

BERGSON, PLOTINUS
and the
HARMONICS OF EVOLUTION

LYNN VIVIEN HUBBARD

A thesis submitted in partial fulfilment of the requirements of the University of the
West of England, Bristol for the degree of Doctorate of Philosophy

The Faculty of Health and Applied Sciences,
University of the West of England,
Bristol

November 2017

BERGSON, PLOTINUS
and the
HARMONICS OF EVOLUTION

LYNN VIVIEN HUBBARD

A thesis submitted in partial fulfilment of the requirements of the University of the
West of England, Bristol for the degree of Doctorate of Philosophy
November 2017

Abstract

*

It has been acknowledged that Bergson and Plotinus share many concepts, however ambiguities in the texts have presented unresolved challenges to scholars of both philosophers. The aim of this study is to examine what is explicit and speculate on what is implicit in the texts, and to argue they both replicate the Pythagorean tradition by proposing a philosophy of dynamic transformation underpinned by two fundamental and interlinked premises: a universe generated and governed by a natural law of *musical harmonics*, and the concept of *kairos* as time signifying the emergence of qualitative change.

Following an examination of the revival of Pythagoreanism in the eras of Plotinus and Bergson, the concepts central to Pythagorean cosmogony, cosmology and theory of harmonics are explained. It is proposed these concepts, together with the mechanism of procession and reversion explain the generation and evolution of

Plotinus' *Intellect* and *Soul* as an integrated compound series consisting of a fundamental vibration and its self-generated harmonics, thus potentially clarifying the nature of the forms, *λόγος*, the decad, and the various levels of *Soul*. Furthermore, that Pythagorean concepts and the harmonics model are also at work in Bergson's cosmology, in the impulsion and inversion of the *élan vital*, demonstrating consistency with his arguments for partial finalism, theory of number and the influence of mathematics. It is argued that for Plotinus and Bergson, contemplation and intuition respectively is *kairos*, the moment in which mind and matter, sense perception and memory, freedom and determinacy, integrate, an integration grounded by the harmonics model.

This new interpretation suggests a previously unacknowledged Pythagorean influence on Bergson and an underestimation of the influence on Plotinus. Significantly, it clarifies ambiguities, challenges old perceptions, reinforces the influence of Plotinus on Bergson, and provides a novel perspective for further re-evaluation of the texts and secondary literature.

BERGSON, PLOTINUS
and the
HARMONICS of EVOLUTION

Contents

*

Acknowledgements	iv
List of Illustrations	v
List of Abbreviations	vi
Introduction	1
Chapter 1 Philosophical and Historical Background	
Introduction	11
1.1 Pythagoras and Pythagoreanism	11
1.2 The Pythagorean Influence in the Era of Plotinus	15
1.3 The Pythagorean Influence in the Era of Bergson	19
Conclusion	31
Chapter 2 The Pythagoreans - The Generation of Multiplicity	
Introduction	32
2.1 Pythagorean Cosmogony and Cosmology	33
2.1.1 Nature	33
2.1.2 The Principles of Limiting and Unlimited	35
2.1.3 Harmonia (ἀρμονία)	37
2.1.4 The Pythagorean <i>Monad</i>	37
2.2 A Brief History of Pythagorean Harmonics and Number Theory	42
2.3 An Introduction to the Pythagorean Science of Harmonics	46
2.4 Number as <i>Dynamis</i>	51
Conclusion	58

Chapter 3 Plotinus - The Generation and Nature of <i>Intellect</i>	
Introduction	60
3.1 Plotinus' Principle of Unity – The <i>One</i> (τὸ ἓν)	61
3.2 The Generation and Nature of <i>Intellect</i> , the Form of the First Forms	64
3.3 The Generation of <i>Intellect</i> as <i>Beings</i>	74
3.4 Intelligible Matter, <i>Logos</i> and Substance in the <i>Enneads</i>	82
3.5 The Generation and Nature of <i>Being</i> as Substantial Number	89
Conclusion	98
Chapter 4 Plotinus - The Generation of <i>Soul</i> and Origin of Matter	
Introduction	100
4.1 The Levels of <i>Soul</i> and their Relationship with <i>Intellect</i>	101
4.2 The <i>World Soul</i> , Providence and the Making of the Universe	106
4.3 The Integration of Body and <i>Soul</i>	112
4.4 The Nature and Origin of Matter (ύλη)	123
Conclusion	133
Chapter 5 Bergson - God, the <i>Élan Vital</i> and the Generation of Multiplicity	
Introduction	136
5.1 Bergson's Principle of Unity - God/ <i>Élan Vital</i>	137
5.2 The Nature and Mechanism of the <i>Élan Vital</i>	149
5.3 The Ontological and Epistemological Transformation of the <i>Élan Vital</i>	157
Conclusion	169
Chapter 6 Bergson - Harmonics of Evolution	
Introduction	171
6.1 Bergson's Partial Finalism	172
6.2 The Role of Number in Bergson's Creative Evolution	181
6.3 Bergson and Mathematics	188
6.4 Bergson and Pythagorean Number Theory	194
6.5 Bergson and Pythagorean Philosophy	199
6.6 Bergson and Metaphor	203
Conclusion	208

Chapter 7 <i>Kairos</i> (Καιρός)	
Introduction	210
7.1 <i>Chronos</i> and <i>Kairos</i> in Ancient Greece	211
7.2 <i>Kairos</i> in the Pythagorean Tradition	215
7.3 An Introduction to <i>Kairos</i> in Plotinus and Bergson	221
Chapter 8 Plotinus and <i>Kairos</i>	
Introduction	222
8.1 <i>Kairos</i> and the <i>World Soul</i>	223
8.2 <i>Kairos</i> and the Individual <i>Soul</i>	226
8.2.1 Sense perception	228
8.2.2 Reasoning and Memory	236
8.3 The Freedom of the Individual <i>Soul</i>	247
Conclusion	251
Chapter 9 Bergson and <i>Kairos</i>	
Introduction	254
9.1 Perception, Memory, and <i>Kairos</i>	255
9.1.1 Pure Perception	256
9.1.2 The Preservation of Memories	262
9.1.3 The Recognition and Recollection of Memories	266
9.2 Bergson and Freedom	272
9.3 <i>Kairos</i> in Bergson’s Philosophical Method	279
Conclusion	289
Conclusion	291
Bibliography	310
Appendix 1 - Introduction to the Black Notebook	
Appendix 2 - Bergson’s Lectures on the Pythagoreans	
Appendix 3 - Introduction to Bergson’s Lectures on Plotinus	
Appendix 4 - Bergson’s Lectures on Plotinus	

Acknowledgements

*

I would like to express my thanks to my supervisors, Professor Alison Assiter and Dr. Sean Watson for their guidance, support and encouragement throughout the years it has taken to bring this thesis to completion.

I thank Dr. Iain Grant for introducing me to the joy of Plotinus when I was an undergraduate student and for his encouragement when I was considering my PhD application. I am grateful to numerous other people from UWE philosophy department who either read and gave valuable advice on early drafts of parts of the thesis or gave their support along the way. I would especially like to mention Leone Gazziero (now at Lille University), Imogen Smith, Michael Lewis (now at Newcastle University) and Lita Crociani-Windland (Sociology and Psycho-Social Studies). Furthermore, I express my gratitude to Tim Swift in the mathematics department at UWE for explaining Riemann's mathematics with such clarity and enthusiasm, and to Tony Haynes, one of the founders of the Grand Union Orchestra, its artistic director as well as writer and arranger of most of its music. Tony kindly commented on the musical information provided in Chapter 2.

Most importantly, this thesis could not have been completed without the love and support of my family; my mum, who has always been there and believed in me; my son Leon, who so enthusiastically encouraged my studies; his inner strength, resilience to life's challenges, and academic success has inspired me more than he will ever know; and my dear husband Mick, my tower of strength, who sadly passed away just four months before the thesis was submitted. I am truly blessed to have received the gift of his love and unwavering encouragement, his willingness to hear and discuss my ideas, proofread my work, and most of all for enabling me to follow my dreams. This thesis is dedicated to him.

List of Illustrations

*

The Pythagoreans

Figure 1	Pythagorean <i>Tetractys</i>	38
Figure 2	Division of the Monochord	46
Figure 3	Harmonic Series	47
Figure 4	Geometrical and Dynamic Correspondence of Harmonics	48

Plotinus

Figure 5	Creation of the Fundamental	70
Figure 6	Procession and the Creation of Being	71
Figure 7	Creation of the Form of <i>Intellect</i>	73
Figure 8	Harmonic Motion	75
Figure 9	<i>Intellect's</i> Return to Itself	76
Figure 10	Generation of the Second Harmonic	76
Figure 11	The Generation of <i>Soul</i>	77
Figure 12	Generation of Multiple Harmonics	78
Figure 13	Unities within the Plotinian Decad	96
Figure 14	The Plotinian Decad/ <i>Tetractys</i>	97
Figure 15	Generation of <i>World Soul</i> and <i>Soul</i> of Individual Souls	102
Figure 16	Harmonic Generation of <i>Soul</i> and <i>World Soul</i>	104

Bergson

Figure 17	The Creation of Memory	156
Figure 18	The Reflection of the <i>Elan Vital</i>	159
Figure 19	The Alternate Generation of Consciousness and Matter	160
Figure 20	Consciousness, Matter and the Law of Dichotomy	165
Figure 21	Bergson's Cone Illustration	256
Figure 22	Perception	270

List of Abbreviations

*

- C.E.** Bergson, H., 1907. *L'Évolution créatrice*. Paris: Quadrige, PUF
Creative Evolution. Trans. A. Mitchell, 1998. Mineola, New York: Dover.
- C.M.** Bergson, H., 1934. *La pensée et le mouvant; essais et conférences*. Paris: F. Alcan

The Creative Mind. Trans. M. L. Anderson, 2003 . NY: Citadel Press
- D.S.** Bergson, H., 1922. *Durée et simultanéité*. Paris: F. Alcan

Duration and Simultaneity. R. Durie (Ed.), L. Jacobson (Trans), 1999.
Manchester: Clinamen Press
- M.E.** Bergson, H., 1919. *L'énergie spirituelle*. Paris: Quadrige, PUF

Mind-Energy, Lectures and Essays. Trans. H.W. Carr, 1920. NY: Henry Holt and Company.
- M.M.** Bergson, H., 1896. *Matière et mémoire*. Paris: Quadrige, PUF

Matter and Memory. Trans. N. M. Paul and W.S. Palmer, 2004. Mineola, New York: Dover.
- T.F.W.** Bergson, H., 1889. *Essai sur les données immédiates de la conscience*. Paris: Quadrige, PUF.

Time and Free Will: An Essay on the Immediate Data of Consciousness. Trans. F.L.Pogson, 2001. Mineola, New York: Dover.
- T.S.M.R.** Bergson, H., 1932. *Les deux sources de la morale et de la religion*. Paris: Quadrige, PUF

The Two Sources of Morality and Religion. Trans. R. A. Audra and C. Bereton, 2010. Notre Dame, Indiana: University of Notre Dame Press.

Bergson, Plotinus and the Harmonics of Evolution

Introduction

*

But, friend, when you grasp the number and nature of the intervals of sound, from high to low, and the boundaries of those intervals, and how many scales arise from them, which those who came before handed down to us, their followers, to call ‘harmonies,’ and when you grasp the various qualities inhering in the motions of the body, which they said must be measured with numbers and named ‘rhythm’ and ‘metre,’ and when you apprehend that every One and Many should be so investigated, when you have grasped all of that, then you are wise ...

(Plato, *Philebus*, 17c11-e1, in Kennedy, 2011, p.viii)

The link between Bergson and Plotinus has long been acknowledged. Émile Bréhier, who attended Bergson’s lectures on Plotinus, commented: “Plotinus is one of the very rare philosophers with whom Bergson felt an affinity... he treated him, as if he recognised himself in Plotinus” (Bréhier, 1949, pp.107-108). Despite Bergson’s affinity with Plotinus, the only Bergson scholar to publish a comprehensive work on the significance of Plotinus on his philosophy is Rose-Marie Mossé-Bastide whose *Bergson et Plotin*, published in French in 1959, is no longer in print and has never been translated into English. Since then, only a few articles have specifically addressed the Plotinus/Bergson relationship.

Bergson describes Plotinus as his “favourite philosopher” and Mossé-Bastide demonstrated a sympathy or meeting of minds in her examination of the shared

concepts and differences of their respective philosophies. She proposed that Bergson's 'creative evolution' is a "dynamic schema" that is "rooted in the philosophy of Plotinus" (Mossé-Bastide, 1959, p.355), having developed it further by integrating the generative functions of Plotinus' hypostases, *Intellect* and *Soul*, within his concept of duration.

The aim of this study is to build upon Mossé-Bastide's work and to support the thesis that the "dynamic schema" underlying both their philosophies is rooted in the science of harmonics and philosophy of the Pythagorean tradition, an influence underestimated by commentators on Plotinus, and previously unrecognised by commentators on Bergson.

The Pythagorean influence on Plotinus arises from its philosophical influence on Plato, and its revival in the first and second centuries A.D. by Neo-Pythagorean philosophers including Moderatus, Nicomachus, Numenius, and Plotinus' teacher Ammonius Saccas. It must be noted that while being referred to as Neopythagoreans, they considered themselves to be Platonists (Dillon, 2014, p.250). O'Meara comments:

Plotinus regards himself as interpreting Plato, who expresses with greater clarity truths obscurely and partially indicated by Pythagoras. (O'Meara, 2014, p.404)

The Pythagorean legacy Plotinus continued is slowly coming to light, with Stamatellos' *Plotinus and the Presocratics* (Stamatellos, 2007) and Slaveva-Griffin's *Plotinus on Number* (Slaveva-Griffin, 2009) being of particular relevance, and it will be proposed that a deeper analysis of the text reveals the nature of the legacy to be of paramount importance to our understanding of the *Enneads*.

The Pythagorean influence on Bergson could have presented itself through personal, educational, scientific, and other cultural influences, and it will be argued that like Plotinus there is a Pythagorean influence buried within the text. Stephen Clark,

author of *Plotinus: Myth, Metaphor and Philosophical Practice*, suggests that while some scholars believe exegesis must be confined to “what the text says” without speculating on it, “scholarly exegesis simply of the text cannot be all we do” because “all philosophers have more beliefs than they write down, beliefs that may influence their arguments” and to understand the text “we have to make our own assumptions about what it might reasonably say”. In referring to Plotinus he proposes that we shall not understand the *Enneads* until “we can make a worthwhile guess about what is not said, and develop them in ways Plotinus did not, quite possibly, intend”. Clark claims that this is what Plotinus did with Plato (Clark, 2016, pp. xii-xvi), and it is suggested this is what Bergson did with Plotinus. The task of this project is however to present an interpretation of the texts and make a “worthwhile guess” about what they *do not say* with a view to revealing the real intentions rather than developing them in ways that they did not intend. In this context the conception of “worthwhile” is to make sense of aspects of the texts scholars have found challenging and therefore remain unexplained, as well as promoting greater understanding among all who read the texts.

There are a number of aspects of the *Enneads* Plotinian scholars have found obscure and remain the subject of debate, for example, why procession and reversion are necessary for the generation of *Intellect* and the multiplicity within it; the nature and shape of the forms; the nature of *logos* (λόγος); how number relates to the primary kinds and generates the *Beings* in *Intellect*, as well as the nature of the Plotinian decad. There are also disagreements amongst scholars concerning his account of *Soul* and matter, as well as the role of music and musical metaphors in the *Enneads*.

While many commentators on Bergson note certain ambiguities in his work, particularly in *Creative Evolution* concerning the nature and generative process of the *élan vital*, and his theory of perception in *Matter and Memory*, in general much of the

later work presents a summary of his philosophy, and there appears to be an attitude of acceptance of the ambiguities, with little effort to resolve them; hence there tends to be a lack of disagreement or debate amongst modern Bergsonian scholars. It is anticipated the arguments presented in the following chapters will help to resolve some of the ambiguities and stimulate debate.

My thesis is that there are two fundamental dominant and interlinked themes that Plotinus and Bergson have assimilated from the Pythagorean tradition: the ancient Greek science of *harmonics* and the concept of *kairos*. A brief introduction to them is therefore appropriate. The origin of the science of harmonics has been traced to Pythagoras (c.530 B.C.) who is said to have discovered that musical intervals could be expressed as ratios. He was the founder of a Pythagorean tradition that considered a divine cosmos in which multiplicity is generated from a central point of power and remains unified in the generative process because it is ordered according to a natural law of musical harmonics based on numerical ratios. 'Proportion' was therefore integral to their cosmogony, cosmology, and intimately linked to their religious values, ethics and practice of medicine. Musical harmonics was considered a science, along with geometry and astronomy, for which arithmetic was considered foundational.

The science of harmonics is also closely linked with *kairos*, one of the concepts the ancient Greeks utilized for time; the other is *chronos*. *Chronos* is chronological, sequential, quantitative or measured time, while *kairos* is purely qualitative as a moment of action or *timing*, an occasion signifying the emergence of qualitative change that is situation specific. *Kairos* is essential in the ontological structure of the shaping of the moment, and so represents the Pythagorean notion of time always present within the natural evolutionary process involving real change. The Pythagoreans acknowledged it in the outer world as well as the inner; in the outer world *kairos* was

considered as a moment of necessity or providence and in the human inner world it is the moment of the free act based on good judgement.

A survey of the literature reveals that *kairos* is largely neglected by scholars of Plotinus and Bergson, particularly in the English language literature. The articles written in French are very general in nature and include contributions from Vladimir Jankélévitch (Jankélévitch, 1959) and J.M. Gebaude (Gebaude, 1991), who has written specifically about the concept in Bergson's philosophy, while E. Moutsopoulos, a philosopher of *kairicity*, has written about its relevance to the philosophy of Plotinus (Moutsopoulos, 1984; 1991).

Harmonics and *kairos* have a dynamic and transformative character and entail the integration or synthesis of natural philosophy and psychology. Bergson refers specifically to harmonics, almost as an aside in some of his texts, but does not mention *kairos*, whereas Plotinus refers to *kairos* but does not mention harmonics. Neither philosopher refers to them explicitly as grounding principles; however, it will be argued that they are implicit in the texts, and the philosophy of Plotinus and Bergson only makes sense if it is founded on the model of harmonics, a theory that once understood, has the potential to resolve many of the perceived ambiguities in their work and reinforces their philosophical connection. It is therefore anticipated that the thesis will be of interest to historians of philosophy as well as to scholars of Plotinus and Bergson. Furthermore, since it potentially transforms our understanding of their metaphysics it will raise the profile of harmonics and *kairos* in the field of metaphysics in general.

This is the first time that harmonics and *kairos* have been studied in both philosophers; hence the arguments presented rely heavily on analysis of the text of the *Enneads* and Bergson's work. The level of analysis required and the potential importance of the interpretation arising from that analysis has meant, perhaps

surprisingly, for a thesis on the history of philosophy, that it has been necessary to be selective whilst being comparative. For example, although presumed to be highly influential on Plotinus, the role of Pythagorean harmonics in Plato's texts, particularly in the *Timaeus* where he uses Pythagorean harmonic ratios in his cosmology (*Timaeus* 35a-37e), has not been addressed in detail because significant work on how Plato applied Pythagorean harmonics in his dialogues has already been published by commentators. Barker writes about Plato's musical ethics in the *Republic* and *Laws*, as well as harmonics in the *Republic* and *Timaeus* (Barker, 2007, pp. 308-327); Cornford examines harmonics in the *Timaeus* (Cornford, 1935); Crickmore suggests how Pythagorean harmonics underpins Plato's political and moral theory in the *Republic* (Crickmore, 2006); Kennedy proposes that a stichometric analysis of Plato's *Symposium* and *Euthyphro* reveals a musical scale built in to the text (Kennedy, 2011); McClain explains how Pythagorean mathematics and harmonics was influential in key dialogues such as the *Republic*, *Timaeus*, *Critias*, *Statesman* and *Laws* (McClain, 1978); Pelosi investigates Plato's philosophy of music as it relates to the body and soul (Pelosi, 2010) and Moro Tornese has examined the theories of music and harmony in Proclus' commentaries on Plato's *Timaeus* and *Republic* (Moro Tornese, 2010; 2017). Due to the extensive nature of addressing how Plato incorporated Pythagorean harmonics into his philosophy it is deemed prudent to explore how Plotinus takes metaphysics beyond Plato to a level in which the ratios of musical harmonics have a basis in modern physics. The need to be selective has also entailed the isolation of Bergson from his acknowledged philosophical influence of French Spiritualism, a detailed analysis of which would divert from the focus of the thesis. While Bergson disagreed with aspects of Plato's philosophy to the extent that Plato could be considered an influence that separates Bergson philosophically from Plotinus, one of

the key conclusions of the thesis is that Pythagoreanism is the tradition that unites them more strongly than previously realised. The scope of the thesis is therefore limited to a comparison of the philosophy of Plotinus and Bergson with the Pythagorean tradition.

Chapter Synopsis

This study will be presented in nine Chapters and a Conclusion. Chapter One places the proposed Pythagorean influence on Bergson and Plotinus within its philosophical and historical context to provide important background information that supports the examination of the interlinked concepts of harmonics and *kairos* explored in subsequent chapters. The Chapter opens with a brief history of Pythagoreanism and then examines the influence of Pythagoreanism in the eras of Plotinus and Bergson.

Chapter Two provides an important, but necessarily brief introduction to the concepts central to Pythagorean cosmogony and cosmology because they will be referred to in subsequent chapters: Nature, the Principles of Limiting and Unlimited, Harmonia (ἁρμονία), and the function of the Pythagorean *Monad* in their number theory. This is followed by a brief history of Pythagorean harmonics and number theory, and a basic introduction to the Pythagorean science of harmonics. Finally, it will discuss the notion that within the science of harmonics the Pythagoreans conceived numbers as powers.

Chapter Three examines the generation and nature of *Intellect* in the *Enneads*. It commences with an explanation of Plotinus' theory of the *One* as the first principle of unity, and the source of multiplicity. This is followed by a summary of Plotinus' account of the generation of *Being* and *Intellect* as an activity of procession away from the *One* and reversion to the *One*. It will be argued, with the help of illustrations, that the generation of *Intellect* and its *Beings* takes the form of an integrated compound

series consisting of *Intellect* as a fundamental vibration and its *Beings* as self-generated harmonics. This will be followed by clarification of the ontological status of *logos* as the substance of the *Beings* in *Intellect*. While commentators understand *logos* to imply a logical ordering structure that is commonly defined as ‘rational forming principle’ or ‘reason principle’, it will be proposed, following an examination of the ancient Greek meaning of *logos* and the nature of *logos* as described by Plotinus, that it could be defined more precisely as ‘ratio’, emulating the term used in the Pythagorean tradition of musical harmonics. Finally, by analysing how substantial number is generated with the primary kinds: motion, rest, otherness and sameness, it will be argued that Plotinus’ concept of *Being* consists in the decad, which is modelled on the Pythagorean *tetractys* that represents the structural order or numerical organisation of the universe.

Chapter Four continues the examination of Plotinus’ account of the generation of multiplicity by examining the generation of *Soul* and origin of Matter. It will reveal how the harmonics model applies to the *Hypostasis Soul* and the generation of the *World Soul* and *Soul* of individual souls, and their relationship to *Intellect*. Then it examines the role of ‘providence’ and *harmonia* in the making of the universe by the *World Soul*, and subsequently explains the application of the concepts of *sympathia* and *synesis* in the integration of body and *Soul*. Finally, it examines the nature and origin of matter. It will be argued that the model of harmonics provides a solution to ambiguities debated by scholars and that the Pythagorean influence on Plotinus is greater than previously realised.

Chapter Five explores the nature of Bergson’s cosmology described in *Creative Evolution* and provides a novel interpretation of how Bergson conceives the generation of multiplicity according to the model of harmonics. It commences with an

examination of the ambiguity surrounding the nature of the *élan vital* and will argue that Bergson followed Plotinus and the Pythagoreans in presenting a non-pantheist philosophy in which the First Principle remains distinct from its products. This is followed with an explanation of the mechanism of the *élan vital*, and it will be proposed, with the aid of illustrations, that it replicates Plotinus' movements of progression and reversion, thus generating the 'form' of the *élan vital* as the first harmonic that subsequently divides itself into matter and consciousness as separate tendencies, thus creating an impersonal supra-conscious memory as a series of harmonics.

Chapter Six develops the argument that Bergson's cosmology is modelled on the generation of harmonics by examining his arguments for partial finalism, his theory of number, and the influence of mathematics. It will be proposed that since his arguments are compatible with the 3-stage generative structure of Pythagorean cosmology, this potential influence suggests that a re-evaluation of the influences normally attributed to these concepts is necessary. An examination of his lectures on the Pythagoreans will reveal Bergson's sympathy with Pythagorean number theory and philosophy of transformation. Finally, the commonly held view that Bergson's theory of duration as a melody is a metaphor will be discussed and contested.

Chapter Seven introduces the concept of *kairos* as it was understood in ancient Greece by the Pythagoreans, as a prelude to explaining the nature of *kairos* in Plotinus and Bergson. It explains how *kairos* is connected to rhetoric under Pythagorean influence.

Chapter Eight opens with an explanation of the nature of *kairos* in the *Enneads* in respect of the role of freedom in the *World Soul*, and nature. This is followed by an examination of how *kairos* is implicated in the key concepts of sense perception,

memory, reason, and freedom as they relate to the individual *soul*, and it will claim that perceived ambiguities can be resolved if the model of harmonics is applied to these concepts.

Chapter Nine explores how Bergson utilises the ancient concept of *kairos* in the model of harmonics in his theories of perception and memory as proposed in *Matter and Memory*, and how *kairos* is intimately connected to his understanding of morality and individual freedom as proposed in the *Two Sources of Morality and Religion*. Finally, it will suggest that *kairos* in Bergson's philosophical method of intuition may have been inspired by ancient Greek rhetoric under the influence of the Pythagorean tradition.

