R. (1965). (artist). *Carte Blanche*. (oil on canvas). Washington DC: Mellon Collection, National Gallery of Art.

In this beautiful picture the mind makes a whole of what otherwise may have been conflicting sensory information. Bacon's idols are ever present. Here, from the experience of tribe, den, market and theatre, the viewer constructs a meaningful reality from the visible and invisible. From whence, in a more complex life situation of substantial change and unknown certainty, when idols are traumatised, and real and virtual world experience are in conflict, comes a *Polis* to bind a possible next age?

being respectively known as formal, material, efficient and final and scientific knowledge is knowledge of all of the four causes of being. Aristotle calls humankind's highest intellectual virtue, its highest good-at-what of the mind, philosophical wisdom and it consists of Science as reasoned demonstration, and intuition. Intuitive knowledge is the knowledge of experience which consists of sense perception plus memory, sense perception in the first place being congenital to mankind. Intuitive knowledge is indemonstrable knowledge. Science is demonstrated knowledge. Science occurs through the reasoned demonstration of the syllogism in which an intuitive grasp of the premises is, through induction the syllogism allows, carried to a deduction of a universal body

of fact. Universals, which are of the mind, are the currency and *lingua franca* of Science. Science is the active mind's derivation of universals not the itinerant soul's beholding of the forms, and Aristotelian Science involves both induction and deduction. It informs contemplation of natural beings, mathematics and the gods, and adjudicates on behalf of practical wisdom.

Aristotelian Science as syllogistically demonstrated fact fell to revealed truth as an explanation of the all-in-all of a Christian God's created universe. As Christianity spread it developed its own education and training needs both secular and spiritual. These needs were supplied in part through monastery and cathedral schools and their liberal arts curricula. By the time of Abelard (AD 1079 - 1142) reason was found useful in defending Church teachings. Reason consisted of syllogistic demonstration in dialectic and yes-and-no disputation and in this form, under authority of the

mysteries of faith, it begot the Science of theology. Science as syllogistic demonstration *per se* had been rehabilitated subject to revealed faith constraints. As an indispensable part of reason it attended to proofs of God's existence and is surrogately present in a coalescence of rhetoric and dialectic into logic. Some interest in experimental investigation of God's created natural world began to re-emerge with such scholars as Grosseteste (died AD c. 1252) and Magnus (AD 1193 – 1280) in the thirteenth century, continuing on into the fourteenth century with, for example, William of Ockham (AD 1287 – 1347), notwithstanding traces of such an interest being found in Gerbert (AD c. 946 – 1000) and Adelard of Bath (AD 1080 – 1152).

Aquinas (AD 1225 - 1274), in rehabilitating Aristotle's rediscovered works, made reason a necessary precondition for engagement with the mysteries of faith. Through reason, mankind might obtain objective knowledge, and when philosophy extended beyond theology, matters were settled by reference to Aristotle. Aquinas made theology the Science of God, the Science which illuminates the rules of natural reason, that divine gift from God. Syllogistic demonstration, ever necessary to reason, is named an intellectual virtue in the Greek sense, along with wisdom and understanding. Science as syllogistic demonstration serves wisdom which answers to the infused theological virtue of love. Generally defined, Science had become theology. Narrowly defined, Science had become the intellectual virtue of syllogistic demonstration in dialectic and logic within the confines of revealed faith.

By the middle of the fourteenth century, less than 76 years from the shadow of Aquinas, this high compatibility of Science and faith was weakened as scholars both sacred and profane explored Aristotle further and, as universities began to emerge and interest in experimental Science continued to grow, metaphysics and philosophy took their leave from theology, and reason tasted its first days of freedom from the constraint of the mysteries of faith. Science began its change back into syllogistic reasoning of the true from the false in the realm of experimental knowledge, that is, knowledge of sensation, intuition and reason. It once again proceeded from fundamental premises induced from unfettered experience. This estrangement of metaphysics from theology and Science, together with syllogistic demonstration's freedom to return to experimental Science and investigation of nature, is early

evidence of an excision of metaphysics from Science. This evidence is germane to enquiry demonstration of the plausibility of Thesis Proposition Statement 2. This beginning rift between metaphysics and theology, and syllogistic reasoning's return to experimental Science both temporarily enhanced theology's sway over Ethics.

Free now on its own terms to investigate the rich phenomena of God's creation—

<p>Thesis Proposition Statement (2) Dawning of the Modern Age is coincident with a conscious excision of Aristotelian metaphysics from scientific enquiry, Science ceasing to inform practical Ethics as reasoned moral activity and, in its new form as conditional fact, Science becoming valued in its own right for direct benefits it could bring to society and state.</p>

rainbows, moons, planets, hot springs, volcanoes and the like—Science in general, and experimental Science in particular, were drawn into developing appropriate methods.

From the time of Grosseteste (died AD c. 1252) to the time of Newton (AD 1643 - 1727) the Aristotelian syllogism progressively fell to new scientific methods developed to accommodate the return of experimental Science occasioned by social developments of the times. Induction and deduction remained then, as they do now, indispensable to reason in general, and Science in particular. Experimental Science had re-emerged and Science generally had become an art of practical applied Science in search of true causes in nature. Narrowly understood, Science became known by its doing as this was revealed in a series of methods culminating in Newton's rules for reasoning in Science. Science in this form is a substantial change which strains the esoteric-exoteric divide used in the enquiry—a condition I associate with, and consider symptomatic of, emergence of a new era.

Works by Bacon (AD 1521 – 1626) and Hobbes (AD 1588 – 1679) were to contribute substantially to setting Science free from theology, philosophy and Ethics. Bacon freed Science from Aristotelian metaphysics, Ethics, and theology but it was for Hobbes to free Ethics from theology.

Bacon developed a new method, an innovative new machine of Science. Science, now predicated on sense experience, strives for knowledge of the Laws of Nature derived through a method of rejections and exclusions which allows experimentally induced and tested axioms to be applied in deduction of new discovery. Science is an experimental activity which brings power over God's created nature. Science stands

alone from theology, Ethics and metaphysics, a development germane to the plausibility of Proposition 2. Science, newly independent in its own free knowing-doing domain, is taken as symptomatic of an arriving new era. Hobbes differentiated Ethics from Aristotelian type metaphysics and from theology and pronounced Ethics to be obedience to civil law, leaving theology and metaphysics to go their own respective ways.

Hobbes posits Science to be composition and resolution of facts about bodies which exhibit generation. Science proceeds through syllogism and the induction and deduction it permits in pursuit of ratiocination, that is, in search of addition or subtraction which constitutes generation. No part of human reason is divine and mankind may investigate God's nature without God's guidance in a *Polis* in which Ethics is free from theology. Hobbes' Science focuses on discovery of nature's laws and the operative power over nature these laws bring. Hobbes' Science, like Bacon's Science, stands alone in its own practical domain and severely strains this enquiry's esoteric-exoteric methodology. I associate these emerging Sciences, each with its applied method and new *Polis*, as indications of a substantial change coincident with dawning of a new era. Thus the validity of Thesis Proposition Statement (2) partly rests on the plausibility of this enquiry's demonstration of a trend towards independence of the new scientific disciplines from Christian theology, from Aristotelian type metaphysics and from Ethics. Nevertheless, demonstration of the validity of Thesis Proposition Statement (2) cannot be complete until questions about how Hobbes removed Ethics from metaphysics and made it, Ethics, the subject of civil law, are addressed. I complete this requirement in the next section.

Evaluation of Thesis Proposition Statement 2 Continues and Evaluation of Thesis Proposition Statement 3 Begins

Thesis Proposition Statement (3). Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

As earlier mentioned, Thesis Proposition Statements 2 and 3 share the key term Ethics.

In turning from Science in search of better explanations of the world of nature and

Thesis Proposition Statement (2)

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the human condition within it, Plato's dialogical Socrates reaches back to classical Greek virtues found in Homer and enshrines them in his ideal republic of ideas. Plato predicates mankind's moral

and intellectual condition on human soul. He links the principle of order or *kosmos* with best choice and makes this relationship a basic principle of practical Ethics. The dialogical Socrates' act of turning is interpreted to constitute an incremental movement from nature towards society, that is, a movement away from an Ethics of place predicated on a unified tribal behaviour required to allow mankind to extract its sustenance from its occupied totem habitat. It is also a return to an efficiency interpretation of virtue in the sense of a Greek good-at-what based on habitual behaviour, and a temporary stay to the moral interpretation of good which can be seen emerging in the writings of Aeschylus (BC 525 - 456).

The Socratic turning is also interpreted as a movement of *thymos*, the spirited part of the soul without which the virtue of courage is impossible, away from the ungoverned powerful courage of classical times, to the reasoned courage of Socrates. It is a small shift of *thymos* to the side of *nomos* as law and a big shift in mankind's ethical emergence from nature, and a shift away from absolute justice of the gods. In all, it is a complex movement which is not without its own internal contradictions. In the technical Ethics of the first republic of ideas, mankind's good-at-what as a technical virtue is happiness with justice. Mankind achieves its work through wisdom which discerns between the harmful and the unharmed.

Aristotle, like Plato, treats Ethics as an extension of soul. Desire, a faculty of soul, prompts mankind to act in order to satiate their passions. Again, like Plato, Aristotle employs a tripartite soul and a good-at-what technical usage of virtue in his discussion of Ethics. The work of the rational soul is carried out in the highest tier by its good-at-what virtues, which he names intellectual virtues. The rational soul may be scientific or calculative. Scientific reason and intuition singularly, or combined as philosophical wisdom, are the intellectual virtues of the rational scientific soul. Art,

in the sense of making things, and practical wisdom, are the intellectual virtues of the rational calculative soul.

The remaining tiers of the soul house its irrational elements. These tiers are its vegetative faculty which shares in no rational principle and is not served by virtues, and its appetitive faculty which is served by the moral virtues. The moral virtues such as honour, temperance, magnificence and liberality are states of mind and character predicated on correct adjustment of the passions. The moral virtues emerge when, through discerning choice, raw involuntary passions are tailored to correctly and justly fit the circumstances in which they arise.