The thesis concludes with a summary of the main points and a discussion about their relevance as well as opportunities for further work.

All references to Plotinus' *Enneads* use the A. H. Armstrong translation in the Loeb Classical Library series published by Harvard University Press unless specified otherwise.

English translations of Henri Hude's 'Introduction to Bergson's Lecture on the Pythagoreans', 'Bergson's Lecture on the Pythagoreans', Henri Hude's 'Introduction to Bergson's Lectures of Plotinus' and 'Bergson's Lectures on Plotinus' have not previously been available. With kind permission of Presses Universitaires de France my translations are included as Appendices 1, 2, 3 and 4 respectively, as they are referred to in the thesis and may be of interest to Bergson scholars. Presses Universitaires de France have granted permission for them to be included in the thesis on the condition they are neither reproduced nor marketed commercially.

Chapter 1

Philosophical and Historical Background

*

Introduction

In his 'Introduction' to *A History of Pythagoreanism*, Carl Huffman remarks that the subject of the Pythagorean tradition is ignored by most scholars of ancient history (Huffman, 2014, p.1); however, it is a subject demanding recognition if we are to understand its influence on the philosophy of Plotinus and Bergson. Pythagoreanism was not simply of historical importance to the ancient Greek schools; through its effect on philosophy, science, as well as the wider culture of the respective eras in which both philosophers lived, the impact on their lives would have been significant. This Chapter therefore introduces the Pythagorean tradition and examines the extent of its influence in the eras of Plotinus and Bergson, thus providing historical context for the philosophical influence that will be proposed in subsequent chapters.

1.1 Pythagoras and Pythagoreanism

Pythagoras was acknowledged to be a mathematician, philosopher, scientist, mystic, and founder of a religious order in Croton, southern Italy. Pythagoreans were either *acusmatici*, i.e., those who only followed the tradition's ethical practices; or *mathematici* who employed themselves in mathematical or scientific study.¹ Despite

¹ For a detailed account of the differences see: Burkert, W., 1972, pp.192-208; Zhmud, L., 1994, pp.169-208.

the differences within the tradition its spiritual character permeated the whole system. It was a culture whose religious values and ethics were based on the belief in a divine cosmos ordered on 'proportion' or harmonic principles, the key to which is the function of number, hence the integration or synthesis of psychology and natural philosophy. The scientific pursuit of harmony or order in nature facilitated the attainment of the religious ideal of the unity and harmony of the soul and the divine cosmos (Guthrie, 1962, p.246).

The primary sources of information about Pythagoreanism are Aristotle, Nicomachus, Porphyry and Iamblichus, and according to Iamblichus's *Life of Pythagoras*, the concept of silence was an integral part of the religious ideal of unity, as Riedweg comments:

...the Pythagoreans saw the practice of silence not only as a way of achieving ascetic self-mastery but also for the training for the duty to keep the teachings secret. (Riedweg, 2008, p.101)

Initiates were expected to follow a vegetarian diet and to maintain physical, mental and emotional balance at all times, facilitated by the therapeutic effects of music. The primacy attributed to harmonics and music arises because Pythagoras is said to have discovered that musical intervals could be expressed as ratios, hence the Pythagorean tradition considered numerical ratios as universal principles that revealed a *harmonia*, or natural law of tonal order within their cosmology, ethics and practice of medicine.² The sciences studied by the *mathematici* included arithmetic, geometry, astronomy and harmonics; arithmetic was foundational for the other sciences, as Huffman explains:

² While it has been suggested that makers of musical instruments were aware of the ratios of the musical concords, there is no supporting evidence. For objections, see Barker, A., 1989, p.43, fn. no. 256, and Burkert, W., 1972, p.374.

... while it does have as its own proper object the counting and multiplying and dividing of objects in the world, it is also involved in each of the other sciences, insofar as their accounts of the sensible particulars are all given in terms of numbers, ratios and proportions. (Huffman, 2005, p.65)

Pythagoras wrote nothing himself and his followers obeyed a strict rule not to divulge the secrets of the tradition; however, the earliest written work of Pythagorean philosophy entitled *On Nature* was written in the late fifth century B.C. by Philolaus (470-390 B.C.). Philolaus succeeded Pythagoras by approximately one century, and while there is no evidence that he conducted experiments in harmonic science (Creese, 2010, pp.104-117) it provided the basis for his cosmogony and cosmology; its application was solely for understanding the nature of reality (Barker, 2007, p.275). Of the eleven fragments considered to be authentic (Frs. 1, 2, 3, 4, 5, 6, 6a, 7, 13, 16 and 17)³ it has been deduced that while he is not known as a mathematician Philolaus had an interest in mathematics and demonstrates knowledge of the harmonic ratios (Huffman, 1993, p.54). He also wrote on psychology, embryology and medicine. His pupil, Archytas (428-350 B.C.), a contemporary and colleague of Plato (Huffman, 2005, pp.32-42), wrote a number of works of which only a few fragments that remain are interpreted as being genuinely Pre-Socratic, i.e. not being influenced by Plato, Aristotle or their followers (Burkert, 1972, pp.144-145).⁴ The *Sectio Canonis*, a Pythagorean text attributed to Euclid, dates from the fourth century B.C.

The influence of the Pythagoreans in the ancient world facilitated the reconceptualization of scientific knowledge, politics, ethics, and hence philosophy. It is commonly accepted that Pythagoreanism was important for Plato's cosmology and

³ The surviving fragments of Philolaus are in H. Diels and W. Kranz, *Fragmente der Vorsokratiker*, 6th ed. (Berlin, 1951), I: 398-419.

⁴ The surviving fragments of Archytas' work appear in H. Diels and W. Kranz, *Fragmente der Vorsokratiker*, 6th ed. (Berlin, 1951).

political theory but was concealed in myths and allegory, a subject that has been of increasing interest to scholars of Plato. It is acknowledged that Pythagorean mathematics and harmonics was influential in key dialogues such as the *Republic*, *Timaeus*, *Critias*, *Statesman* and *Laws*, and the *Phaedo* incorporates the Pythagorean concepts of purification, reincarnation or metempsychosis, and the forms as mathematical entities (Hackforth, 1972, pp.4-6).

The Pythagorean School ebbed away after Plato, and according to Kahn, in the second and third centuries B.C. the *acousmatici* were “replaced as mendicant philosophers by the Cynics”, and the *mathematici* were “absorbed into the Platonic school of Speusippus, Xenocrates, and Polemon” (Kahn, 2001, p.72). While Pythagoras himself became a legendary figure, during this period a corpus of pseudo-Pythagorean texts emerged making it difficult to distinguish truth from fiction; however, Centrone argues that they all basically articulate the same system (Centrone, 2014, pp.315-340).

Neo-Pythagoreanism originated with Nigidius Figulus who revived Pythagorean doctrines in Rome in the first century B.C., while Apollonius of Tyana and Moderatus of Gades spearheaded the revival in Greece. The trend continued in the second century A.D. with Nicomachus of Gerasa and Numenius of Apamea who considered Pythagoreanism to be the influence behind Plato’s concepts of the *Good* and the *indefinite dyad*. Central to Neo-Pythagorean theory was the concept of the soul and a desire for mystical union with the divine.

1.2 The Pythagorean Influence in the Era of Plotinus

Key Neo-Pythagorean concepts appear in the *Enneads*, and Porphyry, Plotinus' student, writes that he was knowledgeable about Neo-Pythagorean philosophy, and even that he had been accused of plagiarising Numenius, a view that was accepted as wrong (Porphyry, *The Life of Plotinus*, 17-18,8). Porphyry refers to a book written by Longinus who comments: "Plotinus ... has expounded the principles of Pythagorean and Platonic philosophy more clearly than anyone else before him" (Porphyry, 20, 71-73). While Plotinus was highly esteemed in Neo-Pythagorean circles, Huffman suggests that Plotinus was influenced by "Neo-Pythagorean speculation on first principles"; however, it was his successors that absorbed Neo-Pythagoreanism into their philosophy. Plotinus himself was not Neo-Pythagorean because he considered Plato to be divine, not Pythagoras who he treats "as just one among many predecessors" (Huffman, 2014); however, Chapters 3, 4 and 8 will claim that Pythagoreanism is more strongly implicated in the *Enneads* than previously acknowledged.

Stamatellos comments that in the *Enneads*, Plotinus maintains that his primary influence was Plato (Stamatellos, 2007, pp.11) and as the instigator of Neoplatonism, Plotinus presents an innovative development of Platonism in which he also respectfully acknowledged, and was knowledgeable about, the theories of the Pre-Socratic philosophers who influenced Plato and Aristotle. Stamatellos writes: "His thought assimilates nearly eight centuries of philosophy and intellectual history" (Stamatellos, 2007, p.1), and referring to doxographical material in *Ennead* VI.8-9 he suggests:

... his intention [is] to show that his philosophical system is not a mere modernity but an essential continuation of Greek philosophy. ... Plotinus aims

to prove that the fundamental principles of his metaphysical system were rooted in Greek philosophical tradition and the teaching of the ancients. (Stamatellos, 2007, p.28)

Bergson expresses a similar view of Plotinus in a letter dated 31st May 1939 to Professor Charles Werner, after reading his book on Greek philosophy (Werner, 1938):

...my favorite philosopher has always been Plotinus, who in my eyes synthesizes all of Greek philosophy and who was also convinced that all Greek philosophers have said the same thing. (*Correspondances*, p.1,626)

While Plotinus' primary philosophical influence was Plato, the influence of Pythagoreanism in the wider culture of his era cannot be ignored. Joost-Gaugier's study of the Pythagorean influence on art and architecture indicates that the influence of Pythagoreanism continued for centuries after the death of Pythagoras. The sustained veneration of Pythagoras by his followers is reflected in a consistent tradition of portraits of him in both Greek and Roman sculpture. It is held that Pythagoras worshipped one God, Apollo. The cult of Apollo was established in Rome as early as the fourth century B.C., and by late antiquity Pythagoras was regarded as the son of Apollo and "thus a deity in his own right, meriting not just veneration but something approaching ritualized worship", and furthermore, that "it came to be believed that Pythagoras was the incarnation of Apollo" (Joost-Gaugier, 2007, p.137). Like Pythagoras in Greece, Apollo came to be associated with medicine and healing in Rome. In Porphyry's 'Life of Plotinus' he states that following Plotinus' death Apollo was consulted by Amelius, who desired to know where Plotinus' soul had gone (Porphyry, 22, 8). While there is no suggestion that Plotinus worshipped Apollo, or had any specific religious leanings, Joost-Gaugier notes:

Less formidable than he was in Greece, the Roman Apollo thus played a socially cathartic role in Rome, where he was accepted by all classes of Roman society. (Joost-Gaugier, 2007, p.152)

The study of harmonics conducted by the Pythagoreans and Aristoxenus⁵ was also influential in the fields of Roman architecture and mechanics. In the first century B.C. Vitruvius wrote that the architect should know music in order to have a grasp of harmonic and mathematical relations (Vitruvius, 1914, 1.1.8), and as Walden remarks: “He immediately focuses on the practical importance of ancient Greek music theory for architectural and mechanical design” (Walden, 2014, p.126), and “proposes a number of ways in which the musical-architectural theories he describes can be applied in everyday architectural practice” (Walden, 2014, p.131). Porphyry comments that Plotinus “had a complete knowledge of geometry, arithmetic, mechanics, optics and music, but he was not disposed to apply himself to detailed research in these subjects” (Porphyry, *The Life of Plotinus*, 13, 8-10), so it is not impossible that Plotinus was familiar with Vitruvius’ work.

The Pythagorean influence was also reflected in Plotinus’ lifestyle. Porphyry notes that Plotinus was a vegetarian (Porphyry, *The Life of Plotinus*, 2.5), lived an ascetic existence (Porphyry, *The Life of Plotinus*, 8, 13-24) and placed an importance on the tradition of silence in his philosophy. Plotinus was sworn to secrecy about the teaching of his teacher, Ammonius Saccas (Porphyry, *The Life of Plotinus*, 3, 24-29), and he is silent, for example, when discussing the nature of the *One*, which is his version of Plato’s *Good*. Plotinus explains that he considers it information not to be disclosed to the uninitiated:

⁵ Chapter 2.3, pp.45-46.

This is the intention of the command given in the mysteries here below not to disclose to the uninitiated; since the Good is not disclosable, it prohibits the declaration of the divine to another who has not also himself had the good fortune to see. (*Ennead* VI.9.11, 1-4)

Philosophical tradition is important to Plotinus; hence the concepts of concealment, secrecy and silence are ubiquitous in the *Enneads*. In 1919 Casel referred to the concept as ‘*silentium philosophorum*’ (Casel, 1919). Clark helpfully references Clement of Alexandria and Eunapius of Sardis as confirmation of the tradition of secrecy (Clark, 2016, p.xii):

It was not only the Pythagoreans and Plato that concealed many things, but the Epicureans too say that they have things that may not be uttered, and do not allow all to peruse those writings. The Stoics also say that by the first Zeno things were written which they do not readily allow disciples to read, without their first giving proof whether or not they are genuine philosophers. And the disciples of Aristotle say that some of their treatises are esoteric, and others common and exoteric. Further, those who instituted the mysteries, being philosophers, buried their doctrines in myths, so as not to be obvious to all. (Clement of Alexandria, *Stromata*, 5.9, in Roberts and Donaldson (eds.), 1867)

...some philosophers hide their esoteric teachings in obscurity, as poets conceal theirs in myths. (Eunapius 456, in Wright, 1921, p.357)

Plotinus also follows the tradition in considering philosophy to be an initiation into higher truths; the information is not explicitly given to the student because initiation is a journey of discovery the student has to undertake for him/herself; the philosopher is the hierophant, or the one who shows the way. We therefore find that Pythagoreanism touched every aspect of Plotinus’ life including his philosophy.

1.3 The Pythagorean Influence in the Era of Bergson

Understanding the Pythagorean influence in Bergson's era requires a brief history of developments in the years between Plotinus and Bergson.

The scientific study of the universe ordered according to musical harmonic principles continued up to the time of Johannes Kepler (1571-1630), who is regarded as the last genuine Pythagorean scientist (Kahn, 2001, pp.161-171). This shift was provoked by religious influences dating back to Galileo (1564-1642), when scientific research into so-called pagan harmonic philosophies was actively discouraged by the church. Pythagorean philosophy and science were driven underground, concealed in art and architecture, and held within secret societies such as the Freemasons.

Following Kepler, the fact that musical harmony can be expressed in terms of numerical ratios was still recognised; however, science dismissed the previously held thinking that the *Good*, telos, harmony, and musical ratios are cosmological principles governing all of reality; the focus of science became the physics and mathematics of acoustics, as noted by Gouk:

By the end of the [17th] century the notion of heavenly harmonies was no longer popular, having largely given way to acoustical studies based on the joint development of classical physics and mathematical analysis, and the harmonies of the heavens had fallen silent. Enlightenment philosophes themselves certainly claimed to have removed the need for occult principles in nature. (Gouk, 2006, pp. 228-229)

Despite this important change, music continued to influence and inspire scientific and mathematical discoveries. Marin Mersenne (1588-1648) proved the mathematical laws that pertain to the harmonic series as frequency of oscillation, and the link between music or sound and geometry was discovered by Ernst Chladni (1756-1827) a German

physicist and musician. In 1787 Chladni published an article entitled 'Discoveries Concerning the Theory of Music' in which he revealed that sound waves naturally create geometric patterns in matter. The study of 'sound made visible'⁶ uses a 'tonoscope' and is now known as 'cymatics' from the Greek κύμα (wave), so called by Hans Jenny in 1967. Cymatics is now considered both as a science and an art.⁷ Similarly, in 1827 the English physicist Sir Charles Wheatstone (1802-1875) invented a kaleidophone to make sound waves visible; he referred to it as a "Philosophical Toy" (Bowers, 2001, p.22).

Music, or more specifically musical harmonics, lost its status as a mathematical science by the middle of the eighteenth century and was henceforth considered a performing art by the scientific community; however, those studying music still considered it a science and an art. Professor William Crotch, who held the Heather Chair in Music at Oxford University, quoted Sir William Jones (1746-1794) when opening his 1831 lectures:

Music ... belongs as a science, to an interesting part of natural philosophy, which, by mathematical deductions ... explains the causes and properties of sound ... but, considered as an art, it combines the sounds which philosophy distinguishes, in such a manner as to gratify our ears, or affect our imaginations, or by uniting both objects to captivate the fancy while it pleases the sense, and speaking as it were, the language of nature, to raise corresponding ideas and connections in the mind of the hearer. It then, and then only, becomes fine art, allied very nearly to poetry, and rhetoric. (Wollenberg, S., 2006, p.6)

⁶ This phrase was used by Goethe who in 1817 in "Schicksal der Handschrift". *Schriften zur Morphologie* said of Chladni: "Who will criticize our Chladni, the nation's crowning jewel? The world owes him gratitude, since he made sound visible." (Goethe, 1817, p.51) (My translation).

⁷ There are many examples of this on the internet; however, the following is particularly impressive: Cymatics Experiment: Singing Into a Tonoscope - Mozart Una Donna a Quindici Anni. 2013. Available from: <https://www.youtube.com/watch?v=mStMS7Qcf1s>.

Advances in the sciences and mathematics during the nineteenth century were highly significant for Bergson; in fact, in the first pages of *Time and Free Will* he acknowledges them without being specific. They are however linked to discoveries regarding the electromagnetic spectrum: in 1800 William Herschel discovered infrared light; Johann Wilhelm Ritter discovered ultraviolet light in 1801; electromagnetism was discovered by Hans Christian Ørsted in 1820 and in 1845 Michael Faraday formulated the field theory of electro-magnetism.; in 1886 the physicist Heinrich Hertz detected radio waves, and later microwaves; and in 1895 Wilhelm Röntgen discovered x-ray radiation. Gamma rays were not discovered until the early twentieth century. Significant advances in mathematics were made by the French mathematician Joseph Fourier who discovered that any temporal wave that has a consistent repeating pattern or continuous function, can be broken down into an infinite sum of simpler sine and cosine waves with differing amplitudes (Fourier, 1822), and during the 1860's James Maxwell developed four partial differential equations for the electromagnetic field, and predicted an infinite number of frequencies of electromagnetic waves that all travel at the speed of light (Maxwell, 1865). These discoveries coincided with advances in the study of acoustics. Pesic, in *Music and the Making of Modern Science*, has surveyed the importance of music in science from the dawn of Pythagorean harmonics to modern quantum theories, and contends that:

...the Pythagorean theme of harmony remains potent in contemporary physics, though its harmonies are more and more unhearable, ever more embedded in its mathematical formalism” (Pesic, 2014, p.5)

He further comments:

music continues to link vibrating bodies and particle physics, for resonance is the hallmark of musical tone. (Pesic, 2014, p.280)

While Pesic describes how music influenced and inspired scientists and mathematicians from the Pythagorean era to the present day, in general, science in Bergson's day could not be taken to be consciously influenced by Pythagoreanism. The mathematics of harmonic motion studied by science ignores its musical counterpart even though, as will be demonstrated in Chapter 2, there is a correspondence between the harmonics of music and sound; hence the gap between sound studied as a science and music studied as an art remains.

The new scientific concept of a vibratory universe coincided with a revival of Pythagoreanism in the wider culture, which included part of the wave of romantic and 'traditionalist' occultism that swept Europe in the nineteenth century as a reaction against mechanical materialist science. In the Foreword to *The Pythagorean Sourcebook and Library*, Joscelyn Godwin describes how the nineteenth century "swarms with semi-Pythagoreans" following the publication of Fabre d' Olivet's *Golden Verses and commentary* in French, Taylor's *Theoretic Arithmetic* in 1816 and his translation of *Iamblichus's Life of Pythagoras*, which in 1818, formed the basis of Guthrie's version (Guthrie, 1988, p.13). In France there was a revival of the occult aspects of Pythagoreanism and an upsurge in numbers of esoteric societies that were unconnected with the natural sciences, and which were founded on Pythagoreanism and Neoplatonism, including the Theosophical Society, a middle-class spiritualist movement established by Helena Blavatsky (1831-1891) who aimed for a synthesis of science, religion and philosophy. Davis and Taylor propose:

Blavatsky's writings attempted to reframe the supposedly universal truths of mysticism in the light of contemporary scientific advances, including Darwin's account of evolution and the discovery of the electromagnetic spectrum, whose "vibrations" provided a ready model for Theosophical accounts of spiritual energy" (Davis & Taylor, 2017, p.1,390)

Similarly, Bergson claimed that scientific advances supported his theory of duration as vibrations of energy; hence as Owen remarks:

Bergson's philosophy spoke to an esoteric understanding of a reality beyond the purview of "modern Science", and complemented occultists' long-held assertions that scientific materialism was incapable of penetrating the deepest secrets of the universe. (Owen, 2004, p.137)

The Theosophical Society flourished from roughly 1860 to 1890, and its offshoot, the Hermetic Order of the Golden Dawn, was established in London in 1888 by Dr William Wynn Westcott (1843-1925), Dr William Robert Woodman (1828-1891) and Samuel Liddell Mathers (1854-1918), who all had a background in freemasonry that has historical links to Pythagoreanism. Samuel Mathers married Bergson's sister Moina in the same year, and one of the key practices of the order involved the use of the "will", as described by Mary K. Greer:

The student's goal was to unite the Will with the Highest Self. Will (with a capital W) was the consciously focused intention of one's highest, divine, or God-like Self, charged by a desire that was purified of all ego-content and actualized through an imagination that used all the senses but was untainted by material illusion. (Greer, 1996, p.57)

This goal is influenced by the mysticism of the Pythagoreans and Plotinus who argued for the mystical union of the *soul* and the impersonal *One*; however, they did not consider selfhood as medium and goal. In *The Two Sources of Morality and Religion* Bergson utilises concepts of 'self' and 'will' as applied by the Hermetic Order of the Golden Dawn, by proposing that the ultimate goal of man is to attain the status of the mystic who unites his will with the will of God or the *élan vital* (T.S.M.R., p.99). Furthermore, Bergson, Theosophy and its offshoots, such as the Hermetic Order of the Golden Dawn, share the view that the universe undergoes a spiritual evolution or

transformation, and it is purposeful evolution as opposed to Darwin who proposed a materialist purposeless theory of natural selection or adaptation to circumstances. For Bergson and Theosophy, the purpose of evolution is to be like God and act with love towards others. In *The Two Sources of Morality and Religion* Bergson defines the “great mystic” as:

an individual being, capable of transcending the limitations imposed on the species by its material nature, thus continuing and extending the divine action.
(T.S.M.R., p.220-221)

Theosophists believe in the Pythagorean theory of reincarnation, and similarly Bergson is also open to the notion of the survival of the soul after death, if not reincarnation itself. Bergson’s philosophy was therefore compared to Theosophy by members of the Society; his work was reviewed over four editions and included in two volumes of the *Theosophical Quarterly*, published in New York between 1913 and 1914. The review, authored by John Blake Jr., refers to his work in glowing terms as following the path of the Theosophist to “the divine nature, to the divine power, to righteousness and to wisdom and to light”, and significantly he remarks:

he is describing the same effort, the same experience, and his contribution, therefore, has profound significance for the student of all such searchings after Divine Wisdom. (Blake, 1913-1914, p.337)

In the second volume of the magazine the author continues his review of Bergson’s philosophy and states the following:

Some of these ideas, however, are very suggestive of the philosophy advanced by Madame Blavatsky and often called Theosophy. It was this that first attracted the writer to Bergson; and it would be gratifying to think that Theosophical ideas had so permeated the Western world's atmosphere as the result of the labors of the Society, that an intuitional philosopher could find

them available in his search after the Divine Wisdom. (Blake, 1914 (July), p.17)

While Blake does not explicitly suggest that Bergson was influenced by Theosophy, a subtle inference could be read into the quotation above. The review does however imply that the popularity of Bergson's philosophy supported the views of the Society. To my knowledge, Bergson never accepted nor denied the influence of Theosophy on him, or the influence of his philosophy on Theosophy.

Following Mathers' death in 1918, Moina headed a successor organisation, the 'Rosicrucian Order of the Alpha et Omega' (Hermetic Order of the Golden Dawn, 2017). All these orders emphasised the acquisition of secret knowledge derived through processes of 'will', education, and initiation, hence the desire to integrate science and religious belief. Bergson's desire was to integrate science and metaphysics through the same means of education and initiation. It is not suggested that Bergson was personally involved specifically with any of these occult societies; however, commentators concede that his curiosity about unexplained and hidden knowledge was an open secret⁸ and a reflection of contemporary middle-class culture.

Bergson, like his sister, was a member of the Society for Psychical Research founded in 1882 by Westcott, one of the founders of Golden Dawn, and Bergson became its president in 1913. Grogin remarks that Bergson was trying to "validate esoteric ideas through empirical and rational means. This was why he rejected the more extreme forms of the occult in favour of the empirical methods of psychical research" (Grogin, 1988, p.43). In his inaugural address as President of the Society he

⁸ Barnard, 2011, p. 251 and Lefebvre & White, 2012, pp. 297, fn.8 quote Bertrand Méheust, Who writing about mesmerism in France, in *Somnambulisme et médiumnité: Tome 1 et Tome 2*, states that Bergson's interest in the paranormal was an open secret in the society of his time.

suggested that if science had taken the psychological route rather than the mathematical, the combination of vitalist biology and the science of mind-energy could be beneficial in medicine:

there would have arisen a medical practice which would have sought to remedy *directly* the insufficiencies of the vital force; it would have aimed at the cause and not the effects, at the centre instead of the periphery; healing by suggestion or, more generally, by the influence of mind on mind might have taken forms and proportions of which it is impossible for us to form the least idea. (“Phantasms of the Living” and “Psychical Research”, in M.E., p.99)

This view of medicine, grounded in the notion of a vibratory universe and underpinned by sonorous mathematics, was gaining increasing scientific support, and develops the Pythagorean approach to healing that had a musical basis and was linked to *kairos*, as will be explained in Chapter 7.⁹

The concept of initiation was a preoccupation of every occult organisation, including the Freemasons, the Theosophists, Hermeticists and others, and a concept that retained its importance in the twentieth century. While Bergson was quietly spoken with an unassuming character, his style of lecturing could be considered an ‘initiation’ for those who heard him. In 1913 Arthur Lovejoy described Bergson’s as “the most Eleusinian of contemporary philosophies” and proposes that Bergson fulfils the “need for a, new sort of philosophic Eleusinia [that] is recurrent among the cultivated classes every generation or two” (Lovejoy, 1913, p.254). According to Synesius, Aristotle wrote, “Initiates do not need to understand anything; rather, they undergo an experience and a disposition – become, that is, deserving” (Aristotle, Synesius, *Dio*, 10, frag. 15, in, Rice and Stambaugh, 2009, p. 143), and furthermore, in

⁹ Chapter 7.2, p.218.

referring to states of catharsis Aristotle writes: “All who use these rites experience release mixed with joy” (*Politics* 8.7,1342a14, in Burkert 1987, p.19). Bergson also proposes that “joy” is attained by his method of intuition (‘Philosophical Intuition’, in C.M., pp.128-129) and the emotion attained by the mystics who possess supreme good sense (T.S.M.R., p.220). If the ultimate aim of Bergson’s philosophy is to experience the joy of the intuition of duration, he appeared to have achieved it in his writing and lectures; Le Roy, for example, described the experience of reading Bergson’s philosophy:

Mr Bergson's readers will undergo at almost every page they read an intense and singular experience. The curtain drawn between ourselves and reality, enveloping everything including ourselves in its illusive folds, seems of a sudden to fall, dissipated by enchantment, and display to the mind depths of light till then undreamt, in which reality itself, contemplated face to face for the first time, stands fully revealed. The revelation is overpowering, and once vouchsafed will never afterwards be forgotten. (Le Roy, 2005, p.3)

Grogin provides many quotes from those who attended Bergson’s lectures, some of whom, like LeRoy, described it as an emotional and even religious experience (Grogin, 1988, pp.124-126). Grogin writes:

He was more poet than orator, a man using a personal charm and magic to take possession of his listeners. Philosophy in Bergson's hands became something experienced, and students left his room as if in a dream. (Grogin, 1988, p.42)

Bergson was aware of his impact on his readers and those attending his lectures, and these accounts of the experience of Bergson’s philosophy can only lead one to conclude he intentionally continued the ancient tradition of regarding philosophy as an initiation.

Like Plotinus, Bergson was knowledgeable about music, mathematics and science. His father was a musician, a composer and teacher of music, holding positions

of Professor at the Geneva Conservatory and Head of the London Conservatory; hence music was in Bergson's blood. Before studying philosophy, Bergson completed a degree in mathematics and would have studied the history of mathematics, including Pythagorean mathematical science. It would not be unreasonable to conclude that the Pythagorean study of harmonics would have been of considerable interest to him due to his musical and mathematical background, and that he would have understood the correspondence between the mathematics of music and the mathematics underpinning the science of the electromagnetic spectrum derived from acoustics. Furthermore, it will be argued in Chapter 9 that Bergson's method of intuition could also have been influenced by his study of rhetoric, for which he won a prize (Chevalier, 1928, p.43), and that it has its roots in ancient Greek rhetoric, and the Pythagorean notion of *kairos*.¹⁰

As for Bergson's philosophical influences, he acknowledged being influenced by the philosophical tradition of French Spiritualism, particularly by Maine de Biran and Ravaisson who proposed a philosophy that opposed materialism and the notion of an impassive mind, in favour of the view that the empirical sciences could be founded on the fact that the inner psychological life is active, dynamic and correlated with the external objective world. Bergson specifically mentions Plotinus as a positive influence from ancient philosophy; however, his references to 'the Ancients' or Greek philosophy are usually limited to criticising Plato or Aristotle, and with the obvious exception of Zeno, he rarely refers specifically to Pre-Socratic philosophy, despite being fully knowledgeable about the subject. After reading Charles Werner's book on Greek philosophy he wrote to him saying:

¹⁰ Chapter 9.3, p.279.

... I was particularly struck by your conclusion that Greek philosophy has lost none of its relevance, being the necessary complement to modern philosophy. I may surprise you by telling you that I *almost* accept this idea, that Greek philosophy always interested me as much as modern philosophy, and for several years at the Collège de France, Plotinus was the subject of my course and the topic of literal explanation. ... What has always attracted me to the Greek philosophers is the atmosphere they created and which seems to me to be where philosophy must live; with them, I feel at ease. (*Correspondances*, p.1,626)

For Bergson, ancient Greek philosophy is not a “mere complement” to modern philosophy, but a philosophy that has evolved throughout the centuries. In 1900 as a Professor at the Collège de France Bergson accepted the Chair of Greek Philosophy, and as he mentioned in his letter to Charles Werner, he lectured there on Plotinus for several years. Prior to that, between 1884 and 1885 he lectured on the history of Greek Philosophy at the Université de Clermont-Ferrand. The lecture notes have now been published by Henri Hude (Hude, 2000). The timing of these lectures at Clermont-Ferrand coincides with Bergson’s work on his doctorate, awarded in 1889, and for which he produced two theses: *Quid Aristoteles de loco senserit* (On Aristotle's Sense of Place) (Bergson, H., 1889) and *Essai sur les données immédiates de la conscience* (*Time and Free Will*) (Bergson, H., 1889). Pogson, in the ‘Preface’ to *Time and Free Will* (his translation of the *Essai sur les données immédiates de la conscience*) comments: “The book itself was worked out and written during the years 1883 to 1887” (T.F.W., Preface, p.v); the overlap is therefore significant. In Hude’s publication of Bergson’s lectures on Greek Philosophy he notes that we find many of the central themes of the *Essai* in the substance of these lectures:

...firstly we find many of his familiar references. For example, Bergson made reference to Évellin’s, *Infinity and Quantity*, 1881, which he quoted in *Time and Free Will*. His course on Socrates draws heavily upon that of Boutroux on

the same subject, and so do his strong references to Zeller. Furthermore, we find the core interests, the problems and theories of Bergson's *Essai*. The Ionians are presented as physicists and most of the Presocratics are studied from the standpoint of the philosophy of science. The Eleatics are the subject of special attention (two lessons). Zeno's arguments are detailed and examined with the greatest care. (Hude, 2000, p.12)¹¹

What Hude doesn't mention is that Bergson considered the Pythagoreans superior to the Ionians and Eleatics, and in his lectures on the Pythagoreans he expressed sympathy with their number theory and incorporated their key cosmological concepts into his metaphysics. This will be explained in Chapter 6.

While Bergson did not adopt an ascetic lifestyle in the vein of the Pythagoreans or Plotinus, there are noticeable similarities in their method of philosophising, for example, we find the concept of silence within Bergson's philosophy in his method of intuition. By directing attention within we silence the external world and hence become aware of the rhythms of duration. F. L. Pogson, who collaborated with Bergson in the translation of *Time and Free Will*, writes in his 'Translator's Preface':

It is no doubt misleading to attempt to sum up a system of philosophy in a sentence, but perhaps some part of the spirit of Professor Bergson's philosophy may be gathered from the motto which **with his permission**, I have prefixed to this translation: "If a man were to inquire of Nature the reason of her creative activity, and if she were willing to give ear and answer, she would say – 'Ask me not, but understand in silence, even as I am silent and am not wont to speak.'" (T.F.W. p.viii)

Interestingly, Pogson keeps his own silence about acknowledging this quotation comes from Plotinus, *Ennead* III.8.4, 1-3. It is not known whether this was at Bergson's

¹¹ Appendix 1, p. 2

request or whether it is nothing more than an implicit reference to the similarity between them.

Ancient philosophy therefore appears to have retained an important place in Bergson's life, through his family, his education, the wider culture, where his philosophy was considered similar to Theosophy, and via his affinity with Plotinus.

Conclusion

Bergson and Plotinus had much in common; they both lived in eras when Pythagoreanism was experiencing a revival, and while Plotinus believed and acknowledged he was following Plato in adopting Pythagorean philosophy, Bergson acknowledges Plotinus as his favourite philosopher, and even that Plotinus is linked through Plato to Pythagoreanism (T.S.M.R., p.219) without acknowledging any direct or indirect Pythagorean influence on himself. The following Chapters will argue that both philosophers implicitly and *intentionally* incorporate Pythagorean concepts into their respective philosophies: Plotinus more than has previously been accredited to him, and Bergson whose Pythagorean influence has not been taken seriously and therefore recognised as significant by modern commentators. These arguments must be appreciated alongside the philosophical and historical context presented here. Chapter two will set the stage by explaining the key Pythagorean concepts that are implicit in the philosophy of Plotinus and Bergson.

Chapter 2

The Pythagoreans - The Generation of Multiplicity

*

Introduction

Bergson followed Plotinus who was influenced by an understanding of Pythagorean philosophy that he considered to be a philosophy of transformation in which multiplicity is generated from an original unity. This Chapter examines the generation of multiplicity from a Pythagorean perspective to build a foundation for assessing the influence of the tradition on Plotinus and Bergson. It provides an important, but necessarily brief, introduction to the concepts central to Pythagorean cosmogony and cosmology, and which will be referred to in subsequent chapters: Nature, the Principles of Limiting and Unlimited, Harmonia (ἁρμονία), and the function of the Pythagorean *Monad* in their number theory. Much of the evidence comes from Philolaus; however, we cannot be certain of the extent to which his views are typical of the school. This is followed by a brief history of Pythagorean harmonics and number theory, and a basic introduction to the Pythagorean science of harmonics. Finally, it will discuss the notion that since numbers are implicit within the science of harmonics, the Pythagoreans conceived numbers as powers.

2.1 Pythagorean Cosmogony and Cosmology

The Pythagorean Philolaus wrote a treatise *On Nature* (Περὶ φύσεως) that begins as follows:

Nature in the world-order [*cosmos*] was fitted together out of things which are unlimited and out of things which are limiting, both the world-order as a whole and everything in it. (Fr. 1, in Huffman, 1993, p.37)

This opening statement introduces the concept of nature (φύσις) as well as the principles that underpinned his philosophy: world order (*cosmos*), fitting together (*harmonia* or ἀρμονία), and things which are limited (ἄπειρα) and limiting (περαίνοντα). Kahn (Kahn, 2001, p.24) and Mourelatos follow Huffman in translating “ἄπειρα” and “περαίνοντα” as “limited things” and “limiting things” respectively, and Mourelatos explains that it is Philolaus’ intention “to classify ... all existing things under these two broad types” (Mourelatos, 2009, p.66). There is consensus that *cosmos* refers to a world that is structurally organised; however, since Philolaus does not provide definitions in his work, there is considerable debate and little consensus about the exact meaning of ‘nature’, ‘unlimited’ and ‘limiting’ things, as well as *harmonia* with the association of number and musical harmonics. These concepts and the debate surrounding them will be examined in the following sections.

2.1.1 Nature (φύσις)

Huffman discusses the various interpretations of ‘nature’ including: “real constitution” as used by Heraclitus in the Pre-Socratic sense; “growth” that can be activated in certain contexts (e.g. Empedocles Fr.8); “genesis” and “all that exists”. Huffman

dismisses the interpretation of “all that exists” Burkert (Burkert 1972, pp.250, n.58; 274) and Holwerda (Holwerda, 1955, p.78) as erroneous because it is based on a presocratic reading of nature that does not account for the fact that Philolaus “specifies two areas in which Nature is being considered, in the cosmos as a whole and in the case of individual things in it” (Huffman, 1993, pp.96-97). Furthermore, Huffman argues that in Fragment 6 Philolaus states:

Concerning nature and harmony the situation is this: the being of things, which is eternal, and nature in itself admit of divine and not human knowledge ... (Fr. 6, in Huffman, 1993, pp.123-124)

Therefore “nature itself” in F6 is paired with “the being of things” (Huffman, 1993, p.97). The view of Viltanioti who refers to Naddaf’s dynamic reading of nature as growth, is, as we will see in subsequent chapters, more in line with the philosophy of Plotinus and Bergson:

Phusis must be understood dynamically as the real constitution of a thing as it is realized from beginning to end with all of its properties. This is the meaning one finds nearly every time the term *phusis* is employed in the writings of the pre-Socratics. *It is never employed in the sense of something static*, although the accent may be on either the *phusis* as origin, the *phusis* as process, or the *phusis* as result. All three, of course, are comprised in the original meaning of the word *phusis*. (Naddaf, 2005, p.15)

Viltanioti comments: “The Pre-Socratics conceive φύσις as essentially dynamic or powerful ... realized by a transition to a different status of itself” (Viltanioti, 2012, p.26). Philolaus’ claim that nature is produced from the combined action of unlimited, limiting principles and *Harmonia* differs from his Pre-Socratic predecessors, who explained nature in terms of individual elements or groups of elements such as earth,

water, air or fire; however, the interpretation of powers in nature means Philolaus' concepts may be understood as such and will be examined next.

2.1.2 The Principles of Limiting (*ἄπειρα*) and Unlimited (*περαίνοντα*)

In Fragment 6, Philolaus refers to the “pre-existence” of limiters and the unlimited, emphasising the ontological priority he clearly gives them; not to ‘number’ as stated by Aristotle in *Metaphysics* 985b32. Philolaus' reference to unlimited and limiting as “things” in Fragment 1 quoted above, has meant that commentators have disagreed about their nature, and the table below demonstrates the variety of interpretations:

<u>Author</u>	<u>Unlimited</u>	<u>Limiter</u>
Boeckh ¹²	Indefinite Dyad	The One
Kirk et al. ¹³	Even Numbers	Odd Numbers
Burkert ¹⁴	Empty interstices between atoms	Material atoms
Raven ¹⁵ /Guthrie ¹⁶	A basic principle of number	A basic principle of number
Barnes ¹⁷ Hussey ¹⁸	Various kinds of ‘stuffs’(matter)	Geometrical shapes (form)
Huffman ¹⁹	A continuum without boundaries	Provider of boundaries

Viltanioti's argument, that Philolaus considered nature as dynamic implies that unlimited and limiters are powers to act rather than ‘things’ that ‘act’ or ‘things’ that

¹² Boeckh, 1819, p.54

¹³ Kirk, Raven, & Schofield, 1983, p.326

¹⁴ Burkert, 1972, pp.258-259

¹⁵ Raven, 1981

¹⁶ Guthrie, 1962, pp.240

¹⁷ Barnes, 1979, p.86

¹⁸ Hussey, 1997, p.61

¹⁹ Huffman, 1993, pp.37-53

‘are’. She proposes that limiters possess the active power to limit and the unlimited possesses the passive power to be limited; powers “dispose their possessor to be or act in a specific way” and therefore differ from their bearers; hence “What the “things that are” do, or can do, depends on the powers they have”, and the powers of limiting and being limited have varying proportions (Viltanioti, 2012, pp.15-16).

Aristotle (*Metaphysics* 986a22), refers to a table of opposites that the Pythagoreans considered to be principles of reality:

limit	unlimited
odd	even
unity	plurality
right	left
male	female
rest	motion
straight	crooked
light	darkness
good	bad
square	oblong

There is no evidence that Philolaus included this table in *On Nature*, nor does there appear to be any obvious relationship of the columns to limit and unlimited which appear at the top, e.g. we cannot assume that odd, male or good are considered as limit. However, by interpreting limit and unlimited as powers, the other opposites may be understood as examples of how the principles of limit and unlimited apply to qualities that have the powers to act either passively or actively on each other in our experience.

2.1.3 Harmonia (ἁρμονία)

Philolaus' third principle is *harmonia*, the principle that fits together the limiters and unlimited:

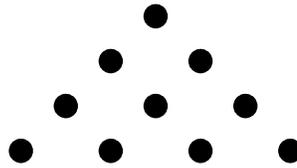
But since these beginnings [limiting and unlimited] pre-existed and were neither alike nor even related, it would have been impossible for them to be ordered, if harmony had not come upon them, in whatever way it came to be. Like things and related things did not in addition require any harmony, but things that are unlike and not even related nor of [? the same speed], it is necessary that such things be bonded together by harmony, if they are going to be held in an order. (Fr. 6, in Huffman, 1993, p.124)

Barnes notes that the action of *harmonia* is a “force”; the active, creating, regulating force in nature (Barnes, 1979, pp.15-16).

2.1.4 The Pythagorean *Monad*

The importance of number for the Pythagoreans was represented in their sacred symbol, the *tetractys* (Figure 1), which they considered to be “The source and root of everflowing nature (Burkert, 1972, pp.54-56), hence it represented the generative nature of reality. It is also a graphic description of the structural order or numerical organisation within the nature of sound because it contains the harmonic ratios that underlie the mathematical harmony of the musical scale: the octave (1:2), the fifth (2:3) and the fourth (3:4).

Pythagorean *Tetractys* (Figure 1)



The sum of the numbers of the *tetractys*, 1, 2, 3, and 4 is ten, the base of all number, and according to Aristotle, ten was “considered to be perfect and to embrace the whole nature of number” (*Metaphysics* 986a 8). Similarly, Stobaeus notes:

The power, efficacy and essence of number is seen in the Decad; it is great, it realises all its purposes, and it is the cause of all effects. The power of the Decad is the principle and guide of all life, divine, celestial, or human into which it is insinuated; without it everything is unlimited, obscure, and furtive. (Stobaeus, *Eclogae*, 1.3.8, (DK 11), in Guthrie, 1988, p.171)

In this fragment the decad appears to have been understood to have a limiting role in the generation of multiplicity; however, while there is a consensus that the *tetractys* is early Pythagorean the importance of the decad is disputed. Zhmud comments that we cannot regard Aristotle as representing authentic Pythagorean doctrine; he argues that Aristotle was influenced by Speusippus’ work “On the Pythagorean Numbers” which was inspired by Pythagorean arithmology, and:

... it is very likely Speusippus who made a decisive step in the identification of the early τετρακτύς with the number ten” (Zhmud, 1998, p.263).

The Stobaeus’ fragment quoted above is also most probably based on a Platonic interpretation of the *tetractys*.

There is no current consensus on the exact nature of the Pythagorean *Monad* due to a lack of source material and Schibli has comprehensively characterised the debate

(Schibli, 1996, pp.114-130). While Zhmud suggests that Philolaus developed an epistemological, rather than ontological, theory of number (Zhmud, 1998, pp.256), Schibli, supported by Schrenk (Schrenk, 1994, pp.171-190), proposes that unity is generated by a harmonia of the limited and unlimited or odd and even, which conforms to Philolaus statement that the ‘world order’ was fitted together out of limiters and the unlimited, dual principles. Aristotle asserted that the Pythagoreans identified the limited with the odd, and the unlimited with the even elements of number. The *Monad* or one, the starting point of the number series, is both odd and even because it consists of both; and number is derived from Unity (*Metaphysics*, 986a 17-21). This view is supported by Huffman (Huffman, 1993, p.186), and according to Cornford, the tetractys should be considered as symbolising “the evolution of the many out of the One”, analogous to earlier “mythic” and “scientific” cosmogonies:

There is (1) an undifferentiated unity. (2) From this unity two opposite powers are separated out to form the world order. (3) The two opposites unite again to generate life.

From this explanation, the *Monad* is the undifferentiated unity of the odd and even and should not be considered the first number because: “the Monad is prior to, and not a resultant or product of, the two opposite principles”. The first even number is 2 and the first odd number, 3 (Cornford, 1923, pp.2-4). However, this raises an important question: Is there a ‘One’ or originating source of the *Monad* or *tetractys* that could be understood as the ultimate source of power from which the powers of the unlimited and limiting are derived?

In his account of the history of the doctrine of the One between the late fourth century B.C. and the third century A.D., Dodds proposed that in this scenario the *Monad* appears to be duplicated in the dyad:

...in Aristotle's references to the Pythagoreans there is no trace of any such duplication of the One; and the antithesis of the One and the Indeterminate Dyad is Platonic, not Pythagorean.

Dodds argues that the notion of multiple 'Ones' originated in the first century A.D. with Moderatus of Gades and was based on a Pythagorean interpretation of Plato's Parmenides rather than authentic Pythagorean doctrine (Dodds, E.R., 1928, pp.136-137).²⁰

While the tetractys symbolises the Pythagorean fundamental principle that embodies a unity that accounts for everything, in Philolaus' cosmology it is linked with a central or fire hearth:

The first thing fitted together, the one in the centre of the sphere, is called the hearth. (Stobaeus, *Eclogae*, 1.21.8, Fr.7, in Huffman, 1993, p.62)

There is considerable controversy over Aristotle's interpretation of natural bodies, and hence 'the one in the centre' being a construction (*Metaphysics*, 1091a 15). Huffman interprets the central fire as "...the one in so far as it is the primeval unity, the paradigm case of unity in the cosmos" (Huffman, 1993, p.211), while Kahn (Kahn, 2001, p.27) and Schibli (Schibli, pp.119-122) propose that it is the first integer, a view contested by Huffman because the central fire is "more than a bare monad with position; it is also fiery and orbited by ten bodies" (Huffman 1993, p.205). According to Stobaeus, Philolaus referred to the hearth as "the Guardpost of Zeus, the Mother of the Gods, the Altar, the Link, and the Measure of Nature" (Stobaeus, *Eclogae*, I.22.1, in Guthrie, 1988, p.170). None of these terms suggests it to be an original divine source of unity because in Greek religion Zeus was the supreme deity, the king of the

²⁰ See also: Rist, 1962.

gods who, while having a mother (Rhea) and father (Cronus) himself, became known as the Father of the Gods. Since Philolaus states that limiting and limiters pre-exist the one, or ‘the first thing fitted together’, the ‘one’ here, considered the *Monad* as symbolised by the *tetractys*, must be the first rational power source of everything else, not the highest principle that is beyond being as is the case in Plotinus’ ‘One’. There has been a tendency to conflate hearth and fire; however, if hearth is considered a ‘place’, as Cornford appears to suggest it is in Fragments 146-7 of Empedocles (ca. 495-435 B.C.) (Cornford, 1912, p.229), it is reasonable to consider the hearth to be the place of fire and the *Monad* to be the place containing the creative power of the first unity of the limiting and unlimited, i.e. *harmonia*. Simplicius also considers the central fire in terms of ‘power’:

the more genuine adherents of the school mean by fire at the centre the creative power which animates the whole earth from the centre and warms that part of it which has grown cold. (Simplicius, *De Caelo* 512.9, in Guthrie 1962, p. 290)

There is no evidence that the Pythagoreans conceived the *Monad* or numbers as having a mediating role between the physical world and a transcendent world of first principles, other than thinking in terms of the powers of the limiting and unlimited. This appears to be a project developed by Speusippus (410-339 B.C.) and subsequently Xenocrates (396-314 B.C.), and it was not until the first century B.C. that the Neopythagoreans, Eudorus of Alexandria and Moderatus of Gades, developed a henology organised as serial emanations of the divine *One*.²¹ Chapter 3 will argue that Plotinus places the unity of the *tetractys* or the Pythagorean *Monad* as a distinct

²¹ For a detailed history of the historical development of the theory of the *Monad*, see: Albertson, 2014, Chapters 1 and 2.

generative power of everything in the universe at the level of ‘Being’, not the *One*; hence he follows Plato and his Neo-Pythagorean predecessors in attributing this view to the earlier Pythagorean tradition.

Having ascertained the Pythagoreans conceived the harmonic ratios of the musical scale to be unified in the *Monad* and therefore implicit to the structural order in the universe²², the following section will briefly explain the concepts of Pythagorean harmonics and number theory.

2.2 A Brief History of Pythagorean Harmonics and Number Theory

Music has been culturally important for man since pre-historic times. The oldest musical instruments found date from around 40,000 B.C. (Higham, T., et al., 2012, pp.646-676) and Sachs suggests that because “only man is gifted with conscious rhythm” they evolved as the result of the human motor impulse to add sound to emotional movements such as dancing, to “express emotion as motion” (Sachs, 1940, pp.25-26). Musical instruments were later used in rituals during hunting and religious ceremonies (Rault, 2000, p.34). In ancient Greece, music was an integral part of life and intimately linked to their mythology. The lyre, aulos (a double piped reed instrument), and kithara, played by professional musicians, were the three main instruments, played either alone, or as accompaniment to singing, dancing, or recitation in religious ceremonies, festivals and sporting contests. The playing of musical instruments and the study of musical composition and performance has a long history, and while Aristoxenus (430 B.C.), in his *Elementa Harmonica*, refers to empirical

²² See p.37.

musical theorists as *harmonikoi*, he clearly distinguishes their study from Pythagorean harmonic science as well as his own.²³ There is no evidence to support the theoretical study of harmonics as a science of the tuning of musical scales prior to the Pythagoreans. Xenocrates (396-314 B.C.), pupil of Plato and leader of the Academy after Speusippus, is one of the earliest sources to attribute to Pythagoras the discovery that musical intervals could be expressed as ratios:

Pythagoras discovered also that the intervals in music do not come into being apart from number, for they are an interrelation of quantity with quantity. So he set out to investigate under what conditions concordant intervals come about, and discordant ones, and everything well attuned and ill attuned. (Heinze, 1892, Fr. 87, in Zhmud, 1994, p.291)

The story of how Pythagoras discovered the intervals or ratios of the musical scale is described in Nicomachus' *Manual of Harmonics* (Levin, 1994, pp.83-85), and reproduced in Iamblichus' *The Life of Pythagoras* (Guthrie, 1988, pp.61-65). As Pythagoras was passing a blacksmith's he was moved to investigate musical intervals on hearing the notes produced by the sounds of differing size hammers striking an anvil. He determined the weights of the hammers were responsible for the differences in the notes and concluded that simple ratios (*logoi*) accounted for the concordant sounds. While this story has been discredited on technical grounds, Burkert notes that from the evidence available, only Hippasus can be linked to music theory before Philolaus (Burkert, 1972, p.295). This evidence comes from Aristoxenus who claims Hippasus of Metapontum made four discs of equal diameter but with different thickness, whose pitches make up the basic intervals of the octave (2:1), fifth (3:2) and fourth (3:4) (Wehrli, 1967, pp.32-33, fr. 90). Zhmud, however, comments that:

²³ See Barker, 2007, pp.33-67 for a detailed discussion of Aristoxenus' comments on the *harmonikoi*.