The moral virtues are means between two extremes arrived at by discernment under the guidance of *kalon*, a combination of nobleness, fineness and beauty. The mean adopted is the discerned response to the situations at hand. There are no hard and fast rules and the irrational soul has no rational principle of its own. The moral virtues can only emerge through the office of practical wisdom, the virtue of the calculative rational soul. Practical wisdom differentiates clever action from virtuous action by providing the right rule. Moral virtue is the end and practical wisdom is the means to the end.

While practical wisdom's main work as an intellectual virtue centres on correct choice in everyday changing matters of mankind, family and state, it also liaises with philosophical wisdom and refers questions of the lower moral virtues to it. Philosophical wisdom serves contemplation of the unchanging natural beings,

<p>Thesis Proposition Statement (3) Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.</p>

mathematical beings and metaphysical beings. Philosophical wisdom is a higher intellectual virtue than practical wisdom. It is just this fall of reasoned moral activity as practical Ethics

in the form Aquinas rendered it, to Ethics as obedience to civil law as Hobbes rendered it, that confirms the plausibility of Proposition Statement 3.

Aristotle finds mankind's work to be happiness with justice and honour and carefully articulates each of these terms. Happiness is "the best, noblest and most pleasant thing in the world" *Nicomachean Ethics* I 1099a25 (Aristotle, 1926; 1952g, p. 344).

It is that which is sought for its own sake and towards which all of the pleasures of the soul flow. It is Plato's happiness of harmony of the soul but where Plato would have justice as the end of ends, Aristotle has justice done for the sake of happiness.

Justice for Aristotle can be general or particular justice. General justice consists of obedience to the law as virtue towards others under constitutions which serve the common good. Particular justice is either distributive or commutative. Particular distributive justice is equality and fair dealings by the state in its distribution of its resources and honours amongst citizens, and it is based on merit. Particular commutative justice is equality in exchanges citizens make with one another.

There is also political justice which consists of upholding natural law and rights. Natural law cannot be rescinded while natural rights are conferred by the state. Justice is bound by duty which differentiates it from the other virtues which are based on choice. Justice is done for another's good.

As explained in the opening paragraphs of this discussion on Aristotle's Ethics, the virtues may be moral, or they may be intellectual, and together they constitute a system of rational Ethics. Without *nous*, that spark of the impersonal divine one, Ethics, nor Science for that matter, are possible. All rational contemplation moves humans closer to the divine.

With the intermingling of Greek and Jewish ideas and the advancement of Christianity, rational moral virtues were transformed into absolute virtues of Christian faith. Faith Ethics replaced rational Ethics. Under faith Ethics nature first became a moral order in which no evil existed. Subsequently, the apostle Paul found sin in the flesh of mankind, a sin which infected nature more widely and from which mankind could escape only through Christ as *Logos*. Ethical act had now become the overcoming of absolute sin through grace and faith in a personal Christ. This condition is not without some very broad similarity to an Orphic condition of a fallen soul trapped in the flesh of mankind, discussed earlier on page 66.

Reason was gradually to return to the service of Ethics so that, by the twelfth century under the influence of Anselm (AD 1033 - 1109) and Abelard (AD 1079 - 1142),

Ethics became reasoned understanding of the religious truths revealed in the scriptures, and of church dogma, and adherence to those truths by the will's refusal to transgress Christian prohibitions.

In the light of the return of Greek learning to the West and the syncretisation of reason and faith under Aquinas (AD 1225 – 1274), Ethics once more became a sophisticated practice. The rediscovered Aristotle was folded into Christian understandings of cosmology and soul. Aquinas accepts that the contemplative life is of greater merit than the active life and that there are three intellectual virtues which he names theoretical wisdom or prudence, Science or syllogistic reasoning, and understanding or intellect. He accepts four moral Greek virtues, namely prudence, justice, temperance and courage and renames them cardinal or principal virtues. These cardinal virtues are mirrored by four divine cardinal virtues which might, under grace, be infused into humans in which case humans act for their own good but for God's sake. The cardinal virtues are made accessible in this manner: first, as mentioned, by infusion of grace, and secondly, by infusion of three theological virtues faith, hope and charity or love, which lead to God. Love captains the theological virtues, wisdom captains the intellectual virtues, and prudence the moral virtues.

As captain of the moral virtues, prudence acts in the manner of practical wisdom and officiates over relationships between individuals thereby informing justice. In adjudicating over the internal passions prudence informs temperance and fortitude. Temperance is that virtue which emerges when prudence prevents reason's fall to concupiscible passions. Fortitude emerges when prudence prevents reason's fall to irascible passions such as fear, and dislike of work.

Human moral virtue thus understood becomes a reasoned habit of the appetitive faculty which results in the good use of free will. The good of the will, its end, is happiness, and the will, an intellectual appetite, has a contingent dimension fixed to happiness as its end, and a free choice dimension which chooses among means to the fixed end. Only when divine vision reveals God as mankind's end in happiness can mankind reach the happiness of beatification.

Just as reason partakes of the first principles of understanding, so too will partakes of the precepts of natural law which it grasps through *synderesis*. *Synderesis* is at the heart of Aquinas's Ethics. It is that process which occurs when the free will, under the contingent will's necessary adherence to happiness, is guided by prudence, which

Thesis Proposition Statement (3)

Dawning of the Modern Age is coeval with a challenge to practical Ethics as reasoned moral activity by Ethics as active obedience to the law of the state.

grasps the first principles of natural law and reasons from them, through syllogistic demonstration, to correct choice conclusions. To grasp the first principles of natural law is to grasp

God's presence in nature. *Synderesis* is the highest activity of the moral sense. Reason, which grasps the first principles of understanding, informs will. Without *synderesis*, mankind cannot find the perfect happiness which can only exist in one with God. Without *synderesis* mankind must, as in Greek rational Ethics, labour with their own moral virtues, from experience, and without recourse to hard and fast rules. The validity of Thesis Proposition Statement 3 thus rests in part on demonstration of a demise of practical Ethics as reasoned moral activity—irrespective of whether the reasoning was through *synderesis* via the will, or through practical wisdom via reason's partaking of the first principles of understanding and application of these in the calculative soul under the aegis of philosophical wisdom.

Aquinas' syncretisation of reason and faith was to fracture. Duns Scotus made the will spiritual and higher than reason. Intellect and sense are received from without. The will is its own cause and beatitude is obtained through the will's partaking of grace and love, not reason's partaking of them. Under Duns Scotus (AD c.1270 – 1308), theology does not need reason in that it, theology, goes directly to perception of transcendental principles. Science, metaphysics and philosophy became further estranged from theology. Under Ockham (AD 1280 – 1349), the will was pronounced able to understand the scientifically indemonstrable and under Buridan (AD c.1300 – c.1358, through free will's choice, Ethics became mankind's responsibility for its own actions. Acts of will, rather than the presence of reason, now separate mankind from the beasts, and Ethics is active adherence to God's will revealed in the scriptures, occasioned by the will's adherence to that revelation.

Bacon (AD 1561 – 1626) maintained a conventional link between theology and Ethics, even in the presence of his substantial new method of Science and his Architect of Fortune innovation in Ethics. He would study Ethics inductively but investigation of matters transcendental as they were understood before Kant, and of the substance of divine soul, was not part of Science. As discussed respectively on pages 494, and 503 to 505, Bacon separated both metaphysics *qua* final cause, and theology *qua* sacred theology, as opposed to divine philosophy, from Science.

In Bacon’s moral philosophy, Ethics is the doctrine of the will in search of the good understood as the welfare of the individual and society. This shift of emphasis is, for

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its era, a slight movement of the focus of Ethics away from God and towards society and might, on another occasion, be interpreted in terms of an enigmatic qualified variation on a theme of *physis* to

nomos genre, an opportunity not pursued in this enquiry. I know of no analysis yet taken of similarities and differences within a series of such shifts possibly present in the history of ideas.

This shift to Ethics *qua* good as welfare of individual and society strains, rather than breaks the relationship between Ethics and theology. But the focus is on society, and ethical choice is the practice of directing the will to make the best choice for individual and society. Bacon’s new Science had no part in informing Ethics in the manner expressed in Thesis Proposition Statement 2. Human rationality and the precepts of morality are God-given and to proceed ethically is to logically direct the will to make the correct choice between competing duties. Ethics has two dimensions—an absolute model or template of the good, and a practical derivation of the rules for governing human nature in attainment of that absolute model or template of the good. Bacon pronounces the appetite for absolute good native to the human mind and all existing beings.

In realising this appetite mankind acts for self and for community. For self, it actively seeks self-preservation and passively seeks perfection, perfection being the higher order of the two. For community, the realising principle is duty to society,

duty being to a mind well-formed towards others what virtue is to the mind well-formed in itself. Duty is the governing of oneself not the governing of others and Ethics is a preparation for politics. Bacon makes Ethics a practical affair and while providing little guidance outside of his aphorisms and general essays by way of detailed working rules for its attainment yet provides relaxations to Philosophical Ethics by way of concessions to mankind in *Politique* Ethics mode. As mentioned, while the King in New Atlantis desires to join humanity to policy, there is no hint of the *politique* in him. Yet policy *per se* has possible *Politique* Ethics flaws evidenced by Merchants of Light concealing their country's identity under the names of foreign flags when sailing on fact finding and technology collecting missions, and by disguising techniques used for managing shore leave for Bensalem's own vulgar mariners under the names of other nations. In Bacon's *New Atlantis* (F. Bacon, 1952a) mankind wins welfare through power of knowledge over nature, a power rightly managed. Again while the focus of Bacon's Ethics may be shifting from God as creator of the forms, towards the good of man and society, God is still in Bacon's greater machine.

It is Bacon's erstwhile secretary Hobbes (AD 1599 – 1697), who, by breaking the

Thesis Proposition Statement (2)

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Thesis Proposition Statement (3)

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link between Ethics and theology, provides complementary evidence which attests to the plausibility of Thesis Proposition Statements Propositions 2 and 3. Whereas Hobbes purports to recognise God as the creator, he plays down His presence as divine reason in human investigation of

created nature. Nor does Hobbes allow infusion of virtues. Mankind is no longer required to enlist theology or metaphysics in order to discern how to be Ethical. In both the esoteric and exoteric Leviathan, to be Ethical is simply to obey statute law.

This new prescription of Ethics substantially challenges the enquiry's esoteric dimension of Ethics because now, to be ethical, means to follow laws which are of mankind's making, using reason which is, beyond innate rudiments, substantially of man's own making and experience, rather than of the divine. In their natural state

mankind is rapacious and evil and in the artificial state occasioned by obeying the law, peace might be achieved and welfare enhanced. Until the time of Hobbes, the divine, whether pagan or Christian had been a substantial presence in Science and Ethics and I associate its beginning estrangement from these domains with the emergence of the a new era. On this basis Thesis Proposition Statements 2 and 3 are rendered plausible and discussion on plausibility is now closed.

Having addressed the plausibility of Thesis Propositions 1, 2 and 3, I summarise the main ideas flow of the enquiry. Under Platonic political philosophy mankind gathers esoterically in a happy and just city of ideas informed by classical Greek values, in which city, truth informs reason. Science, which informs truth, is the-that-which-can-be-no-other, and occurs through receiving the forms and beholding the one, a process which also facilitates learning through reminiscence of the forms. Ethics is wisdom discerning between the harmful and unarmful and virtue is some kind of knowledge. In turn, according to Aristotle, mankind gathers in a cognitive natural *Polis* in which Science, occasioned by divine reason, informs Ethics understood as the rational pursuit of happiness with justice and honour. Science is syllogistic demonstration. Ethics, in esoteric dimension, consists cognitively of right reason and just desire appropriate to circumstances in play. After Augustine (AD 354 - 430) and under Greek political philosophy transformed into medieval Christian political philosophy, mankind again gathers in a cognitive city of God predicated on beatification achieved through grace and the will's surrender to infused intellectual and moral virtues under a process of *synderesis*. In the esoteric city of God divine reason informs the will and Ethics, in esoteric dimension, is a state of unwillingness to transgress Christian prohibitions. Science, at first irrelevant, gradually returns as syllogistic reasoning in matters of theology, other than in the mysteries of faith. Emergence of a new age is conjectured coincidental with a transition from the political philosophy of the city of God, via a New Atlantis, to a political philosophy of a Leviathan in which mankind gathers in an artificial *Polis* predicated on a surrender of vanity and selfishness to fear of death, in which divine reason is not part of Science, in which Science is free from theology and Ethics, and in which Ethics consists of a mind to obey the law in return for a state of peace. Knowledge brought

forth by Science is valued as that which occasions power over nature rather than a condition or state of which virtue might consist.

Perhaps a most telling indication of an emerging new political philosophy might be discerned from a quickening segment in the journey of the forms themselves, from their ideal template existence in the Platonic *Polis*, to Aristotelian formal cause in earthly beings, to the *Logos* in Christ and finally to Laws of Nature themselves, independently discoverable through mankind's own learned and experiential reason, without God's permission, in a *Polis* predicated on dominance over nature, mankind's mandate to investigate nature on their own terms arriving relatively in something a rush.

I now turn to integrating discussion of original contribution, minor aim findings about the fact-value divide, and possible further contributions philosophy might make.

ORIGINAL CONTRIBUTION

The enquiry makes an original contribution in two ways. First its methodology is new and different and generates its own criterion for discernment of a new era in development. Second, it employs an ideas update writing strategy also suggested by enquiry method, applied separately from it, but ancillary to it. This ideas update

Geography of Mind?
For example, all of the hierarchies constructed to help explain Bacon's divisions of knowledge in Chapter 8, if joined together, constitute a geography of mind. Likewise the information in the text box on page 540, if converted into a chart, might better represent another geography of mind. Similarly the content of Table 23 on page 230 might form part of Aristotle's geography of mind, if one dare be constructed from the five components of soul he names—nutrition, perception, cognition, imagination and desire—and interrelations amongst them, and one for Aquinas drawn up on the basis of interrelationships amongst the virtues outlined on page 416, and explanations of synderesis and infused cardinal virtues explained in the accompanying text. Hobbes has his Bacon-hierarchy equivalent and so too Kant and so on up to neuroscience's ongoing mapping.

writing strategy—used (a) throughout the enquiry to link Pre-Modern geography of mind prequel understandings of human condition to neuroscientific understanding of human condition based on self coming to brain making mind, and (b) in Chapter 8 by employing Bernard Shaw (AD 1856 - 1950), Robert Kennedy (AD 1925 - 1968) and Barack Obama (AD 1961 -) to progressively re-situate Bacon's innovative *Politique Ethics* in intermediate and present day ideas settings for comparison purposes—once adopted generated new thoughts which, in the case of geography of mind linkages, led

to tentative conclusions about how, through alliances with neuroscience, philosophy

might maintain and enhance the efficacy of its own contribution as well as that of neuroscience, and perhaps redress something of a Cassandra condition philosophy might be conjectured to be enduring. This geography of mind linking, also unplanned as it was and gradually intruding in its own way during articulation of the minor aim as the enquiry progressed, and low key as it is, accesses neuroscience, including criticism of it, through the works of Damasio (1995, 1999, 2010) with signposting along the way by others (Edelman, 2004; Everson, 1996; Lear, 2001; B. Oliver, 2012; Oscar-Berman, 2004; Searle, 1997; Ubersax, 2012), that is through a very thin sample. It and the mainly Shavian updating of Bacon's Ethics in Chapter 8, combined as a group and articulated under the umbrella of the minor aim, are considered the lesser of the two claims for original contribution. Conclusions based on these updating strategies, although considered plausible and important, are offered as tentative conjecture in the nature of ideas in progress, inviting further inspection of their potential as markers for future areas of research. These update strategies serve the minor aim of the enquiry through what may be described as an all-philosophy or macro approach, as differentiated from non-pejoratively termed micro approaches, those predicated on various perspectives, iconography, linguistics, papyrology, archaeology and the like, or serving one of a number of possible foci, for example exegesis of happiness, or love, or morality, which have informed other parts of the enquiry.

Beginning in the next section I discuss each of the two claims for originality in turn, that is (a) construction and application of a new method in the first case, and (b) low-key application of ideas update strategies as a group, in the second case.

Original Contribution Based on Development and Application of a Methodology

Given wide definition of society to include both *Polis* and P(p)olis so that by default, within the foundational meanings attributions of this enquiry, society includes Ethics, then studies of Science and society germane to the time span of the enquiry may be classified according to the ways in which they approach their goals. Some such studies focus mainly on Science and Ethics at the expense of society, others on Ethics and society at the expense of Science and yet others on society and Science at the expense of Ethics. Some, in similar combinations, focus on technology rather

than Science. Some include all three areas, others focus on any two of the three, within particular identified framing perspectives, or in other ways.

Thus for example, some take a historical perspective by chronologically focussing on say either scientific theory or technological innovation or scientific method themselves, with discussion of their possible emergence from society, or contributions to it, allocated varying degrees of sidelight (A. C. Crombie, 1952, 1995, 1996; Losee, 1972; Whewell, 1837). Other such studies appear to integrate Science and society more substantially (Pullman, 2001) and/or reach more sharply to ideology and politics (Bernal, 1965), or alternatively focus on say Science, technology and society in a particular era or time span (A. C. Crombie, 1952, 1953; Merton, 1970; D. Stewart, Mackintosh, Playfair, & Leslie, 1835). Yet again other studies focus on a particular scientific concept for example the atom and trace its history, sometimes from a narrow perspective say of structure and performance (R. A. Smith, 1856) and sometimes within a wider history of ideas context (Ede & Cormack, 2012). Likewise, similar contributions are made from specific Science perspectives, mathematics say, or natural philosophy *qua* physics, or magic as quasi-Science (E. Grant, 2007; D. Smith, 1958; Thorndike, 1923a, 1923b). One particular contribution, Berkeley's *Siris* (Berkeley, 1871), a study of properties of so-called tar-water, links a theory of spiritual cause of substance with Plato and Neoplatonism, by drawing, inter alia, on botany, chemistry, physiology, optics and mechanics of his time, as well as ancient metaphysics and theology of mind and philosophy of fire over the ages. Other scientific studies emerge directly out of philosophical-ethical concerns. For example Berkeley's *An Essay Towards a New Theory of Vision* (1820) is likely informed in part by its author's interest in Platonic light as God's substance, such a dynamic continuing beyond the time span of the enquiry into the nineteenth century—innovation in mathematics for example emerging from work by Euler (AD 1707 – 1783), Laplace (AD 1749 – 1827) and Lagrange (AD 1736 – 1813) within a general endeavour to scientifically explain perturbations in God's otherwise perfect clockwork universe (Andrianov & Manevitch, 2002, p. 139; C. A. Wilson, 1980, pp. 109-304). Studies of Ethics and society also take various forms. Some approach their subject from a history of religion perspective (K. Armstrong, 1994; González, 2010a, 2010b; Jevons, 1906) other perspectives being atheism (R. Dawkins, 2008), critical

historical moral philosophy (MacIntyre, 1998/2005), *Ethics per se* (Irwin, 2007), chronologically ordered stand-alone essays on moral and political philosophy (L Strauss & Cropsey, 1987; Wolff, 2014) or natural history (Tomasello, In Press) which latter work, if the advanced publication proves accurate, may well be compatible with Cambridge Ritualist interpretations of emergence of ethical society from nature. *Beyond Good and Evil* (Nietzsche, 2014) reaches to Ethics and *Polis* in its own inimitable ‘will to power’ way while Aphorisms 1 - 92 of Bacon’s *Novum Organum* (F. Bacon, 1900c, pp. 315-349) treats of efficacy of scientific method. Studies of Science, Ethics and *Polis*, and relationships among them, are also available in the form of histories of philosophy, religion, dogma and the like, these being written from various perspectives and in different styles (Adamson, 2014, 2015; Blakey, 1850; D’Onofrio & Studer, 2008; Eliade, 1981; E. Grant, 2007; Guthrie, 1965; Harnack, 1997; Hegel, 1892-96/1995; Reale, 1990; Russell, 1945; Schaff, 1997; W. Turner, 1903/2012; Ueberweg, 1889; Weber, 1897/2012; Windelband, 1914) which often, but not always, nor neither necessarily uniformly, appear to make links between Ethics and society slightly more than they do between Science and society.