Hippasus' experiment is too complex to be a first attempt ... It was conducted in order to confirm what Pythagoras had already discovered, most likely by observations and experiments with a stringed instrument" (Zhmud, 1994, pp.291-2).

While we cannot be certain of the instrument(s) used by Pythagoras, it is known that later Pythagoreans experimented with the monochord that consisted of a sound box over which a single string was raised and stretched between fixed bridges [nodes]²⁴ at either end with a movable bridge between, allowing the string to be divided at any point and plucked (Creese, 2010, pp.3-4).

With its single string, movable bridge and graduated rule, the monochord (kanon) straddled the gap between notes and numbers, intervals and ratios, sense –perception and mathematical reason. By representing musical sounds as visible, measurable distances (lengths of string) and by representing numbers audibly to the musical ear, it offered a way to study music as an arithmetical science through the medium of geometry. (Creese, 2010, p.vii)

From the end of the fourth century B.C. the theoretical study of harmonics split into two traditions with differing presumptions, method and purpose: the Pythagorean tradition and the 'experiential' tradition. Barker helpfully describes the key differences in their approach and a summary is provided below.

The Pythagorean Tradition

Apart from Pythagoras the three most prominent figures in the Pythagorean tradition in terms of harmonics were Philolaus, Archytas and Euclid who considered notes as

²⁴ Brackets mine.

entities, the pitch of which: "... varies quantitatively, and can be expressed as numbers". Intervals are taken as ratios, not points on a line measurable as linear distance. The method and language of analysis is mathematical, rather than musical. Mathematics "re-identifies" the notes perceived "as movements in a material medium. It is to these movements that the quantitative characteristics can be attached directly." Number, and especially that of mathematical harmonics, is fundamental for understanding the rational order inherent in the whole universe, not simply the ordering principles of musical melody (Barker, 2007, p.8). Music is considered an expression of philosophical truth.

The Experiential Tradition

Aristoxenus was a leading figure within the 'experiential' tradition. He was a practicing musician from Tarentum, southern Italy who travelled to Athens to study Pythagorean harmonics with Xenophilus before becoming a pupil of Aristotle. His *Elementa Harmonica* analyses the principles of musical structure inherent in melody understood through perception rather than the focus on tuning and the formal or mathematical structure of ratios as advocated by the Pythagoreans, and he does not link it to physical causes such as the movement of air, rate of vibration or musical ratios. Notes are considered as linear magnitudes that lie on a continuum of pitch, and the intervals or distance between them are only referred to in musical terms such as tones or half-tones etc. The essential ordering principles are taken from the data perceived by a "trained musical ear" that listens for melodic sequences (Barker, 2007, p.4).

Aristoxenus is valuable for clarifying aspects of the Pythagorean tradition that remain open to interpretation because of the scarcity of authentic Pythagorean sources,

and as we will later discover in Section 2.4, the science of harmonics as studied by the Pythagoreans and Aristoxenus includes the concept of ‘power’, which they interpret differently.

2.3 An Introduction to the Pythagorean Science of Harmonics

The science of harmonics is complex; therefore, to simplify it as much as possible an explanation of the basics will assist those unfamiliar with musical concepts.

Pythagorean harmonic science was the study of *intervals*. An *interval* is the difference in pitch between two notes, i.e., the relationship of the higher note to the lower note. They are considered harmonic if two notes are played simultaneously, e.g. C and G together; and melodic if the notes are played successively, e.g. C then G.

Division of the Monochord (Figure 2)

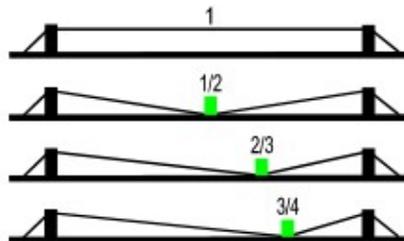
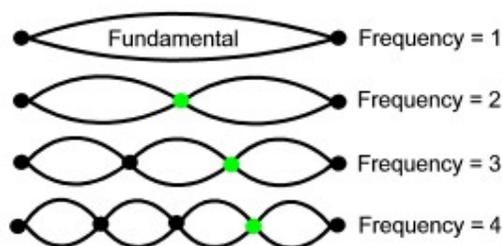


Figure 2 illustrates how harmonics are generated when dividing the string on a monochord. When the undivided string is held between two nodes and plucked it produces the fundamental note (1:1), also known as unison or the first harmonic. Dividing the plucked string in two in the ratio 2:1 or 1:2 produces the second harmonic, an exact replica of the fundamental, but one octave higher (2:1) or lower (1:2). Dividing the string in thirds, in the ratio 3:2 (ascending scale) or 2:3 (descending scale) produces the third harmonic, which is known as the fifth above or below the octave.

Dividing the string into fourths, in the ratio 4:3 (ascending scale) or 3:4 (descending scale) produces the fourth harmonic, known as the fourth or 2nd octave. References to fourths and fifths are musical terms and must not be confused with the fractions 1/4 and 1/5. The essential point is the three intervals of octave, fourth and fifth are regarded as concordant and primary, the elements out of which any musical scale or composition is built (Guthrie, 1988, pp.24-29). What gives each *note* its identity is not its pitch or name, but the relations in which it stands to others in the system. A Pythagorean diatonic, (διατονικός) scale, which means ‘progressing through tones’, unfolds successively in time and is a series of seven notes that divide an octave set out in order of pitch and the intervals between those pitches. While musical scales are themselves melodic, they are also the building blocks of *melody*. A *melody* is a continuous succession of notes and intervals forming a distinctive sequence that is considered musical and based upon a structure of attunement and scales considered *a priori* by the Pythagoreans. While the structure is invariable melodies can be infinitely variable. The fact that we can identify the same melody in different keys (transposition), demonstrates that melodies are perceived as being made up of intervals rather than of notes (Trehub, 2014, pp.163-164).

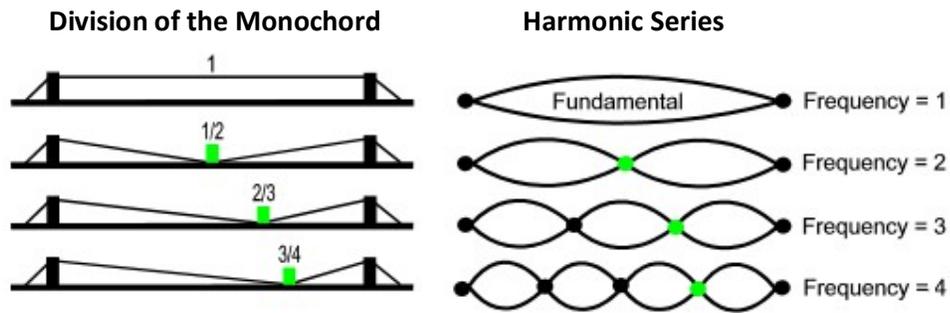
The divisions of the monochord correspond to the physical properties of a string that when plucked vibrates and produces a series of harmonics as illustrated in Figure 3.

Harmonic Series (Figure 3)



In terms of the physics of acoustics, when a single string is plucked its vibration naturally produces a series of harmonics or nodes, making a *note* a compound tone. First the string vibrates as a unit, then in two parts, then in three parts, four and so on. These frequencies are integer multiples of the fundamental. Significantly, these divisions result in an integrated series, not discrete harmonics, and each overtone becomes a ‘fundamental’ that has its own harmonic series. In effect the vibration of the string generates new nodes or harmonics itself (Gunther, 2012, pp.21-22). Since the string represents an indefinite continuum of intervals or tonal flux that may be infinitely divided, in theory the harmonics are infinite in number. Placing Figures 2 and 3 together illustrates how harmonics (green nodes) produced geometrically by dividing the string on a monochord correspond to the harmonics produced dynamically by a vibrating string (Figure 4).

Geometrical and Dynamic Correspondence of Harmonics (Figure 4)



While today an interval can be determined spatially, i.e. on a musical instrument or musical score, as continuous by perception, or dynamically as vibrations, it must be noted that the early Pythagoreans had no way of measuring vibrations accurately and did not specifically study the harmonics of vibrating strings. It was not until Euclid (c.330 B.C.) that the correspondence of physical distance and the musical ratios was considered in terms of vibrations. In the *Sectio Canonis* (Division of the Canon) Euclid

demonstrated the harmonic ratios or intervals have speeds of vibration which are inversely proportional to the length of string, i.e. a shorter string produces faster vibrations, and a longer string, slower vibrations.²⁵ This text provides a basis for a mathematical solution to the subject of physical acoustics and was a development of Archytas' incorrect theory (Fragment 1) that provides a physical explanation of pitch in terms of the speed at which sound travels through the air. He proposed sound is dependent on the force of the impact of things in motion, and the speed at which they are traveling determines the pitch of the sound. A faster speed produces a higher pitch, and a slower speed a lower pitch (Huffman, 2005, p.106).

According to Pythagorean harmonics *harmonia* refers not to harmony as we commonly understand it, but to concordant intervals of a musical scale that are 'fitted together' or interlocked according to proportions of an unequal ratio. Guthrie, quoting Cornford, explains how this may be interpreted in terms of limit and unlimited:

The whole field of sound, ranging indefinitely in opposite directions - high and low - represents the unlimited. Limit is imposed on this continuum when it is divided according to the relevant system of ratios, which reduces the whole to order, starting from the octave (sc. 1:2, the unit and the first even number, both of which have their places in the table of archai). 'The infinite variety of quality in sound is reduced to order by the exact and simple law of ratio in quantity. The system so defined still contains the unlimited element in the blank intervals between the notes; but the unlimited is no longer an orderless continuum; it is confined within an order, a cosmos, by the imposition of Limit or Measure'. (Guthrie, 1962, p.248)²⁶

²⁵ For a comprehensive analysis and discussion, see: Barker, 2007, pp.364-410.

²⁶ See also: Cornford, 1922, p.145.

If Guthrie is right, we could understand Philolaus' reference to the imposition of limit on the unlimited as 'measure' in terms of the ratios implicated in *harmonia*. I return to Barker's interpretation of measurement as quoted on page 43: "Notes are considered as entities, the pitch of which, ... varies quantitatively, and can be expressed as numbers" and that intervals are taken as ratios, not as points on a line that can be measured as linear distances. In the *Republic* Plato states the Pythagoreans, "wasted their time measuring audible concords and notes against each other" (531a) and they looked "for numerical relationships in audible concords" (531c). Pythagorean measurement therefore focused on relative values of the audible intervals that are expressed as ratios, not absolute distances between string lengths. Similarly, the Euclidean *Sectio Canonis* refers to ratios of the musical intervals (*diastemata*) themselves. Whereas the measurement of absolute distance increases as the distance increases, relative measurement means that a smaller ratio is attributed to a larger interval. Having found a correspondence between interval and ratio when experimenting with different instruments they concluded that the ratios are inherent in the intervals themselves.

For the Pythagoreans the cosmos consists of ten heavenly bodies, including the central fire, situated in the centre, and the five planets, sun, moon and Earth in the outer sphere of the fixed stars. According to Aristotle (*Metaphysics* 986a3) a Counter-Earth was added to complete the ten of the *tetractys*. Kahn remarks while it is not explicit in Philolaus, the inference is:

...that the periodic motions of these bodies around the central Hearth somehow instantiate the ratios of musical concord, so that their revolutions produce the cosmic music of the spheres. (Kahn, 2001, p.26)

Guthrie proposes “they believed the ratios of their relative distances to correspond to recognized musical intervals ... of the diatonic scale” (Guthrie, 1962, p.289).²⁷

If the Pythagorean *Monad*, the source of multiplicity, is a power generating the fundamental tone, it has no location on the string itself, ignoring the fixed nodes. It is however omnipresent to the multiplicity that is generated in a linear sequence by fixed locations on the fundamental. This reasoning was applied to their notion of an unseen central fire around which the planetary bodies are situated and move according to the laws of harmonics; however, as Maconie notes there appears to be a “discrepancy” in the representations:

... contradictions [that] can be interpreted as differences in reference, aural convention focusing on the omnipresence of the fundamental, whereas visual convention, interpreting for example the observed motions of heavenly bodies as the expression of harmonic laws, having to attribute a pivotal location to the fundamental, while acknowledging the power of the centre to influence the motions of planetary bodies at a distance. (Maconie, 1997, pp.121-122)

Whether the harmonic laws are interpreted from an aural or visual perspective, power (*dynamis*) appears to be implicated in both and is intimately linked to number.

2.4 Number as *Dynamis*

Before examining how *dynamis* (δύναμις) and number are intimately linked in the Pythagorean tradition, it is pertinent to explain how Aristoxenus considers the notion of *dynamis* in his experiential theory of harmonics as it was central to his arguments.

²⁷ Huffman, 1993, pp.279-283 notes that no early Pythagorean documents exist that explain how the musical scale corresponds to the astronomical system.

Aristoxenus proposed that melody is capable of being created according to natural order (Aristoxenus, *Elements of Harmonics*, 1.24 -2.3), and while he does not treat harmonics in any metaphysical or cosmological sense, he argued that power (*dynamis*) is fundamental for a well attuned melody and that it is encountered both in perceptual experience and when thinking about it. Without the power “the attunement is destroyed” (Aristoxenus, *Elements of Harmonics*, 1.19). Barker offers a comprehensive analysis of Aristoxenus’ concept of *dynamis* (Barker, 2007, pp.175-192) and comments: “So far as we know, Aristoxenus was the first theorist to give the term *dynamis* a special application in harmonics” (Barker, 2007, p.184). According to his interpretation, *dynamis* refers to notes, not intervals.

[Notes] ...have a kind of ‘power’, which determines features of the route that the voice can take next, and the pattern of relations into which its subsequent movements can fall. It is not just a fixed point, a pitch, but something with its own dynamic properties, which (for example) impel the voice to move next, in its melodious trajectory... (Barker, 2007, p.188)

Levin explains that *dynamis* is essentially qualitative and implicated in the infinite continuum and succession within melody; hence “This crucial power is understood by Aristoxenus to be continuity (συνέχεια)” (Levin, 2009, pp.88). For Aristoxenus, continuity arises due to the individual notes that do not move, as well as the intervals between them in which the voice rises or falls, and he does not consider this motion a movement of the voice, but a motion determined by natural laws that are implicit in musical sound (Aristoxenus, *Elements of Harmonics*, 1.10):

When, however these single units or notes are compounded into scales and modes in which each is assigned a particular function (*dynamis*), something miraculous happens, ... a gravitational field of motion is released within the

scale, the distinctive characteristics of which are transferred to any melody that is composed according to the laws of that particular scale. (Levin, 2009, p.112)

Barker comments that Aristoxenus does not explain how the notes as powers could be integrated within the melody; however, Levin suggests that Aristoxenus does consider integration in the mind as the creative or generative process of melody. She refers to it as an *a priori* or innate notion of *synesis* (musical intuition), a combination of aural perception and mental apperception, and notes that Laloy (Laloy, 1904, p.164) describes it as "une sorte de kantisme inconscient", or a Kantian aesthetic (Levin, 1972, p.229).²⁸ For Aristoxenus, this involves the ability to hear, remember and distinguish:

It is clear that to understand (*xynienai*) melodies is to follow, with both hearing and thought (*dianoia*), the things that are coming into being in respect of all their distinctions. For melody consists in coming-into-being (*genesis*), just as do the other parts of music. Understanding (*xynesis*) of music arises from two sources, perception and memory; for one must perceive what is coming into being, and remember what has come into being. It is not possible to follow the contents of music in any other way. (Aristoxenus, *Elements of Harmonics*, 38.27–39.3, in Barker, 2007, p.172)

This quotation bears a remarkable similarity to Bergson's arguments for perception that will be examined in Chapter 9.

We cannot be certain that *dynamis* within the science of harmonics originated with Aristoxenus; however, it is unlikely if the Pythagoreans considered intervals to be powers. It is possible that he merely adopted the concept having learned of it from Xenophilus and applied it to suit his own theories of melody. It therefore appears likely that in the science of harmonics *dynamis* was ontologically and epistemologically significant, both for Aristoxenus and the Pythagoreans.

²⁸ See also Levin, 2009, pp.116-117 and Barker, 2007, p.168-175.

Number as the power to connect is the key notion in Pythagorean harmonics, and as previously mentioned, the ratios represent the intervals between notes, not the notes themselves. While there is no written evidence directly referring to the intervals as *dynamis* it is reasonable to conclude that they considered the intervals to possess qualitative powers, just as the qualities in the table of opposites have varying proportions and can be viewed as examples of how limit and unlimited are powers to act rather than ‘things’ that ‘act’ or ‘things’ that ‘are’.

The Pythagorean, Philolaus, stated the following:

And indeed all things that are known have number. For it is not possible that anything whatsoever be understood or known without this. (Fr. 4, in Huffman, 1993, p.172)

Number, indeed, has two proper kinds, odd and even, and a third from both mixed together, the even-odd. Of each of these two kinds there are many forms, of which each thing itself gives signs. (Fr. 5, in Huffman, 1993, p.178)

One may speculate that we can have knowledge of things because they give “signs” of the power inherent in the number itself. It is possible that Philolaus’ “signs” are associated with number symbolism as noted by Aristotle, who writes that the Pythagoreans linked numbers with justice, soul and mind, as well as time (*kairos*) (*Metaphysics* 985b 29). Alexander also tells us that the Pythagoreans linked 4 with justice, 5 was considered a harmonia, a marriage or fitting together of the odd and the even, the two and the three; and 7 with opportunity (*kairos*) (Alexander of Aphrodisias, *Metaphysics* I, 38, 8-18, in Dooley, 1989). Opportunity is present in the ending of the old and start of the new, just as the seventh note of an octave marks its end, before the cycle repeats. The Pythagoreans did not distinguish between form and matter, causing Aristotle to ask, “How indeed can qualities white, sweet, hot be numbers?” (*Metaphysics*, 1092b 15). The idea of linking number to qualities is often derided as

number mysticism or symbolism; however, it is more understandable if number is considered in the same vein as the qualities listed in the table of opposites, of which we understand the meaning. While *dynamis* is in the ratios as the unlimited nature of intervals, the Pythagoreans considered the power of each number to be derived from the power of the *tetractys* and to possess meaning, character and the ability to influence the outcome of events. Since each of the numbers was perceived to have its own quality or ‘energy’, not only are we able to sense this power, but number makes it intelligible for us. This is possible because there is a correspondence, but not equivalence, between sensibility and intelligibility.

The Pythagoreans argued the whole cosmos was ordered according to musical harmony; however, we are unable to hear its music because from birth we become accustomed to its presence. We would only become aware of it if it stopped completely, when confronted with absolute silence (Aristotle, *On the Heavens (De Caelo)*, 290b). As noted in Chapter 1, silence and listening were key themes in the Pythagorean way of life because it promotes the unity of man and God. According to Cornford:

It was assumed, moreover, in sharp contradiction to orthodox Olympian religion, that there was no insuperable gulf between God and the soul, but a fundamental community of nature. The same order (cosmos) or structural principle is found on a large scale in the universe and on a small scale in individuals, i.e. those parts of the universe which are themselves wholes, namely living things. The living creature (soul and body) is the individual unit or microcosm; the world, or macrocosm, is likewise a living creature with a body and soul. Individuals reproduce the whole in miniature; they are not mere fractions, but analogous parts of the whole which includes them. (Cornford, 1922, p.142)

While the origin of the term *sympathia* which means “feeling together” (Preus, 2007, p.254) is normally associated with the Stoics who referred to it as cosmic sympathy (Ierodiakonou, 2006, pp.100-101), Pythagorean religious beliefs were founded on the world-wide primitive idea of universal kinship or sympathy, which in a more or less refined and rationalised form, permeates its central doctrines of the nature of the universe and the relationship of its parts.

Through the power of number, *harmonia* is the essential principle of unity forming the basis for any possibility of knowledge. Through the discovery of harmonic ratios, “music, as philosophy’s companion, became a bridge between the inner and outer cosmos, stirring not just the soul but the stars” (Hermann, 2004, p.103). The discovery of the harmonic ratios cemented a change of consciousness that had already begun with Anaximander, a change from a Homeric or mythopoetic consciousness to a naturalistic consciousness of an ordered world founded on the principle of ratio or *logos*, the “principle of proportionality, balance and equilibrium, harmony and concord, reciprocity and exchange” (Johnstone, 2009, p.81).²⁹

Zhmud argues that the mathematical sciences of astronomy and harmonics form the basis of Philolaus’ epistemological theory of number:

By the time of Philolaus the exact sciences had repeatedly proved their ability to be a powerful instrument of cognition which can provide an irrefutable truth (Zhmud, p.257).

Hence, the Pythagorean science of harmonics was not entirely rational because it provided a link between mind and matter, or intelligibility and sensibility. While

²⁹ While *logos* can be translated as ‘ratio’ it is also interpreted as ‘logic’, and as ‘the rational/logical/intelligible order of things’. Ratio is also a Latin root for ‘reason’, ‘rationality’, etc. Thus, in the ancient mind, ratio, logic, reason, harmony, and later, the Platonic ‘good’ are all interconnected. Interpretations of *logos* will be examined in more detail in Chapter 3.4, p.77.

Aristoxenus criticised the Pythagoreans for neglecting the empirical, this was not the case. Plato, probably criticising Archytas, who based his science of harmonics on the tuning practice of musicians (Huffman, 2005, p. 418), acknowledged the Pythagorean concepts of harmony in music and mathematics; however, he disagreed with them on hierarchy. He believed the harmony of mathematics to be superior to the harmony of music and criticised the Pythagoreans for focusing too much on the actual sound of musical intervals, and not concentrating enough on the silent harmony of pure numbers (*Republic*, 529d and 531c).

The science of harmonics from the perspective of Aristoxenus emphasises the power that drives the continuous temporal process and generative nature of melody, which is complemented by an *a priori* or innate notion of *synesis* (musical intuition) in which sensibility in the form of hearing is combined with memory in the listener or musician. Sensibility and intelligibility are also aspects of the Pythagorean generation of multiplicity; while sensibility is unquantifiable and therefore unintelligible, the degrees of change when expressed as ratios are intelligible. Maconie sums it up nicely:

In saying that the universe of things can only be known in terms of degrees of change, the school of Pythagoras is saying in effect that the universe is only real in so far as it is subject to change. A dynamic universe is a universe in motion. The static universe of conventional wisdom is by the same token unknowable. This is very up-to-date thinking. (Maconie, 1997, pp. 109-110)

Plotinus and Bergson share the Pythagorean view that the static universe as we normally conceive it is unknowable because it is essentially dynamic; it does not mean a static universe exists that cannot be known.

Conclusion

This Chapter explained that there is little to provide reliable evidence for Pythagorean cosmology and cosmogony, and it is interpreted differently by commentators. It was proposed that the key concepts in Pythagorean cosmogony and cosmology may be considered in terms of powers: ‘nature’ is a power that is perpetually realized by a transition to a different status of itself; the ‘unlimited’ and ‘limiting’ are powers that act either passively or actively on each other; ‘fitting together’ (*harmonia*) is the active, creating, regulating force in nature; and ‘cosmos’ refers to the generation of the world from the *Monad*, as the power that generates an organised structure of tonal order based on numbers, ratios and proportions as symbolised by the *tetractys*. The Pythagorean *Monad* does not appear to be a first principle as we find in the development of henology in Neo-Pythagoreanism and Neoplatonism, despite their attribution of the theory to earlier Pythagoreanism. It was suggested that the nature of Pythagorean cosmology and cosmogony is reflected in the science of harmonics as conceived by the Pythagoreans and Aristoxenus in the experiential tradition. Most important is the notion of *dynamis*, understood to be implicit within musical intervals, ratios, and therefore scales and melody. It implies a power driving scales and melody in an orderly fashion and which applies to the dynamic nature of the universe, a universe that is continuously transforming itself according to the logical structure of the *tetractys*. Because music or harmonics forms a bridge between intelligibility and sensibility it has an epistemological role as well as ontological; the structure is in the world and it can be understood and sensed. It will be argued in subsequent Chapters that it underpins the metaphysics of Plotinus and Bergson; a metaphysics that is supported by modern physics. Pythagorean philosophy cannot therefore be subjugated to the interests of

historians of philosophy; it is highly significant for the study of metaphysics in general. Its significance becomes more apparent in the following Chapters as the metaphysics of Plotinus and Bergson are explained.

Chapter 3

Plotinus - The Generation and Nature of *Intellect*

*

Introduction

The generation of multiplicity in *Intellect* has proved challenging for scholars of the *Enneads* due to perceived ambiguities in the text. I will argue that if Pythagorean theories of harmony are taken as heuristics for an interpretation, possible resolutions to existing aporias become evident. In employing the model of harmonics, Plotinus follows in the footsteps of Plato, who in the *Timaeus* describes how the World Soul (35a-39e) and cosmos, with a spherical earth at the centre (53c-56c), is built from substances that the Demiurge combines in ratios which are based on the mathematics of music, the harmonic series (35b-c). While Plato is of utmost importance to Plotinus, it is not possible to address the complex and profound nature of the harmonics present in Plato's texts here³⁰; instead, the comparison will be made with the Pythagorean tradition as explained in Chapter 2.