Works like those cited in the previous paragraph, and other formative contributions with more specific and targeted focus mentioned elsewhere throughout the enquiry, provide a wealth of information, insight, methods, creativity and scholarship germane to the time horizon of the enquiry, and beyond, but no one of them provides a sufficiently singular, cogent and stringent methodology which might be replicated for the purposes of this enquiry and achievement of its main aim. The methodology constructed from first principles to solve this problem of lacuna constitutes an original contribution because, inter alia, its detection of an emerging new era is predicated on (a) unchanging foundational attributions of key terms meanings and relationships among them, (b) overt methodological separation of the unchanging from the changing or nuancing, (c) esoteric and exoteric dimension understandings of enquiry key terms informed by meanings usage of the words esoteric and exoteric different from previous well established usages of them (d) a ‘representative firm’ selection and naming of premodern prequel political philosophies, (e) measurement of esoteric key terms meaning through consistent application of transform procedures

and processes of chapeau questioning of three vectors of esotericism inherent in each key term, the chapeau questioning being based, in so far as it might be, on epistemology before ontology, (f) quickening exhaustion of esoteric/exoteric divide as a marker of an emerging new era, and (g) construction of multiple discipline and multiple voice exoteric backgrounds to frame and time-mark its esoteric ideas progress, for example, historic milestones and/or works of art, inventions, notable particular speeches and the like.

The surrogate indicator of a new era—quickening exhaustion of the esoteric/exoteric divide—is a product of the method itself, a something which emerged from method's internal procedures and processes during application, and not foreseen at the outset, but adopted once realised, and in a sense it is in some degree different to, and/or a step removed from, arbitrary and/or reasoned imposition of a criterion. It is an indicator which emerged from a form of proacting logic within a method which became a kind of living instrument itself in that it also prompted writing strategy solutions to help countervail interpretive difficulties when they arose, of which more later in the next section. As explained on pages viii to xi in the preface materials, the enquiry employs, *inter alia*, a transform measure of key terms meanings nuance. Furthermore there is no suggestion that the derivation and use of this part of enquiry method is anything beyond a containment of the words-meanings conundrum and certainly not a solution to it because the method is applied to translations of foreign language works and is thus itself dependent on the quality of discernment of original nuance and/or connotation of various individual words by translators in the first place, and their English language wording of it in the second place, notwithstanding the next link in the chain between reader and text elsewhere addressed within the text box on page 10 through insights provided by James (1892, p. 153), none of these issues being a problem for this enquiry alone. Nevertheless, the method so constructed attempts to bring a consistent, transparent and manageable methodological approach to the enquiry, and on the brighter side it is difficult to deny that for a long time now humans have been able to agree on word meanings and exchange qualified construct in terms of them.

Enquiry findings are thus applicable within a boundary rendered expansive by virtue of a generality of denotative key terms attributions and the ideas hierarchy they support, yet subject (a) to the constraints of a three-vector measure of esotericism and its attendant ‘representative firm’ construct earlier explained on page xi, (b) the singularity of quickening exhaustion of esoteric/exoteric divide as a referent for emergence of a new era, (c) a problem of hindsight *qua* an ever present human condition requirement of each generation’s having to discuss historical events and writings in words containing meaning and emotional content loaded in their own generation, and (d) that ever present problem of the knowing-being enigma underlying epistemological formulation of its chapeau questions. But on this last constraint, who yet has found a way to introduce themselves to themselves each waking morning without an involuntary presence of body, that is, first of body housing mind’s knowing, and then of other bodies in apparent relative proximity to themselves.

I now turn to the second and lesser claim for original contribution.

Originality Based on Application of Ideas Update Strategies Suggested by the Enquiry Method
Just as the enquiry measure of a new era in development emerged from the principles of enquiry method *per se*, so too as mentioned earlier on page 606, did ideas update strategies which help distinguish between different individual previous-era innovations in Ethics and in explanation of prequel geographies of mind, by bringing them respectively to common bases for comparison purposes. These update strategies are effected through juxtaposition processes in which Bacon’s *Politique* Ethics in the one case, and prequel geographies of mind in the other, are respectively contrasted with one same modern or postmodern base referent as the case may be, cited or contained in boxed text accompanying those articulations. As explained, the base referent used throughout the enquiry in the case of geography of mind prequels is one predicated on neuroscience (Damasio, 2010). Those used in Chapter 8 to progressive re-situate *Politique* Ethics from the seventeenth century to the twenty-first century are a play by G. B. Shaw, and speeches by Bobby Kennedy and Barack Obama (R. Kennedy, 1968; Obama, 2015; Shaw, 1917). Writings selected for update purposes were chosen with a focus on ideas content rather than ideology which may

well be drawn from and/or attributed to the words if searched for. I discuss the case for Bacon first.

To wit: different understandings and usages of terms can sometimes be discerned

Reading Caveat 13

Some of Damasio's work (Damasio, 1995, 2010) has been used in a simple manner as a common contrasting basis for comparison of, and differentiation between, geographies of mind sequentially encountered as the enquiry progressed. Works of some others (Edelman, 2004; Freud, 1957-1981a, 1957-1981b; James, 1892, 1902, 1910, 2009; Oscar-Berman, 2004) have been used for similar purposes but to a lesser extent. However nothing further is made of this usage and certainly no detailed critique of the works used is implied. Similar conditions prescribe the use of works by Bernard Shaw, Robert Kennedy and Barack Obama (R. Kennedy, 1968; Obama, 2015; Shaw, 1917) for updating Bacon's *Politique Ethics*.

For the record, while some Presocratic writers, may, like Damasio, involve atoms in their explanations of mind and consciousness, others do not. Yet ancient and later attempts to explain consciousness and mind frequently appear to jump out of Damasio's work. There is absolutely no suggestion that Damasio may have borrowed such possible presences but rather that compatible findings to similar problems may be inferred emerging from different approaches to those problems. Such intrusive involuntary associations are not investigated in this enquiry but are intriguing. While the decisions to use Damasio and others as bases for comparison of different era explanations of phenomena and/or to update *Politique Ethics* flowed from use of the method constructed for enquiry purposes, in hindsight, the decisions might just as easily emerged as nothing other than a continuation of the enquiry process of time marking the esoteric against exoteric events, in these cases, particular theatrical productions, specific cases in neurophysiology, celebrated speeches made, or official United Nations General Assembly Presentations. However the decisions were generated coincident with thinking about method, not when thinking about exoteric time marking of the esoteric.

from their contexts and definitions. Terms common to say Aristotle and Galileo—terms like quantity, number, quality, place, time size, shape, motion, rest, position, and state serving Aristotle's categories and Galileo's primary and secondary qualities being good examples—may validly lead an enquirer into different era understandings of Science and *Polis* less dependent on, but impossibly never entirely free from, meanings loaded through own-life somatically marked experience. In other cases context alone may cloud workable discernment of difference.

For example, comparison of a *politique* understood in terms of ethical discretions/indiscretions Francis Bacon permits them, with a twenty-first century politician in Australia say, understood in terms of media scrutiny and condemnation for exercise of some of those same ethical discretions/indiscretions Bacon earlier countenances, may generate a jaded twenty-first century *quelle difference* so-what's-new impediment to assessment of the possible significance for its time of Bacon's innovation,

that is of his step outside of Philosophical Ethics made through his formal articulation of *Politique Ethics*. The enquiry method itself exposed such problems and pointed a way to the ideas update device used in Chapter 8 to progressively situate Bacon's seventeenth century innovation in different time, ideas and attitude settings, for evaluation purposes. I claim that the method of reaching back to Bacon

in the manner exemplified in parts of Chapter 8 contains a small element of novelty, newness and original contribution and adds to the ways in which the significance of Bacon's formalisation of *Politique* Ethics might be assessed.

I turn to discussion of the second update strategy, namely that used throughout the enquiry to provide a common basis for comparison of various geography of mind prequels. Such geographies or compartmentalisations of mind surfaced early in esoteric measurement of key terms meaning but over historical time they are clearly

Neuroscience: Proceed with Caution

Moreover, I realize that the study of consciousness has expanded so much that it is no longer possible to do justice to all contributions being made to it. That, along with issues of terminology and perspective, make current work on consciousness resemble a walk through a minefield. Nonetheless, at one's own peril, it is reasonable to think through the questions and use the current evidence, incomplete and provisional as it is, to build testable conjectures and dream about the future. Damasio, A. (2011). *Self Comes to Mind: Constructing the Conscious*. (p. 6). Random House. Kindle Edition. (Damasio, 2010, p. 6).

predicated on differing underlying bases—divine reason plus variant categories of punished soul, divine reason plus experienced intuition plus natural endowments, various intellectual and lower moral virtues, God in all, infused values, inherent capacity for reason honed by experiential learning and the like. Irrespective of their differing bases, I

find all of these attempts at explaining human condition in terms of cognitive compartmentalisation of brain/mind activity informative, insightful and relevant in terms of their introspection and applicability. Early twenty-first century investigation of brain made mind and self coming to mind has its own geography predicated on electro-chemical and evolutionary bases and from time to time in the enquiry, the different geographies of mind were given an ideas update for comparison purposes by referring them, as earlier explained, to rudiments of electrochemical geography as revealed in the work of Damasio (2010) with brief signposting along the way by others (Edelman, 2004; Freud, 1957-1981a, 1957-1981b; James, 1892, 1902, 1910, 2009; Oscar-Berman, 2004). This simple decision to ideas update various geographies of mind to a common Damasio base, in turn, generated ideas about possible new horizons for philosophy and lead independently within this enquiry, but as it now appears, a little later than some others (Churchland, 1986, 2002, 2011; Flanagan, 2009; Goldman & de Vignement, 2009; Prinz, 2007; Schroeder, 2004), to considerations of philosophy and neuroscience. Of those cited in the last sentence Patricia Churchland is accredited with the 1986 formalisation of neurophilosophy, the others being subsequent examples of those micro approaches mentioned earlier

on page 607. For example Flanagan examines the neurophysiology of happiness,

Behind the Text: Why Neuroscience Before Psychology or Psychiatry is Chosen for Update Referent Purposes

Post-Modern psychology's wider custodianship of pure-Science investigation of soul *per se*, *psyche*, brain-made mind and self, all of these words signifying present day inheritance of that procession of contenders from that reincarnating wandering pilgrim forwards, is likely challenged by its own preoccupation with positive Science, measurement of human values through statistical analysis of simple scale surveys of surrogate measures of value, its changing weighting towards applied research in industry under profit maximisation conditions or in the service sector under dollar value measures of efficacy, and its underdog position to psychiatry credentialed to reach to prescription of clinical medicine. Such shaping trends are not dismissed as lacking utility, nor is psychology arbitrarily dismissed on such bases. The claim being made is that from a point of view of pure research into soul-psyche-mind and human values, and fully acknowledging that some psychologists are among those at the forefront of brain-makes-mind research, psychology may nevertheless be verging on that kind of ineffectualness associated with market failure. In turn, psychiatry as a professional doctrine, again from a perspective of pure research into brain-made-mind issues and again with supportive caveats about its worthwhileness, may also have a relatively short or compromised or asymmetrical custodianship on pure research aspects of soul-psyche-mind and human values, in that its now five-yearly reviews of its working manuals (American Psychiatric Association, 2013; World Health Organisation, 2015) may be leading it down a Duns Scotus path of definitional sub-division so complex as to further cloud and compromise diagnosis and/or crowd out longer term pure speculative research about root causes in favour of its yet worthwhile focus on sought after relief of symptoms through prescription of helpful, effective and acutely needed drugs some of which, admittedly are sometimes plagued by side effects. Relative to neuroscience, when viewed from a multi-discipline perspective, psychiatry and psychology are largely closed shops.