The Chapter commences with an explanation of Plotinus' theory of the *One* as the first principle of unity and source of multiplicity, which is followed by a summary of Plotinus' account of the generation of *Being* and *Intellect* as an activity of procession away from and reversion to the *One*. It will be argued, with the help of illustrations, that *Intellect* generates itself as a 'fundamental' and its content or *Beings* as an integrated compound series of harmonics as understood in the physics of sound.

³⁰ See: Barker, 2007, pp.308-327; Cornford, 1935; Crickmore, 2006; Kennedy, 2011; McClain, 1978; Moro Tornese, 2010, 2017; For a more general account of the role of music in Plato's Texts see: Pelosi, 2010.

This is followed by clarification of the ontological status of *logos* as the substance of the *Beings* in *Intellect*, because it is a concept understood to imply a logical ordering structure that commentators have been unable to define. It will be argued, based on the interpretation that *Intellect* is a fundamental and self-generated harmonics, that the Plotinian *logos* should be defined as ‘ratio’, emulating the term used in the Pythagorean tradition of musical harmonics. An explanation will then be proposed as to how substantial number is generated with the primary kinds: motion, rest, otherness and sameness, the composite of which Plotinus considered an undivided unity within *Being* that he models on the Pythagorean *tetractys*.

3.1 Plotinus’ Principle of Unity – The *One* (τὸ ἓν)

Plotinus develops a comprehensive theory explaining the physical universe as a continual process of generation by way of three linked metaphysical, sequential, and irreducible Hypostases: the *One*, *Intellect* and *Soul*. The Hypostases have three distinct functions as: theoretical ontological structures or hierarchical explanatory principles; paradigms imitated by lower levels and entities; and causes that produce everything that exists (Gerson, 1994, pp.3-4). As such they function as dynamic or generative powers of the *One* (*Ennead* VI. 9.3, 45-49 and III.2.1, 22-26). It will be explained that Plotinus believed that his theory of the *One* replicated the early Pythagorean tradition.

For Plotinus, the *One* is simple, the principle of all things (*Ennead* V.2.1, 1-7) and the first principle of unity. The *One* is perfection, indescribable, beyond discursive thought, logic or knowledge, and as prior to *being*, it is neither intelligent nor intelligible (Gerson, 1994, p.14). The *One* is not a substance, subject, or a thing that creates the universe as an intentional act, and while it does not have an external cause

since it is cause of itself, it is the efficient and final cause of everything else (*Ennead* VI.8.14, 20-33). It is the first in the hierarchy because of its infinite and incomprehensible power that is everywhere (*Ennead* VI.9.6), not as a unit or central point that implies place, spatiality or temporality (*Ennead* VI.8.11; VI.9.9, 1), but it is a paradigm in that individual things in the physical world exist each as a *One* and therefore All as a many; hence it is present in all things (*Ennead* V.5.9, 33-35). While the *One* possesses all things indistinctly it is “the potency of all things” (*Ennead* V.3.15, 31-33). Plotinus refers to the Pythagoreans who referred symbolically to the *One* as “*Ἀπόλλων*” (Apollo, where A = not, pollo = many), i.e., the negation of plurality (V.5.6, 26-30); however, he asserts it must not be considered a number because it is prior to number (*Ennead* V.1.5, 6-7; V.1.7, 23-24; V.5.4, 17-19). Schürmann describes the *One* as an event, function, or the differentiating and coordinating principle among things (Schürmann, 2002, p.162).

Plotinus uses metaphors of an ever-flowing spring, a growing tree, (*Ennead* III.8.10, 4-13 or the sun radiating light (*Ennead* V.1.6. 28-30) to describe the generative function of the *One* whose power continues eternally undiminished while it remains unmoved itself (*Ennead* V.1.6, 18; IV.8.6, 7-16). Rist remarks that for Plotinus, “... plurality arises because of the overflowing of the *One*. This overflowing is the effect of infinite power and exists eternally” (Rist, 1965, p.340). In the act of production its radiation is a spontaneous generation directed outside to produce something other than itself that can only be less perfect and less unified. Cause and effect therefore differ ontologically. While the *One*, as prior, has its own internal infinite power and is independent and superior, its offspring, *Intellect* and *Soul*, are dependent and therefore inferior; *Intellect*, because it contains a “a one-many” multiplicity, and *Soul*, because it is “one and many”, is dependent on the power of the *One* via *Intellect* while being less

unified than *Intellect*. The hierarchy is therefore not temporal but prioritised according to Platonic “priority by nature” (O’Meara, 1999, p.72), degrees of power that become more dependant and less unified at each level. The *One* as final causation is explained in terms of “the actualisation of Intellect” which is the “primary instance of the *One*’s causality”. *Intellect* exists as inchoate in the *One*’s radiation or procession, and in its reversion, *Intellect* desires the unity of the *One*; hence the *One* becomes the *Good* as the universal object of desire. (Bussanich, 1988, pp.45-57). Plotinus’ metaphysics is a system in which procession and reversion is applied at each Hypostasis to explain the causal power of the *One*. First, the *One* generates *Intellect* that acts as the archetype for individual entities in the world and generates *Soul* as the third Principle or Hypostasis. *Intellect* contemplates, or participates in the *One*, and *Soul* contemplates, or participates in *Intellect* to express *Intellect*’s archetypes. The *One* therefore provides an ontological and epistemological basis for the physical world, since it is both the source of being and the reason of being (*Ennead* VI.8.14, 31-32).

The *One* also has psychological significance. For Plotinus, love is the freely created gift of the *One* or the *Good* (*Ennead* VI, 8, 15; VI, 7, 22) and acts as an incitement for the *soul* to love and return to him, to experience absolute simplicity or unity (Hadot, 1988, p.59). In his 1914 University of Edinburgh Gifford Lectures entitled ‘The Problem of Personality’, Bergson stated: “Of all the ancient philosophers, Plotinus was the only one who was really a psychologist”, and he addresses Plotinus’ psychology of the individual *soul* and its desire for unity:

He supposed that each of us was multiple “in our lower nature” and single “in our higher nature.” In other words, he considered a person as a being essentially one and indivisible, which by a kind of declension or excursion beyond itself runs down into indefinite multiplicity. Each of us, according to Plotinus, may experience these two states. In the second, we lean towards

division, we materialize ourselves more and more; in the first, on the contrary, we become more spiritual and tend to a higher and higher unity. That is to say, the unity of the person tends to coincide with the unity of other persons, and the person to be one with God Himself. (*Mélanges*, p.1,055)

Plotinus never claimed his account of the *One* was his invention, and he acknowledges, without being explicit, it had ancient origins, relying on Plato for evidence that these views are ancient. (*Ennead* V.1.8, 11-14):

... the ancient philosophers who took up positions closest to those of Pythagoras and his successors (and Pherecydes) held closely to this nature, but some of them worked out the idea fully in their own writings, others did not do so in written works, but in unwritten group discussions, or left it altogether alone. (*Ennead* V.1.9, 28-34)

The beginning of *Ennead* V.1.10 reads: “It has been shown that we ought to think that this is how things are, that there is a One beyond being”, where “beyond being” is taken from Plato’s *Republic* 509b, as noted by Dodds (Dodds, 1928, p.136); therefore, there is no doubt he believed his theory of the *One* replicated the early Pythagorean tradition.

3.2 The Generation and Nature of *Intellect*, the Form of the First Forms

Plotinus provides a metaphorical theory of vision and a psychology of thinking to account for the generation of *Intellect* as an act of procession from and reversion to the *One*; however, Plotinian scholars have found the subject challenging. Emilsson remarks: “all those who have tried to work through the texts, which are several, know how complex and bewildering the material is” (Emilsson, 2007, p.69). Plotinus refers to *Intellect* as the “Form” of the “first forms” that are vaguely identified with Plato’s

Forms, intelligible models or archetypes for things in the sensible world; however more precision is necessary to clarify the generation and nature of the forms as they are central for understanding the *Enneads*. It will be argued that Plotinus' metaphorical theory of vision and psychology of thinking is modelled on the physics of sound, a model that complements the text and could dispel some of the bewilderment, especially as it underpins arguments developed later in this chapter as well as chapters four and eight.

In *Ennead* III.8.10, 14-19, Plotinus refers to the generation of multiplicity from the *One* as a “wondrous act” (thauma) that defies explanation, yet he proceeds to offer one in *Ennead* V:

This, we may say, is the first act of generation: The One, perfect because it seeks nothing, has nothing, and needs nothing, overflows... and its superabundance makes something other than itself. This, when it has come into being, turns back upon the one and is filled, and becomes Intellect by looking towards it. Its halt and turning towards the One constitutes being, its gaze upon the One, Intellect. Since it halts and turns towards the one that it may see, it becomes at once Intellect and being. (*Ennead* V.2.1, 8-13)

As noted by Slaveva-Griffin, Plotinus inverts Plato's account of generation in the *Timaeus*. While Plato adopts a “bottom-up” approach where the universe is built into a model of perfection by the orderly composition (systasis) of chaotic matter (*Timaeus*, 30a and 48b), Plotinus adopts a “top-down” approach, where multiplicity is the orderly expression of a prior cause and is ultimately ‘otherness’, a standing away, standing apart, or separation (*apostasis*) of multiplicity from the *One* and is its radiation (*Ennead* VI.6.1, 1). Slaveva-Griffin notes that Plotinus' concept of *apostasis* has its roots in the

philosophy of the Neopythagoreans, especially Numenius under the influence of the *Timaeus* (Slaveva-Griffin, 2009, pp. 24-25).³¹

Plotinus argues that the first separation from the *One* involves movement and otherness:

...Movement too was called otherness because Movement and Otherness sprang forth together. The Movement and Otherness which came from the First are undefined, and need the First to define them; and they are defined when they turn to it. (*Ennead* II.4.5, 30-34)

Following Aristotle's characterisation of Plato's account of matter (*Physics* 187a17), Plotinus refers to the indefinite dyad as movement and otherness (*Ennead* V.I.5, 6-9), which he describes in the above quotation as "undefined" and in *Ennead* V.3.11, 5 as "sight not yet seeing". It must not be considered a multiplicity because, as Rist remarks, "The expression 'otherness' is common throughout the *Enneads* and its aspect of unlimitedness must be pressed so that it may be seen to mean 'neither simple nor multiform'" (Rist, 1962, pp.99-100).

In the next stage of the process, the movement away from the *One* halts and turns towards the *One* because it has an innate desire for the unity of the *One*, which is the *Good*. As Emilsson explains, being 'other' than the *One* it is not completely self-sufficient. For Plotinus, "the Good is the telos of everything but pre-eminently it is the telos of its first product, the inchoate intellect" (Emilsson, 2007, p.72); however, it cannot 'think' it lacks something because it is not yet an *Intellect* that thinks. Just as vision requires a subject that sees and an object that is seen, thinking requires a thinker and an object of thought (*Ennead* V.3.10).

³¹ In Chapter 1 Slaveva-Griffin provides a comprehensive account of how Plotinus' cosmology inverts Plato's cosmogony, with Neo-Pythagoreanism acting as intermediary.

In *Ennead* V.2.1, 8-13, quoted above, Plotinus states: “Its halt and turning towards the *One* constitutes being”, and in *Ennead* V.1.4, 27-29, that *Intellect* makes *Being* exist in thinking it, and *Being* gives thinking and existence to *Intellect* by being thought. Like Plato, Plotinus gives ontological priority to the primary kinds: Otherness, Sameness, Motion, Rest and *Being*.³²

For there could not be thinking without otherness, and also sameness. ...But one also must include Motion and Rest. One must include movement if there is thought, and rest that it may think the same: and otherness, that there may be thinker and thought... But one must include sameness, because it is one with itself, and all have a common unity; and the distinctive quality of each is otherness. (*Ennead* V.1.4, 33-41)

Plotinus refers to the primary kinds as the principles in *Being* from which everything else comes (*Ennead* V.1.4, 44), and as he does not include *Intellect* as one of the primary kinds (*Ennead* VI.2.18, 12-14), the passage above suggests they precede the thinking *Intellect*, not as distinct kinds but unified in *Being*. This is confirmed in *Ennead* VI.6.8, 16-19 where Plotinus proposes that *Being* and *Intellect* are “simultaneous and exist together”; but *Being* precedes *Intellect*; so, this only makes sense if *Being* is present in inchoate *Intellect*. It was noted motion and otherness were indefinite in the radiation from the *One*; however, for Plotinus, rest is also present because it is the “defining limit of *Intellect*” due to the halt and turn, while “*Intellect* is the movement of the Form” (*Ennead* VI.2.8, 22-24). Sameness arises because motion, otherness and rest are the same in *Being* (*Ennead* VI.2.8) and are therefore undefined in *Being*.³³ The precedence of *Being* in the generative process must not be considered

³² Plato, *Sophist* 254 Dff.

³³ This will be discussed further in Section 3.5, p.85 which examines the link between *Being* and numbers.

temporal but a priority of nature, as it is an intelligible reality concerning universal truth and is therefore unchanging.³⁴ The opposites in *Being* represent the indefinite nature of the dyad that must be understood in terms of unlimited and limited:

One will conceive it as the opposites and at the same time not the opposites: for one will conceive it as great and small – for it becomes both – and at rest and moving- for it really does become these. ... before becoming them it is neither definitely: otherwise, you have limited it [or defined] it. (*Ennead* VI. 6. 3, 28-34)³⁵

While Plotinus followed Plato in adopting the primary kinds, the notion of opposites in terms of unlimited and limited originates with Philolaus who, as explained in Chapter 2, gives ontological priority to limiters and the unlimited by referring to their “pre-existence” in Fragment 6.³⁶

The final stage is the gaze upon the *One* arising from desire for the *Good*; “desire generates thought” (*Ennead* V.6.5, 9-10). Plotinus refers to the reversion or “gaze” as a “touching and a sort of contact” and “coincidence” with the *One* (*Ennead* V.3.10, 43); it is this contact that defines *Intellect* and gives existence to *Being*.

The puzzling feature of Plotinus’ account is why the radiation from the *One* halts and turns back to it. Emilsson comments, Plotinus “entirely fails to explain the conversion. There is certainly nothing in the emission of light or heat, or the flowing of

³⁴ For Plotinus, the objects of intellectual cognition are eternal truths, whereas the objects of perceptual cognition are perceived one after another in temporal succession. See *Ennead* III. 7, ‘On Eternity and Time’.

³⁵ Armstrong comments (*Ennead* VI.6-9, p.17) according to Aristotle, “Plato spoke of the indefinite principle of multiplicity as a dyad “great and small””. See references to *Physics* 203a15-16 and *Metaphysics* A6. 987b 26.

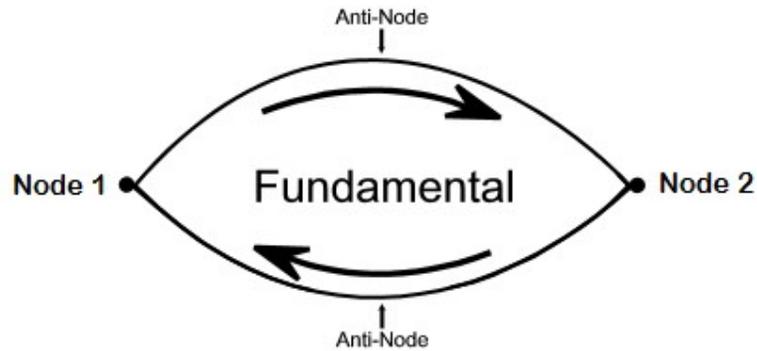
³⁶ Chapter 2.1.2, p.82.

liquids, that provides a reason for a conversion of the efflux”. He refers to the lack of explanation as a “gap between the procession and the conversion”, proposing the return is required for a psychological theory based on a desire for the *Good*, and that Plotinus’ metaphorical use of vision constitutes the difference between subject (inchoate *Intellect*) and its object (the *One*) (Emilsson, 2007, pp.70-78). It is true that Plotinus does not explain why the reversion is necessary; however, since reversion is a natural part of the process of generation of harmonics, and complements his account, it is suggested that this is the model Plotinus had in mind.

To understand how the generation of *Intellect* conforms to the generation of harmonics, let us return to Figures 2 and 3 in Chapter 2.³⁷ Figure 2 illustrates the musical harmonics produced by dividing the string on a monochord; however, let us first consider the monochord itself which is basically a simple instrument consisting of a single string held in equilibrium between two stationary nodes. The apparatus is set, now for the physics. Figure 5 illustrates that as energy travels through the string held between two nodes it causes a displacement from equilibrium, and the maximum point of displacement is referred to as an *anti-node*. On reaching the second stationary node the energy is reflected back to the first node, creating a second *anti-node*, thus forming a standing wave and creating a *fundamental* tone which is known as unison (Gunther, 2012, p.15).

³⁷ Chapter 2.3, p.46 and p.47 respectively.

Creation of the Fundamental (Figure 5)

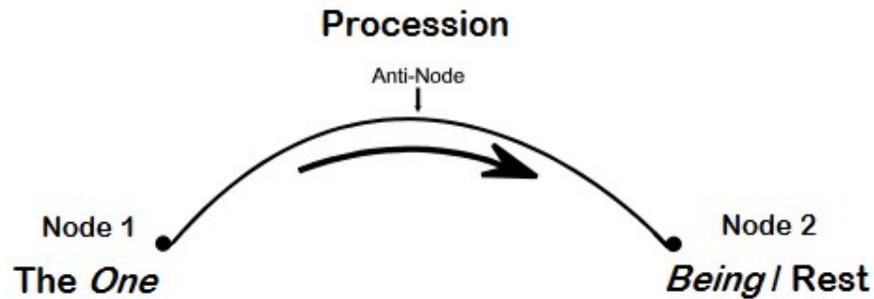


This serves as a model for Plotinus' account of procession and reversion that is illustrated in Figures 6 and 7. Let us take Node 1 on the left to represent the *One* because Plotinus regards the *One* or *Good* as a stationary power source; Plotinus is clear that the *One* does not move and refers to it as being formless itself but providing a "base" for *Intellect* "... the "Form" of the first "Forms" (*Ennead* VI.7.17, 35-36).

The arrow pointing to the right represents the energy radiating from the *One* in the form of the indefinite dyad (motion and otherness), and whereas Plotinus applies a metaphor of light to the *One*, the indefinite dyad is in darkness or "unilluminated from the First" (*Ennead* II.4.5, 34-35). The idea that darkness is prior to light is exemplified in Hesiod's *Theogony* [116–125] where Nyx, Goddess of the Night, daughter of Chaos, was one of the ancient Protogenoi, the first-born elemental gods, and who together with Erebus (Darkness) gave birth to Hermera (Day). Similarly, in ancient religious cosmology such as that found in versions of Hinduism, Buddhism as well as Christianity, priority is given to the primeval 'sound' of creation, with the first creation described in terms of light. This is epitomised in the *Bible*, where the voice or sound of God created light; for example, in Genesis 1: "And God said, "Let there be light," and in John 1.1: "In the beginning was the Word, & the Word was with God, and the Word was God" (King James Bible, 1611).

Node 2 represents the point at which the procession halts and turns, and according to Plotinus, “Its halt and turning towards the One constitutes being”.

Procession and the Creation of *Being* (Figure 6)



The indefinite dyad, in its movement away from the *One* becomes limited by resting (Bussanich, 1988, p.15), since he states that “rest is the limit of intellect” (*Ennead* VI.2.8. 18-24); though at this stage *Being* remains indefinite, and potentially the principle that unifies the primary kinds, motion, rest, same and other. Plotinus refers to it as “primary being” and an “image of the *One*”, both within the context of sound:

And if someone says that this word *einai* [being] - which is the term which signifies substantial existence – has been derived from the word *hen* [one] he might have hit upon the truth. For this which we call primary being proceeded, so to speak, a little way from the One, but did not wish to go still further, but turned inwards and took its stand [*estē*] there, and became substance [*ousia*] and hearth [*hestia*] of all things; it is like what happens in the utterance of the sound; when the utterer presses on it *hen* is produced which manifests the origin of the One and *on* [being] signifying that which came to exist, substance and being, has an image of the One since it flows from its power. (*Ennead* V.5.5, 12-23)

Plotinus appears to conceive rest as a sense of place when he uses the Pythagorean notion of “hearth” (Hestia), which is a fitting metaphor for ‘node’ in the generation of

harmonics³⁸; however, he did not consider ‘hearth’ in a spatially extended context because *Intellect* is self-inclusive in that it contains internal differences, and its eternal, non-discursive nature means that it is neither in space nor time. Plotinus refers to eternity as “the life which exists around being, all together and full, completely without extension” (*Ennead* III. 7. 3, 36-38)³⁹ while Emilsson refers to *Intellect* as having “Intellectual space” (Emilsson, 2007, p. 51) that can be interpreted as the intellectual substantial “place” of internal difference.

For Plotinus, the *One* (Node 1) and rest as *Being* (Node 2), are essential for providing the shape of the form of *Intellect*:

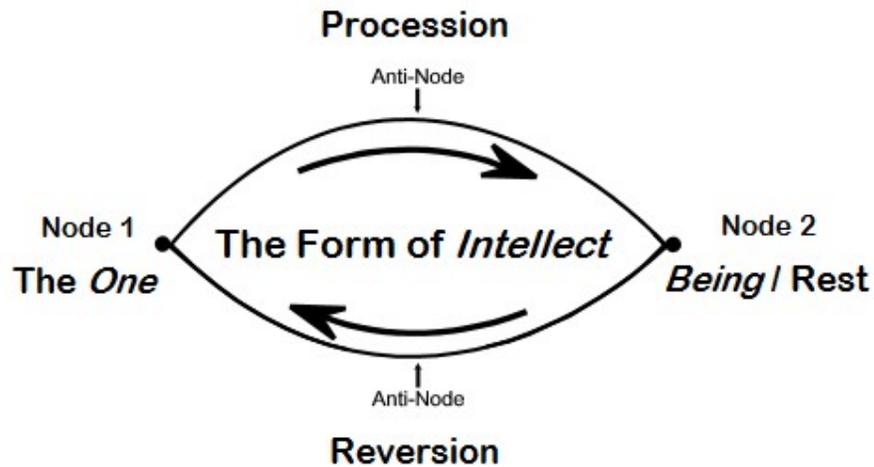
Being must not fluctuate, so to speak, in the indefinite, but must be fixed by limit and stability; and stability in the intelligible world is limitation and shape, and it is by these that it receives its existence. (*Ennead* V.1.7, 24-28)

The Form of *Intellect* (Figure 7) is completed on its reversion or gaze which is represented by the arrow pointing towards the *One* and its coincidence with the *One* (Node 1).

³⁸ Plotinus refers to *Being* as a “hearth” again in *Ennead* VI.2.8, 8.

³⁹ See also: *Ennead* IV.3.5, 23-30.

Creation of the Form of *Intellect* (Figure 7)



This accounts for why Plotinus refers to the gaze as “touching and a sort of contact”, as without it the form would not be completely bound:

For immediately by looking to something which is one the life is limited by it, and has in itself limit and bound and form; and the form was in that which was shaped, but the shaper was shapeless. But the boundary is not from outside, as if it was surrounded by a largeness, but it was a bounding limit of all that life would be which shines out from it. (*Ennead VI. 7, 17, 15-22*)

In Plotinus’ account of procession and reversion, he insists the Form of *Intellect* has a shape and boundary; there is no shapeless straight line of procession and reversion between the *One* and *Being*. If we interpret his account from the perspective of sound, anti-nodes occur naturally between Nodes 1 and 2 in the procession and reversion, generating the shape and boundary of the ‘fundamental’ or first harmonic that nicely complements his description.

Plotinus explains that while *Intellect* is defined as one, it includes a multiplicity within its boundary which will be interpreted as an integrated compound series consisting of the form of *Intellect* as a fundamental and its *Beings* as self-generated harmonics.

3.3 The Generation of *Intellect* as *Being* and *Beings*

Continuing the process from the previous section, will demonstrate how Plotinus followed the Pythagoreans who considered musical harmonics to be the *a priori* structure for the generation of, and order in, the universe.

On contact with the *One* the primary kinds in *Being* that were undefined and potential, become defined and actual because they are thought by *Intellect* as many; it becomes “seeing sight” when it receives the light or power of the *One* (*Ennead* V.3.11, 8-13).⁴⁰ Aristotle proposed in *De anima* (419a 10-22) that vision requires a medium for visual contact because an object cannot be seen if it comes directly into contact with the eye, and similarly, Plotinus proposes that on contact with the *One*, *Intellect* does not see it. As it is unable to grasp it in its full power it reverts to itself, dividing the *One*’s power into a multiplicity (*Ennead* VI.7.15, 20-24);⁴¹ hence *Intellect* becomes conscious of its own existence or *Being*, and as the “primary knower” (*Ennead* V.3.12, 47) it turns to itself for knowledge of the *One* and in doing so generates itself:

Intellect, certainly, by its own means even defines its being for itself by the power which comes from the One, ...But Intellect sees, by means of itself, like something divided proceeding from the undivided, that life and thought and all things come from the One. (*Ennead* V.1.7, 13-19)

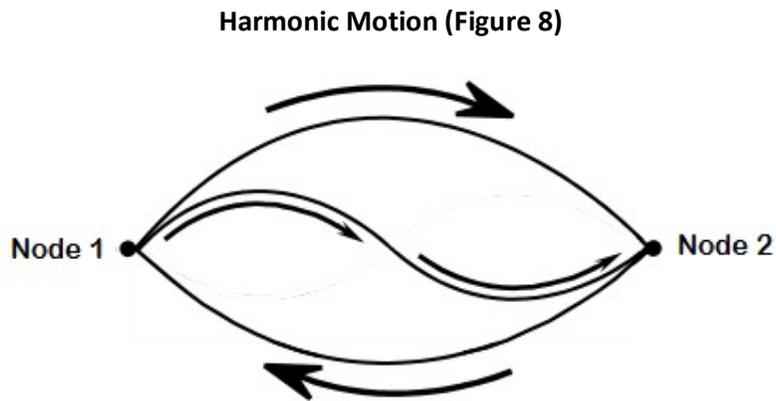
Intellect now has a ‘life’ (ζωή) in thinking the actuality of *Being*, motion, rest sameness and otherness. Plotinus states that *Intellect*’s knowledge of the many in itself is

⁴⁰ See also *Ennead* VI.7.16, 20-23.

⁴¹ Lloyd and Bussanich, disagree about the *One*’s role in the generation of *Intellect*. See: Lloyd, 1987 and Bussanich, 1988. Their arguments are discussed in Emilsson, 2007, p.75. See also Slaveva-Griffin, 2009, p.50, for her interpretation that multiplicity is the flowing or radiation of the *One*.

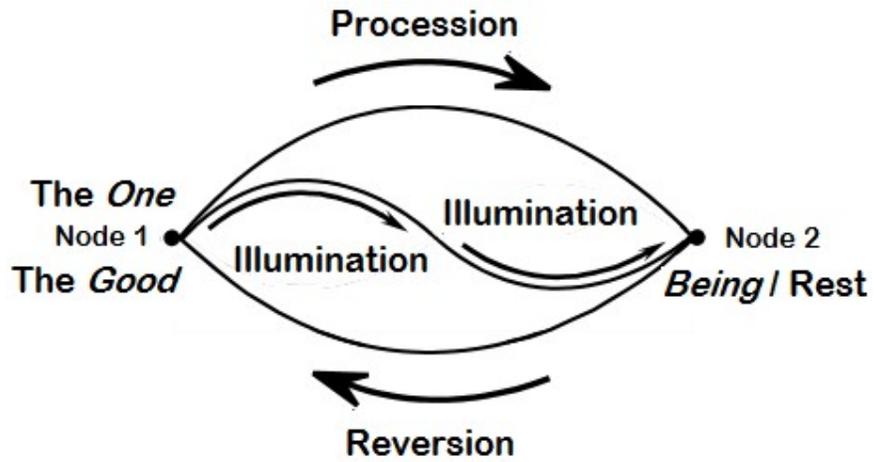
immediate, so we certainly cannot consider them to be “premises” or “axioms” or “expressions”, as *Intellect* would have to place the objects of thought outside itself (*Ennead* V. 5. 1, 40-43). *Intellect* is ontologically and epistemologically unified simultaneously as subject and object, knower and known, i.e. it knows itself as content and thinker of its content, and yet its thoughts are determined by the *One* (Emilsson, 2007, pp. 4-5).

Once again this can be understood as harmonic motion. Having created the *fundamental* as a result of energy being reflected from the second node back to the first node, the first node continues the movement by reflecting the energy back to the second, again producing anti-nodes or displacements in the mode of oscillation (Figure 8).



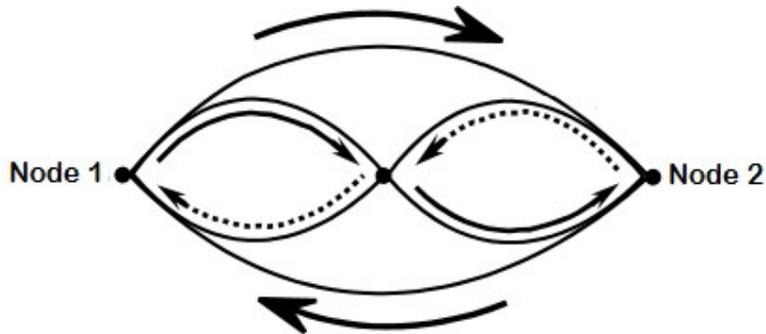
The movement illustrated in Figure 8 is replicated in Plotinus’ account of *Intellect* seeing and knowing itself as *Being* when *Being* is illuminated by the *One*. *Intellect* turns away from the *One* and to itself (Figure 9).

Intellect's Return to Itself (Figure 9)



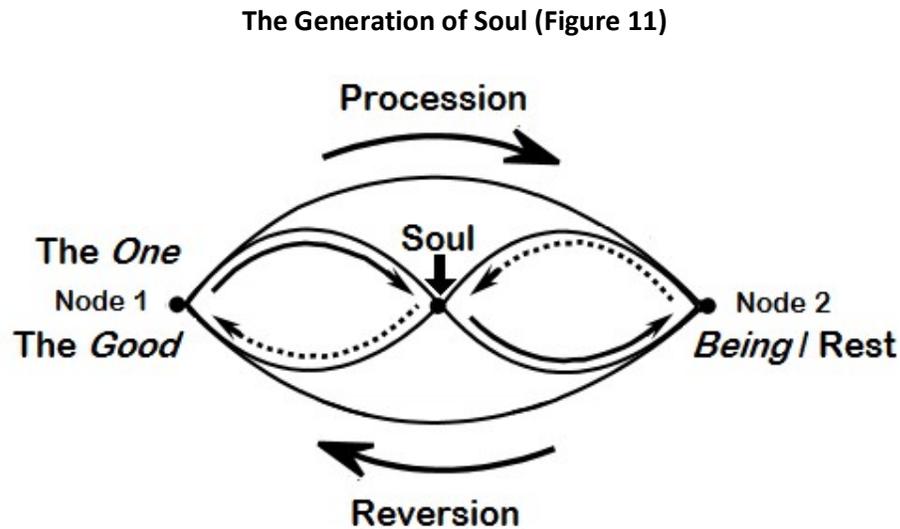
Returning to harmonic motion, the second node reflects the energy back again, hence a further displacement and the creation of a third node and the second harmonic where the waveforms cross, half-way between the two nodes. Because the waves are travelling in different directions at the same speed they cancel each other out and there is hardly any motion at this point. The movement continues and produces a further anti-node (Figure 10). These shorter wavelengths correspond to a vibration with twice the frequency of the fundamental frequency⁴² and which constitutes the first overtone, or a difference of an octave in music.

Generation of the Second Harmonic (Figure 10)



⁴² The harmonic is a multiple of the fundamental frequency.

This is replicated in Plotinus' account of the generation of *Soul*, the first being (*Ennead* V.2.1, 15-16). When *Intellect* turns to itself its desire for the *Good* makes it return to the *One*, generating *Soul* as the third stationary node and second harmonic as a principle of limit (Figure 11).



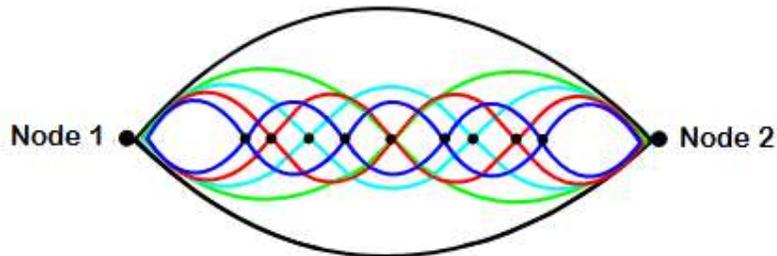
If we think of it in terms of music *Soul* is the same note as *Intellect* but with a difference of one octave, and significantly, it is an instance of the primary kinds in action.

Subsequent harmonics are produced because energy continues to be reflected by the nodes, and further displacements in the mode of oscillation produces additional nodes or harmonics together with their corresponding partials at $1/3$, $1/4$, $1/5$ etc., of the string's fundamental wavelength (Gunther, 2012, pp.20-21).⁴³ The shorter wavelengths correspond to harmonics at frequencies that are 3, 4, 5, etc., times the fundamental frequency. Figure 12 illustrates how a limited number of multiple harmonics are generated, using different colours to emphasise the harmonics. It is a natural process of generation that theoretically continues to infinity, and which in mathematics is known as a slowly diverging series. Furthermore, each harmonic becomes a fundamental in its

⁴³ See illustration 2.6a.

own right, generating its own harmonics or nodes in the same manner as the fundamental from which it was generated.

Generation of Multiple Harmonics (Figure 12)



With these features of harmonic generation in mind, let us consider what Plotinus tells us about the nature of *Intellect*. He describes *Intellect* as a substantial (*Ennead* II.6.1, 6-9) one-many, a unified multiplicity, a ‘Complete Living Being’ (*Enneads* VI.6.8, 1-4; V.9.9, 4-9; VI.7.8, 30-32) whose parts are self-generated (*Ennead* III.7.4, 10). Its offspring is a multiplicity of *Beings* which are all different forms of itself and are therefore all individual intellects which are bounded by *Intellect*; it thinks and keeps them within itself (*Ennead* VI.7.17, 26-28). This one-many does not consist of discrete parts, they interpenetrate⁴⁴ just as harmonics are self-generated as an integrated compound series when the pulse of energy is carried along the string between two nodes. While *Intellect* is the first form and has a shape, the *Beings* themselves also have shapes or forms that Plotinus refers to as intelligible matter (*Ennead* II.4.3, 15-17):

But if intelligible reality is at once many and partless, then the many existing in one are in matter which is that one, and they are its shapes: conceive this unity as varied and of many shapes. (*Ennead* II.4.4, 14-17)

⁴⁴ Armstrong, 2013, p.40 and p.50.

While Plotinus explains that the shapes in *Intellect* are not the same as those experienced in the sensible world, he refers to the movement of *Intellect* as a “wandering in itself” (*Ennead* VI.7.13, 30-31). He is not explicit about what he means by shapes in *Intellect* other than describing *Intellect* as an “outline” that holds “outlines inside itself”, and furthermore, that “its division does not go on in a straight line but moves always to the interior” (*Ennead* VI.7.14, 13-17). It is therefore suggested that the shapes to which he refers are the shapes generated as varying wavelengths are created with the production of nodes and anti-nodes, and which constitute *Intellect*’s ‘life’ (ζωή). Plotinus describes *Intellect* as “boiling over with life” (*Ennead* VI.5.12, 9), a metaphor that accurately describes the bubbling appearance as waves are generated by the vibrations and harmonics in the fundamental, as illustrated in Figure 12. He also considers *Intellect* and the generated intellects or forms to be an infinite process of division (*Ennead* VI.7.13, 5-8). The fractalisation of *Intellect* is consistent with the mechanism of harmonic generation. If the first *being* generated by *Intellect* is *Soul* considered as the third stationary node, (Figure 11), all the other realities follow as forms which are underpinned by the generation of nodes as substance. Each partial becomes a fundamental in its own right generating an infinite series of harmonics each of which follows the same physical law as the fundamental. Stamatellos comments: “...every intelligible within the realm of intellect is actually itself, “but potentially all the others” (Stamatellos, 2007, p.62). Similarly, Plotinus describes *Intellect* as the principle of necessity (*Ennead* V.3.6, 10-11) operating as a “law of being” by which *Beings* are generated (*Ennead* V.9.5, 26-29).⁴⁵ This is similar to the Pythagoreans who considered musical harmonics to be the *a priori* structure for the generation of, and order in, the universe. Furthermore, just as the physical laws of harmonics are

⁴⁵ This will be examined in detail in Section 3.5, p.89.

considered unchanging, Plotinus considers *Intellect* to be unchanging and eternal, “...for “eternity” is derived from ““always existing” (*Ennead* III.7.4, 43-44), hence the generation of *Intellect* is non-spatial and non-temporal because *Intellect* and its content undergo no change (*Ennead* II. 4. 5, 26-27; *Ennead* V. 9. 5, 33-35). While in Plotinus’ day there would be no means of measuring the time taken for a pulse of energy to travel through a string, modern technology has now made it possible. On a musical instrument it occurs in a measurement of milliseconds (Gunther, 2012, pp.11-12), a speed that we are unable to perceive as a temporal process, hence all the harmonics of a tone or sound are perceived simultaneously. It is therefore reasonable to assume that Plotinus also considered the harmonics of *Intellect* to be generated simultaneously, thus partially contributing to his argument that it lacks temporality.

The harmonics model could understandably be rejected on the view that the physics of standing waves was not understood in Plotinus’ day. It is true that references to standing waves and nodes were a much later discovery by Robert Hooke (1635-1703) and Joseph Sauveur (1653-1716). Sauveur was the first to use the terms *fundamental frequency*, and *harmonics* for higher frequencies that are determined by *nodes* for points of rest and *loops* for motion (Rao, 2007, p.7), while the discovery of standing waves is attributed to Faraday, who in 1831 observed standing waves on the surface of a liquid in a vibrating container. Plotinus would not have been familiar with the terms nodes and antinodes; however, the phenomenon is, easily observed when energy travels through a rope, an example commonly used in modern school textbooks. It is conceivable that it was understood by Plotinus because the theory of sound as a mechanical wave predated him. Euclid linked harmonics to vibrations, though not as standing waves specifically, and Freely comments: “The Stoics were the first to use the

analogy of water waves to explain the propagation of sound”, referring to a quotation from Aetius:

The Stoics say that air is not composed of particles, but that it is a continuum which contains no empty spaces. If it is struck by an impulse it rises in circular waves proceeding in a straight sequence to infinity, until all the surrounding air is stirred, just as a pool is stirred by a stone which strikes it. But whereas in the latter case the motion is circular, the air moves spherically. (Freely, 2012, p.75)

Kilgour writes in his ‘Vitruvius and the Early History of Wave Theory’, that the Stoics, Vitruvius (Vitruvius, 1914, V.4) and Boethius (A.D. 480-524) (De Musica, Book I, chapter 14) considered sound a transverse wave, as when a stone is thrown into water the ripples expand outward and waves form perpendicular to the trajectory, a theory that persisted until the seventeenth century when it was superseded by longitudinal wave theory. Since Porphyry confirms that Plotinus was knowledgeable about mechanics it is possible that this is how he understood the vibrations of sound and explains why in *Ennead* 1.8.2 he refers to *Intellect* living around the *One* and *Soul* circling around *Intellect*, while the *One* remains unmoved in the centre. Vitruvius also, compares sound to waves in water, which when obstructed flows back and breaks up the subsequent waves, and as Kilgour comments: “Vitruvius shows that wave theory accounts for interference and reflection, to use modern terms-in his phrases, dissonance and echo” (Kilgour, 1963, p.284-285). Nicomachus (c. 60-120 A.D.), in Chapter 10 of his *Manual of Harmonics* specifically refers to the inverse proportion obtaining between the length of string on a canon and its vibration when the string is plucked, such that if the pitch is increased one octave, the string is half as long and is vibrating twice as fast, and if the pitch is increased by a fifth, the string is 2/3rds as long and is vibrating 3/2 as fast, and if the pitch is increased by a fourth, the string is 3/4ths as long and is vibration 4/3rds as fast (Levin, 1994, pp.141-146). It could therefore be argued

that Nicomachus had already made the connection between harmonic ratios and the rate of vibration; hence the logic behind procession and reversion forming waves as vibrations and harmonics. It is contended that Chapters 4 and 8 will support the argument and that it cannot be dismissed because Plotinus could not have understood the concept.

Plotinus appears to have understood the generation of harmonics from the fundamental to be a natural physical law and applied it in metaphysical terms, which indicates an important development of Pythagorean philosophy. The argument that Plotinus used the generation of harmonics as a model is strengthened if we consider what he says about intelligible matter and its link to number. Both are implicated with the concept of *logos* that will be explored next.

3.4 Intelligible Matter, *Logos* (λόγος) and Substance in the Enneads

Plotinus claims that the universe is generated according to the law within *Intellect* which is *logos*, a concept central to his metaphysics and which commentators rightly, but vaguely, interpret as ‘rational forming principle’ or ‘reason principle’. The aim of this section is to propose a precise understanding that is compatible with the model of harmonics.

For Plotinus there is a distinction between intelligible matter and physical matter. Physical matter generates nothing because it is powerless, always receiving different forms one after another, and therefore constantly changing because “one thing pushes out another” (*Ennead* II.4.3, 9-17). The composite of intelligible matter is *logoi* or forming principles whose actuality makes form that is always the same but shaped in a different way, and it is all things at once, unchanging and eternal. Whereas the matter

of the world of sense is dead, intelligible matter is living (*Ennead* II.4.5, 15-19).

Plotinus describes the nature of intelligible matter as “illuminated substance”:

So those who say that matter is substance must be considered to be speaking correctly if they are speaking of matter in the intelligible world. For that which underlies form There is substance, or rather, considered along with form imposed upon it, it makes a whole which is illuminated substance. (*Ennead* II.4.5, 19-24)

This passage confirms that intelligible matter is “illuminated substance” consisting of substance with “form imposed upon it”. Plotinus refers to illumination or light elsewhere as “formative power” (*Ennead* I. 6.3, 18-19) and *logos*, interpreted as “the rational forming principle” (*Ennead* II.4.5, 7-8). For Plotinus the concept of *logos* is fundamental to his metaphysics as a principle of generation, process, order, and that which constitutes *Being*. It is considered to have been a development of the Stoic *logos*,⁴⁶ the *logoi spermatikoi*, situated within, and acting upon physical matter to produce things in the universe, although it is acknowledged that Plotinus rejects this view because for him the *logoi* in the physical world “include powers which are prior to the principles in the seeds” (*Ennead* IV.4.39, 6-18). Interpretations of the *logoi* in *Intellect* have lacked precision; Pauliina Remes, for example, examines Plotinus’ concept in some depth and refers to them as “logical parts of forms... entities that explain the details and differences of any one entity that will be instantiated in the material realm” (Remes, 2007, p.8).⁴⁷ While she accepts their ontological role as “entities”, she does not explain what they are. Similarly, John Deck devoted a whole chapter to the subject without clarifying his description of *logos* as “the diversifying

⁴⁶ See for example: Witt, 1931, pp.103-111; Armstrong, 2013, pp.107-108; See discussion in: Rist, 1977, pp.84-102.

⁴⁷ For Remes’ analysis of Plotinus’ concept of *logos* or *logoi* see Remes, 2007, pp.66-91.

aspect of intellectuality” (Deck, 1991, p.80).⁴⁸ Gerson has also examined the concept in some depth (Gerson, 2012); however, vagueness within Plotinian scholarship is perhaps due to the range of varying definitions of *logos* used in antiquity, and which are the product of lexicographers trying to make sense of that range. The Liddell–Scott *Greek-English Lexicon* refers to the following categories of usage: computation, reckoning; relation, correspondence, proportion, ratio; explanation; inward debate of the soul; continuous statement, narrative (whether fact or fiction), oration, etc.; verbal expression or utterance (not a single word); a particular utterance, saying; thing spoken of, subject-matter; expression, utterance, speech regarded formally; the Word or Wisdom of God, personified as his agent in creation and world-government. The meaning of *logos* in Plotinus appears within the third category of *explanation*, as “the generative principle in organisms” and as “regulative and formative forces, derived from the intelligible and operative in the sensible universe” (Liddell & Scott, Online) Sleeman and Pollet’s *Lexicon Plotinianum* includes various translations of the meaning of *logos* including: a) of the spoken thought or written word; b) of reason in general, rational thought, reasoning; c) of rational, creative, formative principles; of the concept, definition or meaning of a thing; d) reasoning in argument, discussion, etc. e) used of proportion, relation, counting, etc.” (Sleeman J. H. & Pollet G., 1980, pp.601-614).

The lack of clarity about the ontological status of *logos* in the *Enneads* is therefore understandable; however, returning to the subject of intelligible matter, it was proposed that *logos* is form and its underlying substance. Plotinus clearly states that in *Intellect* substance is number (*Ennead* V.1.5.6-9); in *Ennead* V.1.5, 13-14, that: “What is called number in the intelligible and the dyad are rational principles and Intellect”; and in *Ennead* V.4.2, 7-8, “from the Indefinite Dyad and the One derive the forms and

⁴⁸ See Chapter 5, ‘Logos’.

numbers”. Furthermore, in *Ennead* III.6.1,31 Plotinus refers to *soul* as “a number or whether it is a rational formative principle, as we say it is”. It can therefore be ascertained that *logos*, and therefore intelligible matter, is form with number as its underlying substance, as noted by Atkinson who has endeavoured to clarify the issue of the difference between forms and numbers (Atkinson, 1983, pp.118-119). Plotinus introduces the concept of substantial number in *Ennead* V and specifically addresses it in *Ennead* VI.6. 1, “On Numbers”; however, many commentators fail to acknowledge it. Slaveva-Griffin comments:

If number has such a paramount ontogenic role in the intelligible, it seems strange that it does not figure more prominently in all scholarly presentations of Plotinus’ architecture of the universe.

She adds: “it is often buried in footnotes or hidden in the context between the lines” and suggests the subject has simply been “overlooked”, and significantly, that “Plotinus’ conception of number is the fundamental framework on which his entire philosophical system is built” (Slaveva-Griffin, 2009, p.3 and p.11). Her important contribution, *Plotinus on Number*, together with a less comprehensive account from Dimitri Nikulin⁴⁹ is essential reading for anyone wishing to understand the different aspects of number described by Plotinus; however, several issues remain unresolved.

For Plotinus, the *One* represents absolute unity, without form and must not be considered as substance because “a substance must be some one particular thing, something, that is defined and limited” (*Ennead* V.5.6, 5-7). Since each being/number of *Intellect* is an individual intellect, it is also considered as a one-many unity. In *Ennead* V.1.5, 15-17 Plotinus states:

⁴⁹ Nikulin, 2002.

...each and every number [εἶδος] that comes from [the indefinite dyad] and the One is a form, as if Intellect is shaped by the numbers [εἶδεσιν] which came to exist in it.

It is important to note that Plotinus uses the words “εἶδος” and “εἶδεσιν” which Armstrong translates as number and numbers respectively, hence he appears to conflate forms with numbers, whereas in Makenna’s translation we have “Form-Idea” and “Ideas”, which is even more ambiguous. As noted above, the subject is examined by Atkinson, who makes the point that Plotinus divides the shape of the forms into a formal and material principle (Atkinson, 1983, pp. 118-119).

Furthermore, while each individual intellect shares the form and numbers of *Intellect*, they differ in their participation of it (*Ennead* V.5.5, 13); therefore if, as was suggested, the forms are fractals of *Intellect*, they are defined in terms of unequal numbers.

In VI.6.2-3, Plotinus discusses the number of infinity and its link with the unlimited and limited. He argues number cannot be infinite from a mathematical or ontological perspective; since the objects of sense are not infinite, the substantial number applying to them cannot be infinite either, because in the intelligible number is limited to as many as the real *Beings* (*Ennead* VI.6.3, 2-3). He continues, even if we count with abstract numbers, we still finish with a finite number; therefore, the unlimited is always limited. Plotinus urges us away from thinking of infinity as in a place because “...infinity ... runs away from the idea of limit, ... but when it is caught place comes into existence” (*Ennead* VI.6.3, 14-19), and Slaveva-Griffin notes that this is “place in the sense of ontological instantiation” (Slaveva-Griffin, 2009, p.66). As previously explained (p.72), this can be understood the intellectual substantial “place” of internal difference that is analogous to a node in the model of harmonics.

Furthermore, in VI.6.17 Plotinus examines the subject of number in terms of its limited

and unlimited nature. When we speak of unlimited number, it is like the idea of a limited line, we can always think of a longer one; numbers can also be multiplied in thought. But nothing is unlimited in *Intellect* because the idea of something unlimited negates its real existence. Unlimitedness, even an unlimited line, may exist in *Intellect* in a form that is not the same as something that has an unreachable end. He claims that unlimitedness is after number; it proceeds from one point over a distance that cannot be quantitatively measured. It is proposed that nothing is unlimited in *Intellect* because each form is limited by its node or substantial number; however once formed, it becomes unlimited in its infinite and therefore unmeasurable generation. Plotinus suggests that forms exist as “unfigured figures”, which Slaveva Griffin describes as the “antecedents of figures” such a “point, line, plane or solid” because they lack quantity, quality and spatial extension (Slaveva-Griffin, 2009, p.120). This is consistent with the interpretation that Plotinus is thinking of the forms as vibrations.

The ontological status of Plotinus’ *logos* in *Intellect* makes more sense when it is considered with his model of procession and reversion. In this model, *logos* as substantial number and form emulates the Pythagorean tradition of musical harmonics in which an interval, the difference in pitch or ‘power’ between two notes, is understood as a ratio or *logos*, not as monadic numbers we use to count or measure sensible things, or points on a line that can be measured as linear distances. In *Ennead* VI .6, ‘On Numbers’, Plotinus establishes substantial numbers, or “numbered numbers”, measure other things, but are not measured themselves (*Ennead* VI.6.15), and they represent unities in *Intellect* while acting as archetypes of monadic number that numbers things in the sensible world. As Slaveva-Griffin points out, “number does not count substance” in *Intellect* (Slaveva-Griffin, 2009, p.78); substantial number has a purely ontological and generative role.

In VI.6.16 Plotinus argues that the substantial number within us is actualised by outward appearances, thus generating the real existence of quantity, and he clarifies what he means by the “substantial number within us”:

It is the number of our substance; for Plato says, since it participates in number and melody it is again number and melody; for, one says, it is not body or magnitude; the soul therefore is a number, if it is a substance. The number of body is certainly substance, in a bodily way, but the number of soul is substances in the way souls are. (*Ennead* VI.6.16, 40-45)

In this passage Plotinus refers specifically to the link between substance, number and melody, which can only mean the ratios that form the basis of musical melody. This is supported by Armstrong, who in a footnote to his translation of this passage refers to Plato, *Timaeus* 36e6-37a1, and comments:

In considering Pythagorean and Platonic thought about numbers it is most important always to remember that, from Pythagoras onwards, the numbers are musical numbers, the numbers of melody and rhythm. (Armstrong, Plotinus *Ennead* VI.6-9, fn.1, p.64)

Gerson acknowledges that ratios are important in Plotinus’ account of *logos* because he is following Plato, and in referring to the difference between substantial number and monadic number he states:

...we may suppose that the numbers that Aristotle says Plato identified with Forms are not integers but rather ideal ratios, or, more exactly, constitutive formulae of ratios of the elements that go to make up all the things in the world. To know a Form is then to see not an infinite array of ratios or even an infinite array of ratios of ratios, but to see discrete *ideal* ratios of ratios. (Gerson, 2012, p.21)

And in a footnote to this passage he refers to:

Timaeus 53B5 where the Demiurge is said to have implanted intelligibility in the preexistence chaos of pseudo-elements by giving it "shapes and numbers." The "shapes" are the continuous quantities of the five regular solids and the "numbers" are the discrete quantities that are ratios or formulae for creating the actual elements and the things made out of these. (Gerson, 2012, p.21)

So, while Gerson is correct in his assertion about ratios, he links it with geometry, thus failing to make the connection that for Plotinus harmonic ratios are linked to forms or vibrations that have the power to give organised existence to the material world.