Neuroscience, created as a name by Otto Schmitt in the early 1960's (Adelman & Smith, 1998, p. 10; Oncley, Schmitt, Williams, Rosenberg, & Bolt, 1959, passim) and formalised as a discipline with the establishment of the Society for Neuroscience in 1969 is an expanding discipline which reaches to, and admits, interdisciplinary perspectives in research into brain, nervous system and human behaviour. By virtue of its physiology content neuroscience now claims in hindsight a heritage beginning with Ptolemy's *Optics* (C. Ptolemy, 1996, pp. 63 - 229),—Ptolemy (AD 90 - 168)—and continuing on to and past Ragnar Granit (AD 1900 - 1991) and his work on the bioelectromagnetism of the retina (Creed & Granit, 1933, pp. 419 - 441; Granit, 1933, pp. 207 - 230; 1946, pp. 45 - 53; Granit R & M., 1937, pp. 239 - 256). In the years between Ptolemy and Granit some of those claimed contributors are names known in different ways in philosophy—for example Thomas Hobbes for his sinews and machine analogy in *Leviathan* (1839b, p. ix), John Locke (AD 1632 - 1704) for his mind as white paper written over in the ink of experience analogy in his *An Essay Concerning Human Understanding* (Locke, 1825, p. 51), Thomas Reid (AD 1710 - 1796) *An Inquiry into the Human Mind on the Principles of Common Sense* (Reid, 1813, 1823) for his championing of common sense over Berkeley's imagined idealism, David Hume (AD 1711 - 1776) for his *Treatise of Human Nature* (Hume, 1739) and its portrayal of science based on human nature and association of ideas, Kant (AD 1724 - 1804) for his pure reason as a product of innate cognitive patterning activity (Kant, 1896), Thomas Brown (AD 1778-1820) for his muscular system as an organ of sense *Lectures on the Philosophy of Human Mind* (1830, pp. 138, 150 - 175), John Abercrombie (AD 1780-1844) for his case studies *Pathological and Practical Researches of the Brain and the Spinal Cord* (1828) rather for his more philosophical treatments of brain and mind under the titles *Inquiries Concerning the Intellectual Powers and the Investigation of Truth*. (1849) and *Philosophy of Moral Feelings* (1859), William Hamilton for his criticism of Reid and Stewart's versions of common sense philosophy (W. Hamilton, 1852), Descartes for his work on vision and his conjecture that *une petite glande* H is instrumental in communications between body and mind *Traité de l'Homme* (Descartes, 1908, pp. 119 - 202), George Berkeley for his *Essay Towards a New Theory of Vision* (1820), and Francis Bacon for his *Novum Organum* Bacon, (F. Bacon, pp. 368 - 476) and its content on method.

A perusal of the works of those named in the preceding paragraph reveals (a) that their admission to neuroscience from a single discipline perspective, either knowingly or unknowingly, is an admission to the fold of almost as many uncorked genies of philosophy, and (b) with the exception of Bacon and Hobbes those named fall outside the time frame of this enquiry. Nevertheless philosophy is in the neuroscience machine and has some powerful questions to ask. As the text reveals beginning on pages 619 other contributors who do fall in the time duration of the enquiry also provoke substantial questions.

Prinz that of emotion or of moral conscious self, Schroeder that of desire, Goldman whether social cognition is embodied or not. Patricia Churchland's 2002 work examines neurophysiological bases of soul, will and the like—no more heaven, no more hell, consciousness gone when the body goes, no more “spooky” stuff (ibid., p. 2)—and her 2011 work examines a neurophysiological basis for morality. Recent works by Prinz focus on cultural and emotional shaping of mind, and attention and

experience (Prinz, 2012, 2015). Such approaches are consistent with

neurophilosophy as a discipline applying neuroscientific discovery to core issues of philosophy, as differentiated from philosophy of neuroscience which tends to question methodological issues in neuroscience from philosophy of science

General Caveats Qualifying Use of Elements of Damasio as a Base Referent
General caveats govern the use of neuroscience as a base referent. Thus a choice of neuroscience in general and Damasio in particular as a common basis for ideas update carries no covert opinion about the superiority or otherwise of neuroscience's ability to cross the positive-normative divide by providing explanations about human consciousness and questions of morality and human value. Nor does it necessarily demolish utility and applicability of geographies updated, or infer their total obsolescence, or for that matter infer that everyday thoughtfully wordsmithed explanations of electro-chemical geography of mind in respect of how human ethical and social problems might be resolved are more effective, or less effective, than those provided by some of the geographies so-called updated. Nor do juxtaposition quotations chosen for the purpose purport to represent or carry a full explanation of Damasio's work or suggest that neuroscience has not attempted workable answers to some of the questions asked. Neuroscience does provide its answers, both in terms of positive Science and value laden words, Damasio's work being chosen, inter alia, for its attempt to elucidate a unified neuroscience explanation of human consciousness in terms of Science and such ordinary value laden words as well.

perspectives. Churchland's 'silent spring' for received metaphysical philosophy aside, the examples of micro approaches cited above in this paragraph are, while indicative of rich, copious and progressive research in neurophysiology, also serendipitously supportive of enquiry caveats notifying that questions, both specific and general, soon to emerge in the next section from the macro philosophy dimensions of this chapter, may well appear premature, irrelevant or even incredulous. These caveats, which appear in the next headed section, not in the text box on page 616, are given on the basis that, in spite of advances made in neuroscience, there is a long way to go before the electro-chemical bases for happiness, love, will, bravery and the like are known and integrated into a holistic understanding of human condition. Yet in

the fullness of time such questions as those asked in the next headed section may appear a better fit and considerably more plausible than they might presently seem to be.

In particular, the whole update mechanism, that is the bringing of prequel geographies of mind to an electrochemical base for comparison purposes is, like its index number equivalent in economics, compromised by slight mismatch of regimen commodities—in this case, sensation, perception, reason, passion, imagination—between each prequel basket and the other, and between each prequel basket and the base or neuroscience basket: strictly, a Granny Smith apple in one basket is not a Jonathan in another basket, is not a Bloody Plowman in another basket. However, a mismatch is present in the prequels case mainly because, while there is considerable consistency of regimen basket commodities across the ages—imagination, reason,

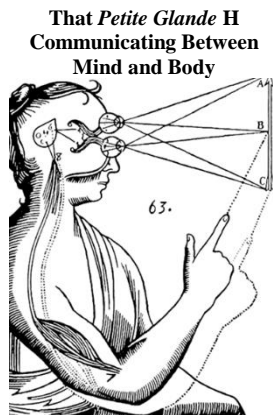
passion and the like earlier mentioned—such, as mentioned on page 614, is not always the case for the bases on which those regimen commodities are predicated, even though there are some similarities. Thus if the update mechanism is to work in the manner applied in this enquiry it is to work at a general level for broad comparison purposes only. Perhaps explaining a prequel problem of philosophy by analogy to index number theory in this minor way is pushing interdisciplinary thinking a little too far, that is to say, analogous reasoning by way of craft construct is a little questionable, but then Plato employed something like it on a much grander scale in his skills explanation of virtue, and so too Heidegger and Arendt, perhaps not so successfully, in their respective attempts to make *phronesis* a foundational ontology of human existence or interpret it as political action *qua* prudence in a public domain setting.

Nevertheless, I continue discussion of originality of content in the next section under the umbrella of the minor aim which, inter alia, as mentioned, addresses contributions philosophy may make to ongoing study of the fact-value divide, human condition and Polis/P(p)olis.

**Discussion of Original Contribution Continues.
Discussion About the Fact/Value Divide and Further Contributions Philosophy May Offer
Begins**

What questions then, as claimed in the last paragraph in the text box on page 615, might a liaison between philosophy and neuroscience engender? From Locke and Berkeley, who will write the electro-chemistry of the blind man made to see and identify the dominant domains involved, their rank order and/or the ordinal/cardinal nature of that order, or their matrix form as the case may be; from Reid, Stewart, Thomas Brown and William Hamilton, what are the molecules in the electro-chemical strands of so-called common sense, how do these strands impart so-called common sense its function including its judgemental intuition in mind, and by what routes and processes do conscious emotions and feelings raised through organs common to sense communicate with once mindless homeostatic control explained otherwise than through chemical flows and/or separate-yet-joined domains of mapped experience, that is, explained in ethical or moral human value terms, what kind of common sense and emotional intuition might emerge from excessive hours

spent in avatar-land; from Hobbes and possibly Kant, what is the origin and electrochemistry of innate reasoning ability and/or pure pattern making structure and



Source: Figure 33 from *Oeuvres de Descartes*, Volume XI. (1908). Paris: Léopold Cerf. (C. Adam & Tannery, 1908, n. p.). This figure and others like it are at the end of the book on unnumbered pages and were drawn by illustrators after Descartes' death.

after that what are the implications in human values and human condition terms; from Descartes, well then, how does self come to mind, and well then again, does not Aristotle's treatment of Sophia, phronesis and techne well frame embodied cognition, or for that matter my own I-thinking-amness-and-amness-calling-forth-I-ness go a long way too, and from Bacon and others, myriad questions about validity of method.