I propose that much of the difficulty experienced by commentators on Plotinus' account of *Intellect* and the ontological status of *logos* arises from a general reluctance to analyse the role of number in the *Enneads*. It has been argued that whenever Plotinus refers to intelligible matter, *logos*, or substance he means substantial number that must be considered as a harmonic ratio, and form considered as a vibration. Two questions remain unanswered: How does number relate to the primary kinds: being, motion, rest, otherness and sameness? What is the role of number in the generation of the *Beings* in *Intellect*? The answers proposed in the following section support the argument for a strong Pythagorean influence on Plotinus.

3.5 The Generation and Nature of *Being* as Substantial Number

The question of how number relates to the primary kinds: being, motion, rest, otherness and sameness, and its role in the generation of the *Beings* in *Intellect*, has not been adequately explained in the secondary literature. Plotinus' reference to number and melody, plus other music, sound, rhythm and dancing metaphors dotted throughout the *Enneads*, has led Slaveva-Griffin to concur with Gerson that:

there is a deeper ontological meaning in these metaphors. ... there is a certain literalness to them that conceptually reveals the inherent ontological roles of substantial number in the structure of the intelligible. (Slaveva-Griffin, 2009, p.119).

While she acknowledges the link to the primary kinds she does not explain how they are linked or their relevance to the generation of multiplicity. Nikulin also comments that Plotinus does not directly answer the question of how substantial number generates multiplicity as a unity. He suggests Plotinus "...gives a number of indirect indications and provides a henological and ontological system within which the problem of the constitution of number can be solved" (Nikulin, 2002, p.76); however, Slaveva-Griffin points to difficulties with the interpretation because Plotinus uses the concepts of monads and henads inconsistently (Slaveva-Griffin, 2009, pp.92-93). It will be argued that if Plotinus is founding his philosophy on substantial number that emulates harmonic ratios, we must look to the Pythagoreans for clarification.

In Chapter 2, it was explained that for the Pythagoreans number is intimately linked to the *tetractys* that contains the three concordant and primary intervals of the octave, fourth and fifth, regarded as the elements out of which any musical scale or composition is built and the order governing the generation of the universe.⁵⁰ The Pythagoreans considered the *tetractys* to be the sacred figure by which they are said to swear:

By him who gave to our soul the tetractys,
The source and root of everflowing nature.

(Sextus Empiricus, *Against Professors*, VII, 94-5, in Kahn 2001, p.31.)⁵¹

⁵⁰ Chapter 2.1.4, pp.37-38.

⁵¹ See also: Burkert, 1972, pp.54-56.

It cannot be mere co-incidence that Plotinus refers to substantial number as the “foundation” and “**source, root and principle**” of *Beings* (*Ennead* VI.6.9, 38-39, my emphasis). The influence of the Pythagorean *tetractys* on Plotinus has been noted by Alexandrakis, who comments:

Both Pythagorean and Plotinian thought are directed towards an ordered rational system: the Tetractys and the One. (Alexandrakis, 2002, p.153)

While Alexandrakis rightly makes the link, he does not explain how Plotinus incorporates it into his metaphysics. Nikulin makes no connection with the *tetractys* but questions whether Plotinus limits the total number of substantial numbers to ten and adds a footnote to inform us that “Plato... limits the number of the ideal numbers to ten only”. Since Plato’s ‘true numbers’ are Plotinus’ main reference, limiting them to ten as ‘primaries’ would be fully in accordance with Plato under the influence of Pythagorean number theory. Nikulin also comments that Plotinus mentions the decad in *Ennead* VI.6 forty-five times and suspects the decad is important and in some way linked to substantial number; however, he notes that Plotinus is not explicit; Plotinus “... gives no indication of whether the number of numbers is limited by a particular number”. Nikulin concludes that according to his interpretation substantial number must be limited but is unable to explain why (Nikulin, 2002, pp.88, fn.103). Nikulin’s suspicion is confirmed by Plotinus who says: “the generation of number is already limited and stands fast” (*Ennead* VI.6.2, 8-9). It is however contended that a solution can be found within key points arising in VI.6, “On Numbers” and *Ennead* VI.2, ‘On the Kinds of Being II’.

In VI.6.8, Plotinus claims that since *Intellect* comes after *Being*, substance was already one and many in *Being*; *Being* as one and *Intellect* as two existed before the Complete Living Being that encompasses all *Beings*, so number cannot be dependent on

it. Substantial numbers are the “number in Being and with Being and before the beings” (*Ennead* VI.6.9, 37-38); therefore, they must be linked to the primary kinds. In VI.6.9, Plotinus asks: Did substance and movement, rest, same and other produce number or did number generate them? Does number exist before *Being* itself? He aims to prove that one is before number, and that number is generated from *Being*, its source. Plotinus then sums up the nature of substantial number in the realm of the intelligible in an important passage:

But, if numbers were before beings, they were not beings. Now number was in being, not as the number of being – for being was still one – but the power of number which had come to exist divided being and made it... in labour to give birth to multiplicity. For number will be either the substance or the actual activity of being, and the absolute living being is number, and intellect is number. Is not being, then, unified number, and the beings number unfolded, and Intellect number moving in itself, and the Living Being inclusive number? Since, because Being came into existence from the One, as that One was one, Being must also in this way be number: this is why they called the Forms henads and numbers. And this is substantial number; but the other, which is called monadic, is its image. But substantial number is that contemplated in the Forms and sharing in their generation, and, primarily, the number in Being and with Being and before the beings. The beings have their foundation in it, and their source and root and principle. (*Ennead* VI.6.9, 24-39)

For Plotinus there is a subtle difference in the substantial nature of *Being* and the substantial numbers and forms (*logoi*) in *Intellect* because ‘being’ is a ‘principle’ of substance, the ‘law’ by which substantial numbers and forms (*logoi*) are generated in *Intellect* through procession and reversion. *Being* is therefore ontologically prior. It can be deduced that number existed as substance potentially in inchoate *Intellect* and actually as a “power” of *Being*, thus emulating the Pythagorean conception of number

as *dynamis* as discussed in Chapter 2.⁵² Slaveva-Griffin notes that Plotinus placed substantial numbers “among the Platonic primary kinds: (being, rest, motion, same, and other)” (Slaveva-Griffin, 2009, p.85), which makes sense because everything else comes from them (*Ennead* V.1.4, 42- 44). Significantly, as Plotinus does not include *Intellect* as one of the primary kinds (*Ennead* VI.2.18, 12-14), like the *One*, it cannot be a substantial number, so our focus must be solely on being, motion, rest, otherness and sameness. Plotinus begins *Ennead* VI.2.2 by arguing that the primary kinds are “principles of substance” and “a composition”. In *Ennead* VI.2.3, he refers to “several genera” and suggests that this is not accidental. While he does not specifically explain why this is so, he makes the following points: The *One* must not be numbered with the primary kinds because he is considering the genera as *Being*, not what is beyond being. As Plotinus refers to substantial numbers as “numbered numbers” we can deduce that each of the primary kinds is numbered as they are thought, for example movement is 1, otherness 2, rest 3 and sameness 4. *Being* itself is not numbered because for Plotinus, *Being* is always a unified one. Then he suggests that “If we grasp how many genera there are it will tell us how they are.” In *Ennead* VI.2.7-8, Plotinus presents the argument that motion, rest, otherness and sameness must be considered an undivided unity within *Being*.⁵³ Each primary kind is an individual, a one, and therefore different from the others, but all of them share the same nature. Each is a unity of all the others, for example, motion is a unity of being, rest, otherness and sameness, rest is a unity of being, motion, otherness and sameness, and similarly for otherness and sameness. For Plotinus, it is *Being* that brings them into identity. If you take movement and *Being*,

⁵² Chapter 2.4, pp. 54-56.

⁵³ See also *Ennead* V.1. 4, 33-41 where Plotinus refers to them as all being simultaneous and having a common unity.

the two are one nature; movement appears in *Being* and being in movement, each taken separately has the other; however, rest also appears in being because it exists “in the same state and in the same way” (*Ennead* VI.2.7).⁵⁴

In VI.2.13, Plotinus states that number cannot be a primary kind itself because number exists within the primary kinds (*Ennead* VI.2.13, 7-9). He claims that having posited ‘three’ primary kinds we recognise difference in being; furthermore, we can add another ‘two’, sameness and otherness, making a total of five. In *Ennead* VI.2.17, 24-25, Plotinus specifically, and almost deliberately, states that he has “counted up” the primaries using monadic numbers; however, he makes it clear that substantial numbers do not come together by counting because he is not thinking of each primary kind as one unit. It is therefore suggested that the Plotinian decad is created by adding the numbers as they are numbered, $1+2+3+4 = 10$, that is, *Intellect* numbers the primary kinds as it thinks or separates them into distinct units that are in fact already unities (Rist, 1963, p. 227). While the number in *Being* totals ten, *Being* is always considered to be one; however, while Plotinus does not give each individual kind a specific number, each of the others could be numbered one to four as unities within *Being* which Plotinus refers to as “unified number”.

In VI.6.14, 28, Plotinus asks: What is the proper cause of number? A thing is “one by the presence of one and two by the presence of the dyad”, and the rest in the same way. Furthermore, in VI.6.16, 48-49 Plotinus refers to “the triad in real being” as “a principle of substance”. He continues VI.6.14 as follows:

But we must affirm that the decad is observed in one way in things that are discrete and in another in things that are continuous, and in other ways in the many unified powers of this particular number; and that we have already

⁵⁴ Plotinus quotes Plato’s *Sophist* 248A12.

ascended among the intelligibles; and that there are true numbers, no longer observed in other things but existing themselves on their own, the absolute decad, not the decad of some intelligibles. (*Ennead* VI.6.14, 44-50)

The dyad, triad and “absolute decad” must have a place in *Being*, notably for its “many unified powers”. While Plotinus does not explicitly refer to the link between the decad and *Being* as “unified number” or “true numbers”, it appears to be implied here, and it is helpful to return to the quotation from Stobaeus which refers to the Pythagorean Decad:⁵⁵

The power, efficacy and essence of number is seen in the Decad; it is great, it realises all its purposes, and it is the cause of all effects. The power of the Decad is the principle and guide of all life, divine, celestial, or human into which it is insinuated; without it everything is unlimited, obscure, and furtive. (Stobaeus, *Eclogae*, 1.3.8, (DK 11), in Guthrie, 1988, p.171)

It is therefore suggested that Plotinus’ “absolute decad” reiterates its historical significance and is intimately related to Plato’s true numbers and the Pythagorean *tetractys* that contains the harmonic ratios which underlie the mathematical harmony of the musical scale, the octave (1:2), the fifth (2:3) and the fourth (3:4), as well as the first ten numbers that form the basis of all the numbers. Since *Being* similarly contains within itself the law by which the *Beings* are generated, it suggests that Plotinus limits the number of substantial numbers to four, but their nature in *Being* expressed graphically as per the *tetractys* is such that they form the basis of the decad, hence the ability to count in monadic numbers. Furthermore, in section 3.2, (p. 71), a passage was quoted from *Ennead* V.5, 5 where Plotinus refers to *Being* as “the hearth of all things”,⁵⁶ a concept Philolaus used in his cosmogony to represent the *Monad* as the

⁵⁵ Originally quoted in Chapter 2, p.38.

⁵⁶ Plotinus refers to the “hearth” again in *Ennead* VI.2.8,8.

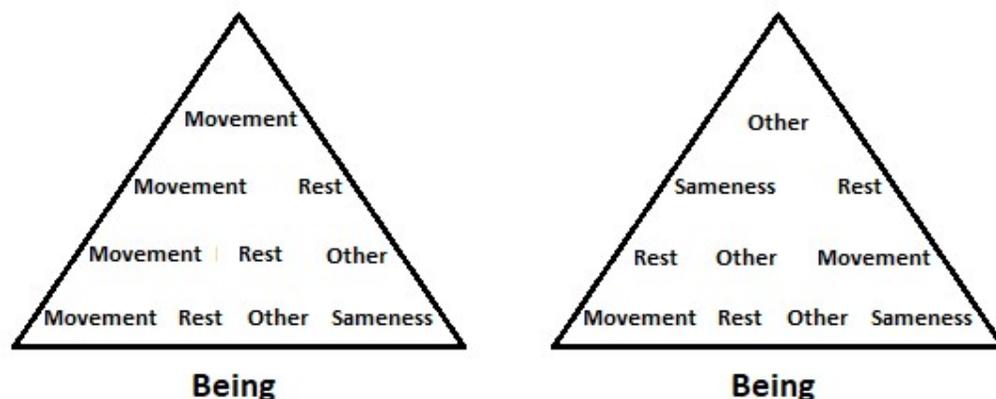
generating source of the universe, and like the Pythagorean *tetractys*, in this passage Plotinus also links it to sound.

While this provides a solution to Nikulin’s questions about whether the number of substantial numbers is limited by a particular number, and why the decad is linked to substantial number, it is helpful to clarify how the four unities in *Being* form a decad. If we return to the Pythagorean *tetractys* (Figure 1) in Chapter 2⁵⁷ and take it to represent the unity of *Being* by inputting Plotinus’s primary kinds, many different permutations of unities can be formed because they are all of one nature and none of the primary kinds is allocated an individual number. In VI.2.11, 45-48, Plotinus states:

... in being nothing prevents some things from being prior and others posterior, and some simple and some composite.

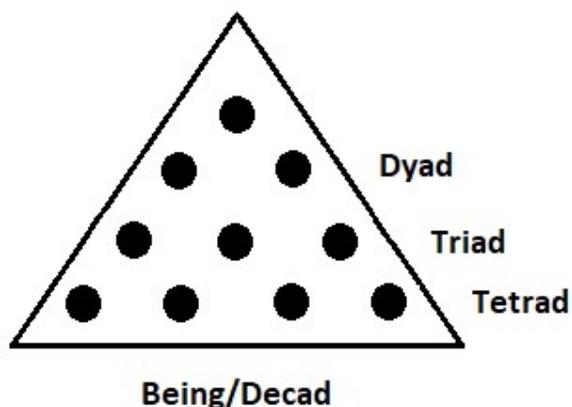
The position of any one primary kind within the structure of the *tetractys* is completely irrelevant because the ratios and decad hold fast within it. Figure 13 illustrates the primary kinds as unities, and in Figure 14 they are represented by ‘●’.

Unities within the Plotinian Decad (Figure 13)



⁵⁷ Chapter 2.1.4, p.38.

The Plotinian Decad/Tetractys (Figure 14)



Intellect of course thinks in terms of the whole numbers one two, three and four, just as Plotinus did, and these numbers relate to unities that act as a substantial base for the forms. Considered in terms of whole numbers they demonstrate the generation of *Beings* in terms of the number of *Beings* in *Intellect*, and when considered as ratios they measure the interval or distance between them that determines the shape of, and quality within the forms.

It is proposed that for Plotinus, numbers are actualities, with the power to generate vibratory motion through which *Intellect* divides itself into partials or forms because numbers represent nodes or a stable base for the forms. Significantly, this reveals that number-figuration has an ontogenic function for Plotinus. Substantial numbers break up the power of the *One* which when interpreted within the harmonics model produces forms or *Beings* that have their own character, just as the vibratory motion of sound produces tones that convey meaning in terms of the character of sound; not as notes that are considered to have a purely spatial dimension as when placed on a musical score. Plotinus transfers the physical nature of 'tone' into a metaphysical principle describing the essential characteristics, i.e., quality, quantity, shape, etc., that

each form contains rolled up within it and that can be expressed as a composite in physical matter. He states, *Intellect*:

... has each and every reason why of the things in it; but it is itself individually all the things in it . . . all the things each individual has are each individual reason why . . . the reason why is contained in its existence. (*Ennead* VI.7.2, 25-49)

This means each material thing has a vibration of what it is, and each particular vibration is an activity of substantial number, otherwise referred to as *logos* or rational forming principle. This rolled up nature of the individual form reflects the fractal nature of *Intellect*, because each individual intellect is a proportional representation of *Intellect* divided according to the same law of harmonics but diminished in numerical value because it commences on a lower scale.

Conclusion

The harmonics model together with the Pythagorean influence on Plotinus explains several difficulties perceived by Plotinian scholars. It was argued that the mechanism of procession and reversion is harmonic motion that generates *Intellect* and its content as an integrated compound series consisting of a fundamental and its self-generated harmonics. While it was noted that it could quite reasonably be rejected on the basis that the physics of standing waves was not understood in Plotinus' day, it was suggested that the argument cannot be dismissed. Vitruvius had already regarded sound as a mechanical wave similar to waves in water that when obstructed flow back and break up the subsequent waves. It is conceivable that it was understood by Plotinus due to his knowledge of mechanics and the fact that Nichomachus had already linked harmonics

to vibrations. Plotinus' reference to intelligible matter in *Intellect* as *logos* fits into the harmonics model if it is understood as substantial number which must be considered as a harmonic ratio, and form considered as a vibration. Furthermore, it was argued that number relates to the primary kinds: being, motion, rest, otherness and sameness since they are unities or powers in *Being*. Not only does Plotinus replicate the Pythagorean theory of opposites with his primary kinds, the nature of *Being* can be understood as the decad that he believed the Pythagoreans represented graphically as the *tetractys*.

Plotinus is not explicit about the harmonics model in the text; however, there is no doubt that it is compatible with his account. Nothing has been found in the text that seriously challenges the argument. It is significant that it potentially overcomes so many ambiguities noted by commentators, and if this is the case, it is a remarkable development of Pythagorean philosophy that was founded on the science of harmonics.

The following Chapter will examine how this new interpretation provides greater clarity about his account of the generation of the *Hypostasis Soul* and matter and provides further support to the arguments presented here.

Chapter 4

Plotinus - The Generation of *Soul* and Origin of Matter

*

Introduction

This Chapter argues that the model of harmonics provides a solution to ambiguity in Plotinus' account of *Soul* and Matter, the text of which has caused debate amongst scholars. With the aid of illustrations, it explains the nature of the *Hypostasis Soul*, its role in the generation of the *World Soul* and *Soul* of individual souls, and their relationship with *Intellect*. Then it examines the role of 'providence' in the making of the universe by the *World Soul*, and subsequently explains the application of the Pythagorean concepts of *harmonia* and *sympathia*, and how *sympathia* provides the ontological basis of *synesis*, an *a priori* intuition that functions in the integration of body and *Soul*. It will be argued that Plotinus' account of *Soul* only makes sense from the perspective of the harmonics model proposed in Chapter 3, and that disagreement amongst scholars concerning the role of music and musical metaphors in the *Enneads* arises because they have failed to understand how harmonics are generated in *Intellect*. Furthermore, it will also claim that the Pythagorean influence on Plotinus' theory of *Soul* has been misunderstood and underestimated. Finally, disagreements about the nature and origin of matter are discussed and a solution is proposed that conforms to the harmonics model. As in Chapter 3, the influence of Plato's cosmology in the *Timaeus* which is based on the harmonic series (35b-c) is presumed. The comparison will be made directly with the Pythagorean tradition discussed in Chapter 2.

4.1 The Levels of Soul and their Relationship with *Intellect*

According to Plotinus' theory of procession from the *One*, *Intellect* generates the *Hypostasis Soul* that generates the *World Soul* and the *Soul* of individual souls; however, commentators have noticed ambiguity concerning the various levels of *Soul*. Majumdar, for example, references Blumenthal and remarks that Plotinus:

...appears to use the World Soul and the Hypostasis Soul interchangeably, leaving no intermediary between Intellect and the World Soul ...thus in II.3 17-18, the World Soul seems to be contiguous to Intellect in the ontological order. (Majumdar, 2007, p.47)

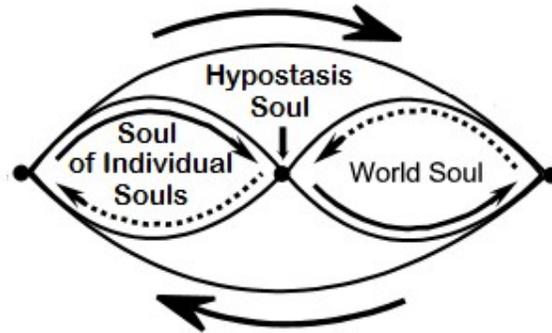
She proposes that the *Hypostasis Soul* is a rational form (Majumdar, 2007, p.46); however, it is suggested that the mechanism of harmonic motion helps to clarify the various levels. Chapter 3 explained how in the physics of harmonics the displacement of the string caused by the reflection of energy between two nodes effectively divides the string in half creating two standing waves and an additional node, and this corresponds to the generation of *Soul* as the third stationary node and two additional forms by the second instance of procession and reversion.⁵⁸ Plotinus states:

The soul which abides is a single expression of Intellect, and from it spring partial expressions which are also immaterial, just as in the world of intellect. (*Ennead* IV.3.5, 17-19)

It is reasonable to assume that the *Hypostasis Soul* is the "soul that abides", because as the third stationary node it generates the forms of the *World Soul* and the *Soul* of individual souls (Figure 15), but it is not a form itself, thus challenging the view expressed by Majumdar.

⁵⁸ Chapter 3.3, p.77.

Generation of *World Soul* and *Soul of Individual Souls* (Figure 15)



Furthermore, Plotinus states that the *Hypostasis Soul* itself is a number (*Ennead* VI.6.16, 45), and while Plotinus considers substantial number to be prior to the forms as holding ‘places’ for the forms, *Soul* comes in “third place” after the *One*, *Being* and *Intellect* (*Ennead* V.1.10, 4-5). Number is generated as ‘place’ or rest when “infinity is caught” (*Ennead* VI.6.3, 16). The *Hypostasis Soul* represents the first substantial number that must be two since *Being* is one; however, Plotinus also tells us that the two and the half are generated simultaneously:

The double and the half come into existence together, they are two and one respectively – also the double has the name and reality of the double and the one the name and reality of the half. (*Ennead* VI.1.7, 32-33)

We can therefore consider the *Hypostasis Soul* as two in *Intellect* and as half in its function of dividing *Intellect*, which could be represented by the ratio 1:2 which is the second harmonic. Ratio makes sense because it refers to intervals, and for Plotinus unity was measured in terms of ontological difference, or distance from the *One* (*Ennead* IV.3.11, 23-24). In musical terms the ratio 1:2 represents an interval that is the same tone an octave lower than the fundamental, hence Plotinus’ assertion that *Soul* is an inferior image, imitation, or “ghost” of *Intellect* (*Ennead* V.1.6, 47). For Plotinus the

natural order of generation is one in which the number of *Beings* (nodes and forms) increase while there is a reciprocal diminishment of value in the progeny, and whereas we normally think of an ascending musical scale, do-rei-mi etc., Plotinus, following the Pythagoreans and Plato adopts a descending scale, from the higher octave to the lower that was normal in ancient Greece (Barker, 2007, p.13).

The partial expressions of the *Hypostasis Soul* are initially two souls; the *World Soul*, which is responsible for regulating natural organic processes and for generating souls that will be expressed in nature as forms of bodies, including human bodies, and the *Soul* that generates individual souls; however, Plotinus tells us that the *World Soul* is the elder of the two because it was generated first (*Ennead* IV.4.36, 25-26). This can be explained by following the arrows indicating the movement of procession and reversion in Figure 15 which shows that *Soul* is generated after the *World Soul*.

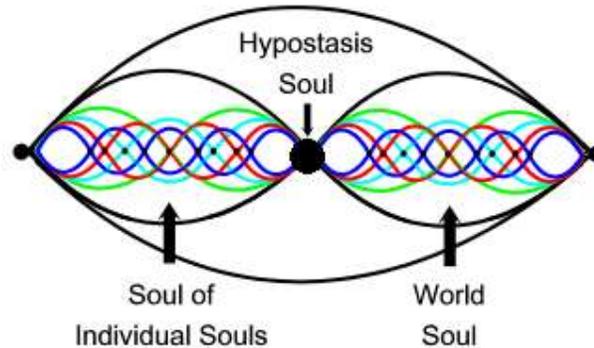
Both of these primary *Soul* forms generate their offspring as partial expressions of themselves (*Ennead* V.7.3, 23-24) according to the rule of decreasing proportion, but one in which the earlier expressions remain intact in the latter. Plotinus states:

In Intellect, as in Soul, there is again the infinity of these principles [numbers] which come out ready for use in Soul. (*Ennead* V.7.3, 24-25)⁵⁹

The model of harmonic generation means that each *Soul* becomes a fundamental in its own right, generating its own harmonics within itself whilst remaining within *Intellect* (Figure 16).

⁵⁹ Brackets mine, to clarify that the nature of the principles is substantial number.