Again, neuroscience has its answers, impressive answers too, given in terms of a short cut of chemicals (Damasio, 2010, p. 274), of explanations of cell structure, of claims of involvement of both brain and other body structures in making of mind and emergence of self, and of theories of value beginning initially before DNA, beginning in a mindless imperative for survival, dare it be said for being, given that the intersection of so-called unconscious being—quite some epistemological enigma that—from so-called conscious being is yet to be electrochemically specified. Neuroscience it appears has not yet reached its own big bang equivalent resting point from infinite regress but it does offer suggestions about the origins of human values (Glimcher & Fehr, 2009; Montague, 2006). Again, to be sure, those named in the text box on page 615 and recalled in the previous paragraph for question formulation purposes, could not and might not expect answers in terms of electrochemistry of soma, but they might well rejoice in understandings of these interpreted across the fact-value divide and expressed in terms operable for understanding and management of human feeling and emotion in everyday life situations. Yet what positive Science has not stumbled in carrying its valuable findings across the fact/value divide? Likewise for balance purposes, what men and women of the highest prudence and intention have not stumbled in translating philosophical insight into action?

As mentioned in the last paragraph of the page 615 text box, while some

Damasio on How Self Comes to Mind Repeated

It goes without saying that the construction of a conscious mind is a very complex process, the result of additions and deletions of brain mechanisms over millions of years of biological evolution. No single device or mechanism can account for the complexity of the conscious mind. The different parts of the consciousness puzzle have to be treated separately and given their due before we can attempt a comprehensive account. Still, it is helpful to start with a general hypothesis. The hypothesis comes in two parts. The first specifies that the brain constructs consciousness by generating a self process within an awake mind. The essence of the self is a focusing of the mind on the material organism that it inhabits. Wakefulness and mind are indispensable components of consciousness, but the self is the distinctive element. The second part of the hypothesis proposes that the self is built in stages. The simplest stage emerges from the part of the brain that stands for the organism (the protoself) and consists of a gathering of images that describe relatively stable aspects of the body and generate spontaneous feelings of the living body (primordial feelings). The second stage results from establishing a relationship between the organism (as represented by the protoself) and any part of the brain that represents an object-to-be-known. The result is the core self. The third stage allows multiple objects, previously recorded as lived experience or as anticipated future, to interact with the protoself and produce an abundance of core self pulses. The result is the autobiographical self. All three stages are constructed in separate but coordinated brain workspaces. These are the image spaces, the playground for the influence of both ongoing perception and of dispositions contained in convergence-divergence regions. *Self Comes to Mind: Constructing the Conscious Brain*. (2011). (p. 181). Random House Kindle Edition. (Damasio, 2010, p. 181)

philosophers hitherto cited do not fall within the timespan of the enquiry, there are, among many giants falling within it, Plato and Aristotle. Plato, various possible motives acknowledged, shifted focus from a positive observation of physical beings side to a cognitive knowing and feelings side and its question of human values, without abandoning observation and search for truth. Aristotle, without abandoning big questions of human value

and of what it means to be human and ethical, brought new perspectives to knowing and being, and relationships between them. Both are entitled to ask, like Descartes, not only for a values interpretation of electro-chemical explanations of how self comes to brain-made mind—if indeed self coming to brain-made mind is *per se* unambiguously measurable electro-chemically, or if the brain-makes-mind-comes-self linear order is correct or rather of matrix form—but also for an explanation of how such knowledge might be applied in education and training, service industries, and ethical government in P(p)olis. Damasio treats of some of these issues throughout his work (Damasio, 2010). Other leading questions from philosophy might follow. Who will be the first to write the electro-chemical version of the charioteer soul, locate its physical domains, certify the chemistry of its emotion, write its knowledge code and operationalise modes of introspection through which each of us might bring that charioteer more effectively into unarmful play? Who will write an everyday workable, thoughtful and functional version of the electro-chemistry of Aristotle's three states to be avoided, vice, incontinence and brutishness, or their opposites virtue, continence and superhuman virtue? Who electro-chemically will differentiate between Aristotle's continent and incontinent

persons, or between his person of practical wisdom and his merely clever person,

**Behind the Text: The Precarious Condition of Philosophy's
Seemingly Contested Relevance**

From the controversy of the herms, through the debates about universals, to Cambridge Ritualist claims about origins of Ethics and so on to present day exchanges about Orphic Cults and Greek religion, philosophy has progressed in steps of sometimes white hot debate, which seldom fails to impress. From hindsight such episodes of discovery may appear thin and their findings questionably ambiguous and complex. Similarly such brilliant positive-science breakthrough discoveries as universal gravitation and the like might appear overly trivial: after all are not some of these the subject of only one or two lessons in secondary Science education courses. Such views are hardly suitable views on which to pillory philosophy and/or Science irrelevant.

Other conditions might support a perception of diminishing relevance. First the attitude of elected parliamentarians who, in house in one breath dismissingly pronounce theory and ideology to be just academic, and in the next breath justify their own personal and party actions, sometimes even perhaps unknowingly and often glibly, in terms of great ideas by past philosophers. Philosophy here is a captive slave to subterfuge and canard in very antithesis of its core values. Second, in their busy world, policy makers have little time for philosophical questioning of procedure and process, while anger generated by perceived free riding and rorting behind such questioning may fall on philosophy *per se* rather than on cheating perpetrators. Thirdly, although enrolments in available philosophy courses remain significant, such courses are thin relative to other disciplines. Fourthly, with the coming of the digital age, and use of sophisticated and impressive electronic mapping of what neuroscientists presently conjecture is brain making mind, deep introspection of brain making mind as a tool of philosophy may, on the face of it, appear a spent force. This latter reason is hardly the case. For example is there such a world of difference between Plato's attempting to explain intemperance, soul in body and the like by analogy with watertightness rather than a sieve *Gorgias* 493 (Plato, 1952g; 1967b, p. 276) and Damasio attempting to explain in body mind-mapping theory by comparison of a slice of brain to a map of Manhattan Island minus Broadway (Damasio, 2010, p. 66)?

and/or incontinent smart person, or provide neuro-scientific answers to temperance, spirited righteous indignation and the like, and most important of all, operationalise beneficial findings of such differentiations for personal and *Polis* use? Again Plato and/or Aristotle could not be looking for electro-chemical solutions but simple questions asked in their names might, through the challenges they invite, occasion new directions for research.

To be sure, neuroscience presently makes no brave claims that it fully understands how

brain makes mind and how self comes to mind and again, in this light, such questions as those asked above in the names of philosophers might be premature, inappropriate, or even pronounced gauche by some. After all there is quite a difference between digital scanning and mapping technique approaches to brain making mind, and deep introspection about felt emotion and observed bodily action approaches to such phenomena, and for many the two cultures divide (Snow, 1959, 1998) appears to remain insurmountable. Yet each culture and its method, seems incomplete without the other.

Nevertheless, philosophy, like Science, is a questioning preoccupation. For example, if a neuroscientist were to report that the chemical flows and physical brain sectors and the like that light up when a smart person is contemplating the benefits they will enjoy through embezzling some bank holdings are identical to those lighting up in a

person of prudence or practical wisdom contemplating the social benefits they will bring through philanthropic distribution of those, their deposited funds, the philosophical question asked in terms of a practical solution might be to what



Source: Gauguin, Paul. (1897). (artist). *Where Do We Come From? What Are We? Where Are We Going?* [oil on canvas]. Museum of Fine Arts, Boston: Mark Harden's Artchive. Picture is to be read from right to left.

Does each generation ask itself Gauguin's questions? Even in an avatar *Polis* mind of zeros and ones there is no escaping these questions. Yet, if humans cannot imagine beyond the bounds of those markers set down by emotion, and consolidated through memory as stored experience and reflection, and if real world loadings of these are challenged by digitally and/or hallucinogenic generated versions, might not the dawning of new ages be something beyond the individual, and real world culture, something of a digital herd stampede, against which more conservative positions may be hard pressed to defend themselves. To be sure digital image making until now is a product of imagination dependent on experience gained in the real world. The question is about whether a poker-machine industry kind of manipulation of emotions might become the norm whether, planned or accidental, if digitally loaded somatic experience becomes to inform real world action. Why on such a possibility are twenty-first century authorities so surprised at an ability by terrorists to motivate youth to commit atrocities. Might digital invasion compromise esoteric *Polis*? Might the charioteer itself contain artificial figment vicarious from those generated real world emotions it is charged with coordinating? Might multiple charioteers emerge? Might such ersatz charioteers themselves have little option but to accompany their difficult charges all the way to hell in their chariot baskets or not.

phenomenon or criterion is explanation of the difference, here prudence *qua* practical wisdom versus smart immorality, to be referred? Such a question becomes more acute in the everyday psychopathy of business life (S. Smith & Lilienfeld, 2013, pp. 204 - 218) if, say, behind a twinkle in the eye of a charismatic manager about to sack a number of employees in the interests of greater bonus payment for that manager themselves, and the twinkle in the eye of a charismatic union organiser—well perhaps not in all parts of Australia in late 2015—or a statesman-minister attempting to prevent it, lie the same light ups and chemical flows, then again what is the difference and to what electrochemistry and/or human values criteria do we reach to resolve the difference? What practical applicable ameliorative mind techniques might follow neuroscientific explanation? The significance of these *quelle difference* questions cannot be underestimated when they are asked in the context of global

power struggle and political hegemony and it is a question which asks neuroscience to top its electrochemical explanation with a working human values solution to the rogue leader/rogue state problem. Neither should philosophy stop at simply asking

the questions.

Scientific Method: Descartes

Le premier était de ne recevoir jamais aucune pour vraie que je ne la connusse évidemment être telle: c'est-à-dire d'éviter soigneusement la précipitation, et la perversité et de ne comprendre rien de plus en mes jugemens, que ce qui se présenterait si clairement et si distinctément à mon esprit je n'eusse aucune occasion de le mettre en doute.

Le second, de diviser chacune des difficultés que j'examinerais en autant de parcelles qu'il se pourrait et qu'il serait requis pour les mieux résoudre.

Le troisième de conduire par ordre mes pensées, en commençant par les objets les plus simples, et les plus aisés à connaître, pour monter peu à peu comme par degrés jusques à la connaissance des plus composés et supposant même de l'ordre entre ceux qui ne se précèdent point naturellement les uns les autres.

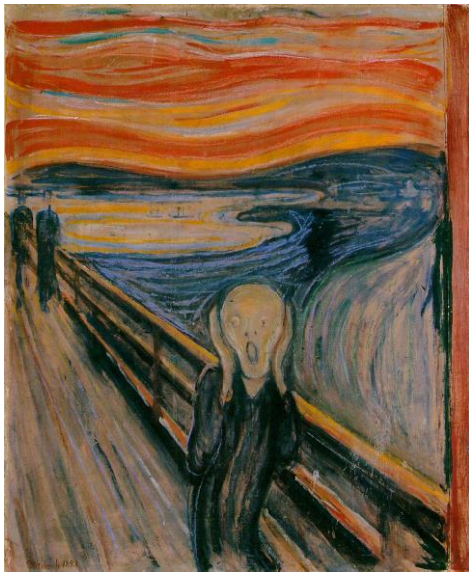
Et le dernier de faire partout des dénombrements si entiers et des revues si générales, que je fusse assuré de ne rien omettre.

Source: Descartes, R. (1657) *Discours de la méthode pour bien conduire sa raison, & chercher la vérité dans les sciences. Plus la dioptrique et les météores qui font des essais de cette méthode.* (p. 20). Paris. Chez Theodore Girard, dans la Grand Salle du Palais, proche la Porte de la Galerie Dauphine. (Descartes, 1657, p. 20)

To pose such questions is in no way to denigrate or downplay the positive-science side of neuroscience and again, on closer inspection, some of these questions may themselves prove premature, defective, irrelevant, or gauche but it is early times in neuroscience, and surely it goes without saying that those suffering mental affliction and/or physical brain lesions, and those who know and love them, and perhaps some others of us too, can hardly not be appreciative of relief brought by medication developed as a result of positive neuroscience research. However the contention being proposed

advocates philosophy's more vigorous membership of the neuroscience matrix of disciplines and a suggestion that within that membership it should continue to maintain its core tenet of applying as best it can, to all disciplines of enquiry, including itself, the test of the that-which-can-be-no-other in both positive Science and values interpretation fields. So situated, philosophy may plausibly, in its own way, countervail its seemingly precarious condition of contested diminishing relevance by asking questions which, when further explored through positive Science, may lead to new discoveries, even discoveries rivalling the brilliance of those $F = G \frac{m_1 m_2}{r^2}$, $W = JH$, $E = MC^2$, general and specific relativity, Avogadro's number, and DNA helix breakthrough findings, but which may also, on the human values side, help enhance the benefits such conjectured possible new discoveries might bring to ethical progress of *Polis* and P(p)olis. Such a claim, like other claims and questions raised elsewhere, may again be considered risible by many, yet as earlier mentioned, the history of Science abounds in examples of positive science

breakthroughs emerging from exploration suggested by, and conducted within, normative values architecture. It is telling of many scientists, when—either out of sheer sincerity, dedication and belief in their work, or at gaming in search of research



Source: Munch, E. (1893). (artist). *The Scream of Nature*. (oil, tempera and pastel on cardboard). National Gallery, Oslo: Mark Harden's Artchive.

How many are listening?

stakes appear high and ridicule, if it is to apply, might better be applied after some consideration of the usefulness or otherwise of the claim that philosophy and neuroscience in combination might occasion eureka breakthrough findings.

Of the names behind that parade of breakthrough discovery in the last paragraph Newton's philosophical side is well discussed (Dobbs, 1976/2008, *passim*; 1991, *passim*; Manuel, 1968, *passim*; 1974, *passim*; McGuire & Westman, 1977, pp. 95 - 142). Joule is known as a Christian believing in the scientific veracity of the scriptures and of God's ordered world (Joule, 1930-1931, p. 110), Einstein is known as a philosopher physicist *Einstein to Thornton, December 7, 1944, EA 61 - 574* (cited in Janssen & Lehner, 2014, p. 357), one believing in the importance of philosophical thought for physics, Jean Baptiste Perrin is known as an atheist and socialist (Berberan-Santos, 2001, p. 17), James Watson is known as an atheist who signed the 2003 Humanist Manifesto III with its emphasis on rational observation of nature within unguided evolution, on Ethics emerging from human need, on happiness emerging from participation of humane acts by persons endowed with a

social instinct, and on P(p)olis in which working for society brings individual happiness. Francis Crick, who like Watson signed the Humanist Manifesto III, is named a neuro-philosopher and is known as an agnostic leaning towards atheism (Crick, 1990, p. 10) and one believing that human problems of value are to be solved in moral and intellectual domains, and that a basis for biochemical theology might one day be uncovered (Crick, 1970, p. 615). Even were a full electro-chemical understanding of soul *qua* mind, embodied or otherwise, now available, and a presence of myriad such souls measured, philosophy might still ask the questions of which soul, for purposes of *Polis* and P(p)olis, and on whose decision, and on what values basis chosen. And if Crick's hunch about a more speedy evolution is correct, as appears to be increasingly entertained, in the presence of new findings about plasticity in brain and central nervous system mechanisms, and if someone comes up with a science-fiction or a comedian hunch that soon computers will come equipped with Soul 1 software with update assurances, then philosophy must still ask, whose soul-type for safe and civil society government versions, and whose soul-type for social and responsible business versions and again by whom chosen and on what bases—philosophy the gadfly ever in the ointment of Science, or philosophy *qua* one of the compounding chemists.

Coexisting normative values and positive Science dimensions appear to inform the lives and works of those famous persons exemplified above. Are not Plato and Aristotle, and others too, examples of full-soulness in such a sense, full soulness as attributed to those moderns above, but not denying human defects? Is it not possible that philosophy and neuroscience might constitute a still more fruitful combination, and if so what aspects of human condition and situation might they address? There are, no doubt, many answers to these questions, and again considerable possibility of a short shrift reply from both courts to a suggestion that neuroscience might be enhanced through ongoing liaison with philosophy and *vice versa*. Yet many an idea, grand or otherwise, has often to proceed through some or a number of phases—ignored, ridiculed, persecuted, appropriated and adapted, then claimed by others and applied (Spurling & McMurray, n.d., no time marker available)—before its usefulness is realised. Nevertheless, as addressed in the next section, two general

divisions of human condition might be fruitfully investigated through philosophy in neuroscience under the aegis of four general areas of research.

**Discussion of Originality of Content and Philosophy's Potential Research Contribution
Continues and Concludes.
Discussion of Philosophy in Neuroscience and Analysis of Human Condition Begins and
Concludes**

To wit: the first division is a domain of hitherto formative and socialising constancy



Source: Iannaccone, A. (2011). (artist). *“L'uomo è a misura di tutte le cose (di quelle che sono in quanto sono e di quelle che non sono in quanto non sono). Protagora”*⁽¹⁾. [digital, on photographic paper]. celeste.network. (Iannaccone, 2011)

Note: (1) Man is the Measure of all Things (Those Which Are as they Are and Those Which are Not Because They are Not). Protagoras”.

The historical Protagoras of page 56 of this enquiry returns anew with his enigma. Mankind may take its being from the existing natures of the real physical world or attribute natures to them. But now, given that litany of possible DNA changing influences mentioned in the text discussion about that second division of human condition, might not the enigmatic Protagoras itself be on a journey towards little other than being a measure of digitally and chemically remastered pawndom, a half-minded directionless journeyman of unfolding chance? However constructed and whichever way interpreted the Protagoras enigma, and its implications for *Polis*, remain complex.

in human condition: birth, life, aging and death; learning by contact with physical and non-physical referent objects and reflection on their somatically mapped recordings, and through reflection and imagination about metaphysical and/or other beings; incessant dictates of repetitive needs and the driving desire to fulfil wants; and questions of partner, family, and security. Taxes we might do without in this present context although they too are likely candidates in Damasio's wide-cast leviathan world (Damasio, 2010, pp. 59 - 60).

The human condition so expressed and framed remains, but it remains in the presence of experiential conditions some of which, although similar in kind to those known before, differ significantly in scale, intensity and degree. Of this kind are population stress, loss of biodiversity which supports human habitat, a rapidly changing East-West political hegemony, the destructive capacity of chemical and biological weaponry, 24/7 social media demonstration-effect exposure of inequalities combined with social media's own

potential for trending-now hysteria within an environment of poll-driven government, and intense hatred amongst fundamentalist religious groups, likely to deploy such horrible weapons as earlier mentioned, if and when they have them. Viewed historically, when peaceful resolution of differences has failed, conditions

often become brutal and ugly, and there can be no cessation of enquiry into human mind and each generation's capacity, through it, to address human condition constancies for maintenance of life and society purposes. Both philosophy and neuroscience remain relevant for this first division of human condition.

A second division of human condition is predicated on a possibility that environmental, social, and behavioural factors might well influence the very bases on which the constancy of the first division rests, extending even to change in genome

Philosophy and the Ideas-Action Divide

Just as positive Science has difficulty in bridging the fact-value divide, so too philosophy has difficulty in bridging the ideas-action divide. For example, notions of *Polis* have informed and continue to inform new settlement actions—Thurii, and other places like it, Huguenots in Africa and elsewhere, Brownist English dissenting pilgrims to New Plymouth, Berkeley's failed Bermuda intentions but later heritage success in California, Wakefield's plans for New Zealand and South Australia and a multitude of unmentioned examples in between, large and small. Yet as history reveals, the actioning of such ideals is questionable every which way. Present examples of ideas-action divide stumble may be found in mankind's best Millennium Goal and climate agreement efforts, informed by Science and anvilled within philosophical and values frameworks including hard-nosed geo-political wrangle. After government delegates return home from highly principled and scientifically informed UN meetings, governments they represented there are often compromised in actioning their pledges. It is telling, although understandable and logically necessary given that Polis/P(p)olis and Ethics are functions of living being, that much space-exploration Science is focussed on survival on the way to, and in, planned colonies on Mars and other planets, but relatively little on what kind of *Polis* might be wished for and safely constructed there. What might philosophy's view be on this question?

operations, and in consequence, to both biological and moral values meanings of human condition itself. This second set of conditions in which self coming to brain made mind persists is arguably so new and different, and is occurring, relatively, over such a short time span, as to possibly overwhelm timely solution of social problems that such relatively rapid changes of bases for stable human condition might bring. Examples of such developments are advances in gene technology, new materials body organs and robotics, including bionic experimentation, a re-emergence of eugenics disguised as

designer baby technology and/or vanity cloning, human genome technology's admirable prospect of a disease free, long and youthful life and its implications for living room, a profit-sector version of a possible Mars project synthetic food equivalent and its possible biological consequences, yesterday's soilent green hopefully remaining a taboo in even the worst of situations, even though its water provision equivalent is presently safely in commercial operation, intermingling of the virtual experience gained in avatar-land with that gained in the physical world and its possible modification of that real physical world experience, harmfully or un harmfully, including the prospect of an Etruscan style exit, wry smile, reclining nonchalance and all, for now privileged and even not so privileged races and/or

socio-economic groups, occasioned through human beings, in isolation, or in droves, plugging in or otherwise injecting deceptive virtual substitute wonderlands of self

Environment, Culture and *Polis* and What it May Mean to be Human

“... distinct levels of processing—mind, conscious mind, and conscious mind capable of producing culture—emerged in sequence. That should not leave the impression, however, that when minds acquired selves, they stopped evolving as minds or that selves eventually stopped evolving. On the contrary, the evolutionary process continued (and continues), possibly enriched and accelerated by the pressures created by self-knowledge, and there is no end in sight. The ongoing digital revolution, the globalization of cultural information, and the coming of the age of empathy are pressures likely to lead to structural modifications of mind and self, by which I mean modifications of the very brain processes that shape the mind and self. (Damasio, 2010, p. 182)

As humans debate the benefits or perils of cultural trends, and of developments such as the digital revolution, it may help to be informed about how our flexible brains create consciousness. For example, will the progressive globalization of human consciousness brought on by the digital revolution retain the goals and principles of basic homeostasis, as current sociocultural homeostasis does? Or will it break away from its evolutionary umbilical cord, for better or worse? (Damasio, 2010, p. 29)

It goes without saying that the way in which human brains manage life requires both varieties of homeostasis in continuous interaction. But while the basic variety of homeostasis is an established inheritance, provided by everyone’s genome, the sociocultural variety is a somewhat fragile work in progress, responsible for much of human drama, folly, and hope. The interaction between these two kinds of homeostasis is not confined to each individual. There is growing evidence that, over multiple generations, cultural developments lead to changes in the genome. (Damasio, 2010, p. 27)

and *Polis/P(P)olis* sustained in part through private and public purchase of complementary real-world comfort toy look-alikes and props, some detrimental others not—talking robot friends and flatters, avatar-land economic game successes, oil-funded unsustainable island states of wonderful architecture, and digital indoctrination of belief in future secure-state paradises and the like in return for present destruction of culture and habitat. If measured against a harsh and seemingly severe criterion that some humans will continue to exist somewhere in some kind of condition then, in one sense, none of these conjectured human-condition-altering prospects, either alone or in combination through disruptive synergies, may prove incapable of mitigation. After

all, in respect of the first of the two divisions of human condition outlined on pages 625 to 627, yesterday’s future shock rebranded as today’s disabling technology is apparently to be solved, in Australia at least, through funding of multi-faceted innovation, on an assumption that such innovation itself will not further destabilise the economy, nor serendipitously harm or impact on genome process and that, simply for want of funding, is ready to emerge in a nation whose learn-by-doing-and-making opportunity has, for some decades, largely been exported to job opportunity and technical research and development elsewhere. And solved it may well be for a relatively short time, if such funding serves as a new currency of business welfare and wage subsidy payments, notwithstanding the caveats mentioned in the last sentence. Nevertheless, given a world in which developments in artificial intelligence—deep learning, pattern recognition, language and text analysis and their

implications for unemployment—appear to be progressing more quickly than neuroscience’s ability to fathom how brain makes mind itself, it seems reasonable on precautionary grounds, to enquire into environmental, social and behavioural alteration of human condition fundamentals, and imagined consequences of it for social embodiment of so-called permanent human condition, and philosophy is well placed to formulate relevant questions and, if acknowledged, to pursue them in liaison with neuroscience.

In respect of the second of the two divisions of human condition outlined on pages 625 to 627, if mankind can only know what it experiences, and if experience can be avatared in, or in the future, long term memory conditioned, or ‘new’ long term memory epigenetically protein moleculed into the cell on the outside of the DNA, that is behind synaptic firing-and wiring sensory nerve memory research findings of the past three decades (Chen et al., 2014, pp. 1-21), or diseases snipped out or biological and environmental terrors snipped in, then what does it matter if the children, let alone the grandchildren, have much or any comprehension at all about prequel understandings of what it might mean to be human? Any number of that digitally or chemically remastered Protagoras on page 625 may be available on demand, or for worse or better, by decree. Such a question may be asked with or without bitterness or spite, and on behalf of anything but a canard for hedonism and/or abandonment of some kind of intergenerational Ethics. A cynical asking of it may as much disguise an element of caring as it might an element of not caring, even though a common functionally binding basis for care is difficult to verify either philosophically or neuroscientifically.

These possible bases-changing conditions, which in relative terms are new and less noticed and understood, are big changes, and it is very early times for those wishing to future guess outcomes and resolutions. These changes are occurring during a period of disempowerment engendered by an ethical relativism which has possibly devalued discussion about right action, and are possibly being led by Science in general not necessarily well focussed on full Science, Ethics and *Polis* implications of its work, and further exacerbated in rogue states or elsewhere through work on

scientific projects of imaginatively terrifying consequences, anthrax carrying drones, bionic and chemically engineered insect soldiers, and the like.

How the interplay between the two divisions of human condition postulated—experiential and existential condition resulting predominantly from those lifecycle



Source: Hans Holbein the Younger. (1532). *Hermann von Wedigh III*. (oil and gold on oak). New York. Metropolitan Museum of Modern Art. (Hans Holbein the Younger, 1532).

The handwriting on the paper within the book reads “truth breeds hatred” a line raised by (Terence, 1893, pp. 8, 369), a wisdom those returning to the cave might glean from Plato *The Republic* 517a (Plato, 1952r, p. 389; 1969a), and no doubt an observation not lost on whistleblowers and others in public life who report what they saw and heard, and stand by it. Philosophy and Science may well feel hatred they effect..

constants within an overcrowding and seemingly more urgent and intense real world situation on one hand, and human condition foundationally shaken by those lesser known and understood possible genome changing environmental, chemical, digital, and bionic forces on the other—might work itself out, is a big question. Finding answers to questions about the next *Polis* and next age, and the role of Science and Ethics within them, is likely to remain difficult. It is conceivable, although not provable, that without philosophy’s particular kind of questioning presence, unified future society might be less salutary and more difficult to achieve than it needs be, and even on such a slim contention philosophy’s presence in neuroscientific probing of mind and consciousness is advocated even though,

as outlined in the text boxes on pages 620 and 626, upon inspection of its own condition, philosophy is not without its own ideas-to-action divide. Nevertheless, micro research in philosophy and neurophysiology might, apart from particular contributions each work makes, be ordered and ranked through integrating metanalysis aimed at better understanding and management of human condition within four overarching and coordinated research domains, viz (a) the fact–value divide, (b) thought-action divide, (c) the truth-anger enigma and (d) a common and binding basis for care in a relative values world.

The conjecture that philosophy and neuroscience together may prove a beneficial combination, and that through cooperation they may together better contribute to understanding of four perplexities of human condition is, in summary form, a main outcome of the minor goal, and is offered as a speculative conclusion and predicated on a minor and constrained claim about original contribution *qua* procedural method.

CONCLUSION TO THE ENQUIRY

The major aim of the enquiry was to effect a multiple-voice interpretation of conditions of political philosophy both prequel to, and then metamorphosing coincident with, emergence of a new era subsequently named the Modern Age. This aim was effected by designing a new analytical method and applying it consistently in measurement of representative prequels to so-called modernism and articulation of Thesis Proposition Statements purporting to identify elements of substantial and quickening change in political philosophy. The minor aim of the enquiry was to apply a geography of mind focus across the prequel series generated in the major aim, and on the basis of insights gained, specify contributions philosophy might make to ongoing enquiry about human condition and *Polis/P(p)olis*. The minor aim was effected, inter alia, by respectively bringing identified prequels in the one case, and *Politique Ethics* in another case, to twenty-first century bases for comparison purposes.

Among other things, the enquiry engaged with “many opinions about the gods and the generation of the universe, *Timaeus* 29c (Plato, 1925h; 1952w, p. 447), and with enquiry into “fine and just actions” *Nicomachean Ethics* I 1094b10 – 15 (Aristotle, 1926; 1952g, p. 339) consistent with politics *qua* good for man” (ibid., p. 339). Given that in matters of gods and universe it is not always possible “to give notions which are altogether and in every respect exact and consistent with one another” *Timaeus* 29c (Plato, 1925h; 1952w, p. 447) and that in respect of gods and matters of state “we ... are speaking about things which are only for the most part, true and with premises of the same kind to reach conclusions that are no better” *Nicomachean Ethics* I 1094b20 (Aristotle, 1926; 1952g, p. 339), there should be little surprise with a caveat to the effect that most key statements and conclusions in this enquiry are contestable, precision in certain classes of things being attainable only “as far as the

nature of the subject admits” *Nicomachean Ethics* I 1094b25 (Aristotle, 1926; 1952g, pp. 339 - 340).

Notwithstanding the caveat of the closing sentence of the last paragraph, and subject to the constraints of enquiry method discussed in the Introduction, and Chapters 2 and 10, major and minor aims are posited achieved. The minor aim, which *inter alia* carries key issues troublesome to Western understandings of human condition and *Polis* for some two and a half millennia, to neuroscience presently in the sixth decade of its precocious infancy, offers an all too much, all too soon kind of a finding, yet the four areas of research suggested offer an opportunity for philosophy and neuroscience together to integrate micro research findings as they occur along the way, and apply them to better understanding of political gathering and P(p)olis, and practical solution of perceived problems.

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