Harmonic Generation of Soul and World Soul (Figure 16)



It is suggested that if Plotinus is basing the generation of *Beings* on the harmonics model, we must consider the *Hypostasis Soul* and its progeny to be included in the generation of *Beings* in *Intellect*, that is, at its highest possible level. Plotinus refers to *Soul* as the “matter” of *Intellect* (*Ennead* V.9.4, 11-12), which can only be intelligible matter that was established in Chapter 3 to be substance or number that serves as a base for the forms of individual intellects, which are also *Beings* as souls of everything in the universe. In a short treatise, *Ennead* III.9 ‘Various Considerations’, Plotinus refers to Plato as presenting a “planning” principle proceeding from *Intellect* that makes the universe as a result of seeing or thinking *Intellect*. Plotinus refers to this principle as *Soul*. While *Intellect* sees *Being* as many, that is moving in itself or thinking in whole numbers, it is the *Hypostasis Soul* as an activity of *Intellect* that divides *Intellect* into forms by acting as a node; the *World Soul* divides *Intellect* by expressing the forms individually:

what is the third, which “planned” itself to construct and make and divide into parts the things seen by Intellect in the living creature? Now it is possible that in one way it may be Intellect that divides, but in another way the divider may not be Intellect; for in so far as the things divided into parts come from it, it is itself the divider, but in so far as it remains undivided itself, and it is the things

which come from it which are divided – and these are souls - it is Soul which makes the division into many souls. (*Ennead* III.9.1, 26-41)

It is also important to note that Plotinus distinguishes between an activity belonging to substance and one that goes out from substance but differs from it (*Ennead* V.4.2, 28-32). So, while the *Soul* of individual *souls* and the *World Soul* are in *Intellect* as intellects at their highest level and are therefore an activity belonging to *Intellect*, they are also different from *Intellect* when considered as *Intellect's* external activity. The difference lies in their thinking and function. For Plotinus, “intellect is all things together and also not together, because each is a special power” (*Ennead* V.9.6, 8-9); the function of the higher *Souls* is to express these powers discursively. Similarly, Plotinus states we possess the forms in two ways, “in our soul, in a manner of speaking unfolded and separated, in *Intellect* all together” (*Ennead* I.1. 8, 6-8). If we think of *Intellect* as a fundamental tone, the individual harmonics are all sounded together; however, in *souls* that think discursively, the harmonics are expressed individually one after another, that is, in temporal succession as in a musical scale or melody:

It is like a long life stretched out at length; each part is different from that which comes next in order, but the whole is continuous with itself, but with one part differentiated from another, and the earlier does not perish in the later. (*Ennead* V.2.2, 27-30)

Hence for Plotinus, *Soul* is not in time; this temporal succession is the life of the *Soul*.

Having explained that the harmonics model clarifies the generation and status of the *Hypostasis Soul* and the primary *Soul* forms, it becomes necessary to account for its presence in Plotinus' description of the characteristics of the dual *Souls*, and since it is the elder of the two I begin with the *World Soul*.

4.2 The *World Soul*, Providence and the Making of the Universe

In the examination of the *World Soul*, Providence and the making of the universe it will be explained how Plotinus assimilates key Pythagorean concepts into his cosmology. According to Plotinus the *World Soul* was generated first and its function is to produce and maintain the universe according to the rational principles it receives from *Intellect*, that is, according to providence. The bodies generated by the *World Soul* are *souls* themselves because they have a “trace of the World Soul” (*Ennead* II.3.9, 23). In *Ennead* II.2.1, 38-39, Plotinus states that “Nature is just what has been ordained by universal soul”. It does not make by “deliberate choice” (*Ennead* IV.4.36, 26) or reasoning, but by necessity according to a law of decreasing proportion such as we see in harmonic generation:

And since the Soul acts as a genus or specific form, the other souls act as specific forms. And the activities of these are double; that which is directed above is intellect, and that which is directed below is the other powers in proportion and order. (*Ennead* V1.2.22, 28-31)⁶⁰

Nature, the lowest aspect of the *World Soul*, organises the universe so that each part grows and evolves, having a function according to its *logos* while being related to and contributing advantageously to the whole because it provides the world with a formal structure and the individual soul with a body with which it perceives and lives in the world. Nature has a *soul* that is a trace of its maker and is therefore correspondingly weak; however, its presence to matter as a diminished *logos* makes living bodies as it unfolds the *logos* it contains. As such, it does not contemplate or return to *Intellect*, but like *Intellect* it contemplates itself, not generating new rational forming principles but

⁶⁰ See also *Ennead* II.3.13, 4-5 and *Ennead* III.3.3, 20-30.

unfolding the diminished principles it contains within itself.⁶¹ Each body therefore is a *logos*, which as explained in Chapter 3,⁶² must be understood as substantial number and form:

Even in seeds it is not the moisture which is honourable, but what is unseen:
and this is number and rational principle. (*Ennead* V.1.5, 12-15)

The matter to which it is present reflects the forms in the same way a body of a stringed musical instrument makes the vibrations of the string perceptible; however we must not think of nature as producing spatial objects or images because Plotinus specifically denies nature the power of imagination (*Ennead* IV.4.13, 7-9 and 11-15); imagination is a faculty involved in perception and is a power of the individual *soul* that descends to its body.⁶³ At the level of nature, before human or animal perception the Plotinian universe is, like Bergson's durational universe, a field of vibrating energy. Plotinus refers to nature as the vegetative soul, which is responsible for the growth and nutrition and reproduction of living beings (*Ennead* IV.3.23, 36-43; IV.9.3, 11-29), as well as seeking the remedy for any pain or distress suffered by the body (*Ennead* IV.4.20, 22-36). It therefore has the power to transform itself within the bodies it makes, and this transformational power reflects the Pythagorean concept of nature, ordered by number, and which they considered to be a power that is "perpetually realised by a transition to a different status of itself" (Viltanioti, 2012, p.26).⁶⁴

⁶¹ See: Deck, 1991, p.87-90.

⁶² Chapter 3.4, pp.82-89.

⁶³ Imagination as a faculty or power, and its function within perception and memory of the individual soul, will be examined in Chapter 8.

⁶⁴ Chapter 2.1.1, p.34.

It is the function of the *World Soul* to make and maintain the universe in balance or harmony. In *Enneads* III.2 and III.3, ‘On Providence (1)’ and ‘On Providence (2)’ respectively, Plotinus refers to both the making of the universe and the interaction of the parts in musical terms. He uses the word ἁρμονία, which as noted in Chapter 2,⁶⁵ refers to the Pythagorean concept of *harmonia*, the concordant intervals of a musical scale which are ‘fitted together’ or interlocked according to proportions of an unequal ratio. While Armstrong translates ἁρμονία as melody, it is likely Plotinus intended it as it was used in Pythagorean harmonics, that is, the fitting together of opposites, though ‘melody’ would be appropriate for temporal making.

On composing the universe, the *World Soul* places individual bodies into places according to their “worth”, worth here meaning their *logos*, each of which has a unique character and is placed so it is “in tune with the rational principle of the universe” (*Ennead* III.2.17, 59-61) or according to the “the law of correspondence” (*Ennead* III.3.5, 4), although the term ‘attunement’ is more appropriate given the musical significance. Plotinus states, the individual contributes to the harmony of the universe by “contributing his own sound” and proposes even in a panpipe the stronger and weaker notes contribute to its harmony, which is complete and made up of all of them. “So too the universal rational principle is one, but it is divided into parts which are not equal” (*Ennead* III.2.17, 71-77). The inequality of the parts is necessary because Providence ensures war and strife, as well as friendship in the universe, due the separation of parts:

From that true universe which is one this universe comes into existence, which is not truly one for it is many and divided into a multiplicity, and one part stands away from another and is alien to it, and there is not only friendship but

⁶⁵ Chapter 2.1.3, p.37.

also enmity because of the separation, and in their deficiency one part is of necessity at war with another. (*Ennead* III.2.2, 1-8)

The parts are in conflict in many places, but the All is in accordance with its rational formative pattern, and it is necessary that this one formative pattern should be one pattern made out of opposites, since it is opposition of this kind which gives it its structure, and, we might say its existence. (*Ennead* III.2.16, 48-52)

Plotinus therefore follows the Pythagoreans in maintaining that conflict between opposites occurs, just as high and low notes are built into the laws of harmonics. He seems to consider conflicting sounds in terms of high and low, not harmonic and disharmonic, a view also shared by Alexandrakis, who comments: “What Plotinus has in mind here is the Pythagorean combination of higher and lower sounds into an *harmonia*” (Alexandrakis, 2002, p.153). The conflicting sounds exist as a unity within the fundamental, and which come together as musical ratios, hence ἀρμονία:

...but in the universe the battle of conflicting elements springs from a single rational principle; so that it would be better for one to compare it to the melody [ἀρμονία] which results from conflicting sounds, and one will then enquire why there are conflicting sounds in the rational proportions {of musical scales}. If, then, in music the laws of rational proportion make high and low notes and come together in a unity – being the proportional laws of melody [ἀρμονία] they come together into the melody [ἀρμονία] itself, which is another greater law of proportion, while they are lesser ones and part of it; in the universe too we see the opposites. (*Ennead* III.2.16, 39-46)

This passage supports the harmonic model theory because it demonstrates that Plotinus recognised two different laws of proportion. The first appears to be the purely mathematical physical law of acoustics, in which the fundamental generates harmonics as whole numbers by dividing itself as in *Intellect*, and the second, which Plotinus considers to be the “greater law”, is the musical law that determines the “lesser ones”,

the ratios of the musical scale and which are also contained within unified *Being*, his version of the Pythagorean *tetractys*. As was suggested in Chapter 3, Plotinus' 'tetractys' is constituted from the four primary kinds that are numbered and unified in *Being* as substantial numbers as musical ratios, and which when totalled (1+2+3+4) form the basis of the decad. The Pythagorean *tetractys* represented the order by which the cosmos is generated and similarly, Plotinus refers to *Being* as containing within itself the law by which the *Beings* are generated.⁶⁶ Plotinus is eager to ensure that we do not mistake the generation of body in the sense of the *World Soul* "tuning" the body or being in tune with it. He states: "For though the Pythagoreans meant this term, tuning in another sense", (that is in the sense that he also proposes), "people thought it was something like the tuning of strings" (*Ennead* IV.7.8⁴,3-5). For Plotinus the *World Soul*, considered as a fundamental, is already a harmony in the same way that *Intellect* is, so it does not need to tune or be in tune with its contents.

It is the function of the *World Soul* to maintain harmony in the universe once it is made, because the interaction of the parts has the potential to create new bodies that are not rational principles in *Intellect*. As will be discussed in section 4.4, physical matter is non-being; so, any interaction of the parts can only occur between the forms of *souls* that animate material bodies. The Plotinian universe therefore contains individual energies or vibrations that interact and impact on each other both positively and negatively. If the interaction is considered in musical terms, the universe is a harmonious whole, like an orchestra in which each instrument plays its part in the symphony unfolding in time; however, if a musician makes a mistake or if an instrument is badly tuned there is the potential for disharmony. When considered purely in the context of modern physics, if standing waves interact they combine to

⁶⁶ Chapter 3.5, pp.96-97.

produce either constructive or destructive interference (Gunther, 2012, pp.209-211), potentially changing the vibration of one or both for better or worse. In each case of interference in the Plotinian universe a new ‘node’ or existence is generated that does not receive its rational forming principle from *Intellect*. Plotinus is however thinking purely in musical terms:

... this All has arisen and separated into parts, and of necessity some became friendly and gentle, others hostile and at war, and some did harm to each other willingly, some too, unwillingly, and some by their destruction brought about the coming to be of others, and over them all as they acted and were acted upon in these kinds of ways they began a single melody [ἁρμονία], each of them uttering their own sounds, and the forming principle over them producing the melody [ἁρμονία] and the single ordering of all together to the whole.
(*Ennead* III.2.2, 25-33)

Maintenance of the universe involves making continual adjustments to the products of nature that puts some things together badly, “as when a lyre is not so tuned that it takes the melody [harmony] accurately so as to make it musical” (*Ennead* II.3.13, 46-47). In this metaphor the lyre represents a body in the universe and the lack of tuning implies disharmony when the musical ratios are applied by nature under the order of the *World Soul*. According to Plotinus:

... it makes some things without hindrance, but in others, the worse ones, it meets obstruction. Since its power to make is derived, and it is filled with forming principles that are not the original ones, it will not simply make according to the forms which it has received but there would be a contribution of its own, and this is obviously worse. Its product is a living being, but a very imperfect one. (*Ennead* II.3.17, 18-22)

The products of nature are therefore imperfect compared to the *Beings* in *Intellect* because nature starts from a much lower level in terms of its *logos*. This together with

the various degrees of passivity, activity and opposition of the parts means that maintenance is necessary; however, the *World Soul* maintains the universe in perfect order according to the laws of providence (*Ennead* II.3.13, 35-42).

Having explained how the harmonics model is implicit in the method by which the *World Soul* orders and maintains bodies for living beings, and how they interact, the following section will examine how the individual *soul* as a rational being becomes present to its body.

4.3 The Integration of Body and Soul

This section will explore how the Pythagorean concepts of *harmonia* and *sympathia*, function in the integration of body and *Soul*, and will speculate that under the influence of Aristoxenus *sympathia* forms the ontological basis of *synesis*, an *a priori* intuition that functions in the *soul*. It will then examine the subject of music as metaphor in the *Enneads*.

The *World Soul* participates directly in *Intellect* to make bodies; however, it does not descend to this world because it has the world within itself (*Ennead* IV.3.11). Individual *souls* therefore depend on the *World Soul* for the making of their physical bodies:

...there is, ... a difference between souls, and all the more in that the Soul of the All has not separated itself from the soul as a whole but remained there and put on the body, but the individual souls, since body exists already, received their allotted parts when their sister soul, as we may say, was already ruling, as if it had already prepared their dwellings for them. (*Ennead* IV.3.6, 11-15)

Plotinus refers to the *Soul* as being in the middle position between *Intellect* and matter (*Ennead* VI.8.7, 5-9) because its thinking moves between the two. The upper part of the individual *soul* is eternally within *Intellect* (*Ennead* IV.8.8, 1-3), thinking non-discursively like *Intellect*, seeing all its objects simultaneously as whole; and when it directs its attention to the individual images in matter it thinks discursively, employing logical activity, propositions and syllogisms (*Ennead* I.3.4, 17-19). Its moral activity arises from a gift of providence, the freedom to choose.⁶⁷ While the *World Soul* governs our association with our bodies:

The other soul, by which we are ourselves, is the cause of our well-being, not of our being. It comes when our body is already in existence, making only minor contributions from reasoning to our being. (*Ennead* II.1.5, 20-24)

Individual *souls* remain in *Intellect* until they receive an “illumination” from the *World Soul* that incites the descent of the individual *soul* into a body. As noted in Chapter 3,⁶⁸ light or illumination refers to power or *logos*:

Now the soul which comes from the divine was quiet, standing in itself according to its character; but the body, in a tumult because of its weakness, flowing away itself and battered by the blows from outside, first itself cried out to the community of the living thing and imparted its disturbance to the whole. (*Ennead* VI.4.15, 19-23)

Previously, Plotinus described the union of *soul* and body as “hearing made actual”; the *soul* hears the cries of the body (*Ennead* VI.4.14, 28). This is possible because *soul* and body are substance, that is, substantial number and form:

⁶⁷ This subject will be explored in detail in Chapter 8, which examines the nature of *kairos* in the *Enneads*.

⁶⁸ Chapter 3.4, p.83.

The number of body is certainly substance, in a bodily way, but the number of soul is substances in the way souls are. (*Ennead* VI.6.16, 45-46)

But the souls of men see their images as if in the mirror of Dionysus and come to be on that level with a leap from above. (*Ennead* IV.3.12, 1-3)

In a footnote to the translation, Armstrong explains that the mirror of Dionysus is a symbol of the visible world of physical matter which attracts the souls that must descend into it.⁶⁹ Plotinus explains that the *soul* does not descend because it is sent or because it deliberately chooses to do so, but it does it “as if of its own accord” (*Ennead* IV.3.13, 7-8). It is:

...like a natural spontaneous jumping or a passionate natural desire of sexual union or as some men are moved unreasonably to noble deeds. ... the individual ... is sent according to law ..., given to be in those themselves who are subject to it, and they bear it about with them. (*Ennead* IV.3.13, 19-27)

Plotinus seems to suggest that it is an inherent instinct or intuition operating according to natural law. This is possible because each *soul* comes down to a body made ready for it according to its resemblance to that soul’s disposition (*Ennead* IV.3.13, 1-6). The *World Soul* fits human souls into the universe according to the law of correspondence or attunement:

Since each individual is fitted in according to justice, in the parts of the universe designed to receive him; just as each string is set in its own proper place according to rational proportion which governs the sounding of notes, of whatever quality its power of producing a note is. (*Ennead* III.2.17, 59-64)

There is therefore an intimate connection between individual *souls* and their bodies because of their shared association with the *Hypostasis Soul*; they have the same form

⁶⁹ Armstrong, *Ennead* IV.3.12, fn. 2, pp.72-73.

and share its substance, and because the individual *soul* had "... an adaptability present to it, it had that to which it was adapted ..., the body ... was not alien to it" (*Ennead* VI.4.15, 2-18). In effect body and *soul* function according to the same "law", and as such we can consider the body produced by the *World Soul* as having a 'tone' which vibrates at a certain frequency, its "illumination", and it resonates with or is attuned⁷⁰ to the vibration of the individual *soul*. This does not mean that the substantial numbers of the body and soul are quantitatively equal. Plotinus refers to them in terms of value, which is qualitative; they are linked according to musical ratios consisting of unequal whole numbers, but they are in sympathetic harmony with each other. For Plotinus sympathetic interaction is essential as a cause of producing harmony and change in the physical universe; it is not just the result of the unfolding of rational principles in nature, of which we can think in terms of a musical scale, a sequence of steps that unfold successively in time:⁷¹

...one part is in sympathetic connection with another, just as in one tense string; for if the string is plucked at the lower end, it has a vibration at the upper. But often too, when one string is plucked another has a kind of sense of this by its concord and the fact that it is tuned to the same scale. But if the vibration can even pass from one lyre to another in so far as a sympathy exists, then there is also one single harmony in the All, even if it is composed of opposites. (*Ennead* IV.4.41 2-9)

Plotinus compares the harmonious adjustment of individual *souls* to the order in the universe with the Pythagorean conception of the harmony of the spheres:

⁷⁰ Barker describes attunement as "simply a structure or pattern, in which no element is temporally prior to any other" (Barker, 2007, fn.5, p.8).

⁷¹ Ibid. Barker's definition of a 'scale'.

They are not cut off from it, but fit themselves in in their descents and make one harmony with its circuit, so that their fortunes and their lives and their choices are indicated by the figures made by the heavenly bodies and they sing, as it were with one voice and never out of tune. (And this is more properly the hidden meaning of the doctrine that the heavenly spheres move musically and melodically). (*Ennead* IV.3.12, 20-27)

In *Ennead* IV.4 Plotinus frequently refers to musical examples to explain the concept of *sympathy*:

But if we remember that we posited that the universe is a single living thing, and that since it is so it was absolutely necessary for it to have an internal self-communication of its experiences; and if we remember further that the process of its life must be rational and all in tune with itself, and that there is nothing casual in its life but a single melody and order, and that the celestial arrangements are rational, and each individual part moves by numbers ... (*Ennead* IV.4.35, 8-13)

Gurtler emphasises the influence of the Stoic notion of the “the organic unity of the cosmos as the eternal basis for perceptual awareness” and he also acknowledges “The Stoic term sympathy fills out the Platonic notion that the universe is a single living organism (*Timaeus* 30d3-31a1)” (Gurtler, 2002, pp. 241-2).⁷² It is suggested that too many commentators overemphasise the relevance of Stoic concepts in the *Enneads*, and this is particularly relevant when discussing the Plotinian understanding of *sympathy*, for not only does Plotinus refer specifically to the music of the spheres to account for universal harmony, he also understood that the Pythagoreans considered *sympathy* to be natural in a cosmos ordered on harmonic principles. Rather than limiting our thinking to a single living organism, we must also take account of the underlying harmonic structure.

⁷² See also: Emilsson, 1988, p.111 who also shares the view that “Plotinus’ notion of *sympatheia* is a borrowing from the Stoics”.

While harmonics lie at the ontological basis of *sympathy*, they also appear to form the basis of *synesis* (σύνεσις), the lack of a ‘reasoned’ awareness, consciousness or understanding of individual *souls* when they descend to their bodies. Plotinus states that *souls* perceive their bodies; however, they do not reason before they unite with them (*Ennead* IV.3.18, 1-8), hence they descend without possessing ‘reasoned’ knowledge of why they do so. Aristotle also refers to *synesis* in the context of a capacity to comprehend without making judgements based on reason or rational calculation (*De Anima* 429a 23-25; *Nicomachean Ethics*, 1143a 1-35), and I refer again to Aristoxenus who adopted the term *synesis* to refer to an *a priori* or innate form of musical intuition that forms the basis of all musical activity.⁷³ As Levin explains, for Aristoxenus the creation of music depends on *synesis* “buried deep in soul”, not on reason in the form of “musical notation harmonic science or musical instruments” (Levin, 1972, p.229). If one considers Plotinus’ “law” that human souls “bear about with them” and which causes them to “spontaneously” descend into their bodies, together with the notion of attunement, melody and order in the universe, it appears that the *synesis* of *souls* also operates according to an *a priori* innate musical intuition that does not depend on rational calculation or reasoning.

Deck notes that in *Ennead* IV.4.13, 2-14, Plotinus states that “nature has no grasp, no *synesis*”, *Ennead* III.8.8, 14-16, in which nature possesses “naturely knowledge” and *Ennead* III.8.4, 22-25, where nature has the sort of consciousness of “sleep” rather than wakefulness. While Deck suggests it could be that nature’s knowledge is “close to unconscious” (Deck, 1991, pp.88-90)⁷⁴, Hutchinson clarifies the character of its unconsciousness:

⁷³ Chapter 2.4, pp.52-53.

⁷⁴ See also: Armstrong, *Ennead* IV.4.13, fn.1, pp.170-171.

Nature directs its contemplation exclusively on the *logoi* it contains, and it produces bodies spontaneously, without any conscious reflection on, or deliberation over, what it is doing. (Hutchinson, 2018. p.154)

Plotinus states that nature has no *synesis* because it has no perception or understanding of the *soul* that is outside it; it perceives itself rather than the *soul* (*Ennead* III.8.4, 14-23), which explains why bodies do not go to meet their corresponding *souls*. Therefore, while *sympathia* is operative in nature as well as between nature and the *soul*, *synesis* only occurs in the *soul*, which descends to its body because it perceives, distinguishes and is therefore conscious, but its understanding is intuitive and unconscious, just as it is for Aristoxenus; however, only Aristoxenus insists on the importance of memory in the process. For Plotinus, *synesis* appears to be wholly dependent upon *sympathia*.

While Plotinus does not refer to Aristoxenus explicitly, according to Porphyry, Plotinus “had a complete knowledge” of music, (Porphyry 13, 8-10); therefore, it is possible that he would have been familiar with the concept of *synesis* in the *Elements of Harmonics* of Aristoxenus, a student of Aristotle, and who is described by Levin as “the foremost technical writer on the music of ancient Greece” (Levin, 1972, pp.223-224). Pythagorean harmonics underpins the ontological structure that facilitates *sympathy* in Plotinus’ metaphysics and one can speculate that Aristoxenus influenced his epistemology with the concept of *synesis* in the *soul*.

Whether we view mind and body in terms of vibrations or number Plotinus does not propose two different kinds of substance à la Descartes. Plotinus avoids Descartes’ dualism because unlike solid material objects, numbers and their corresponding vibrations or forms are energies or powers that have no physical extension and can be in the same place at the same time. In fact, as body is further away from unity than the individual *soul* because it is closer to physical matter, its substance or number could be

of lesser value than that of the individual *soul*. Plotinus states that “when the particular souls go to things”:

They have departed to the depths; or rather, a great part of them has been dragged down and has dragged them with it by their thoughts to the lower existence. (*Ennead* IV.3.6, 25-27)

We must remember that at the level of *Intellect*, the individual *soul* has all the numbers in itself, even the lower ones, hence the resonance; however individual *souls* keep their individuality and are present to their bodies as “a whole at every point of the body” (*Ennead* IV.9.1, 2). While individual bodies eventually degrade and die, their individual *souls* are eternal because they exist prior to time at the level of intelligible matter.⁷⁵

We have seen that for Plotinus proportion, order and harmony are the underlying principles in the generation of the universe, and it was argued that Plotinus places these proportions in *Being* as the ratios of the musical scale. While the generation of the universe is often referred to as a mathematical progression, it has also been argued that this is intimately linked to the generation of musical scales which unfold in time.

Plotinus makes an analogy between the proportions in *Intellect* and art:

But if any artistic skill starts from the proportions of [individual] living things and goes from there to consider the proportions of living things in general, it would be a part of the power which also in the higher world considers and contemplates universal proportion in the intelligible. And certainly all music, since the ideas which it has are concerned with rhythm and melody, would be of the same kind, just like the art which is concerned with intelligible number. And as for the arts ... for instance

⁷⁵ See: *Ennead* IV.7 ‘On the Immortality of the Soul’.

building and carpentry, in so far as they make use of proportions they would have their principles from the intelligible world. (V.9.11, 7-15)

Substance in the intelligible therefore orders the physical world according to proportion or the ratios of musical harmonics. Plotinus knows musical scales are determined by harmonic ratios, and possibly influenced by Vitruvius who places great importance on ancient Greek music theory for architectural design he may have also considered that buildings were designed according to these ratios.⁷⁶ Plotinus also suggests that the formula used in the production of sensible melodies is the same as that used for the production of form in general:

The melodies in sounds too, the imperceptible ones, make the soul conscious of beauty ... showing the same thing in another medium. It is proper to sensible melodies to be measured by numbers, not according to any and every sort of formula but one which serves for the production of form so that it may dominate. (*Ennead* I.6.3, 28-33)

In effect Plotinus is saying that since *Intellect* is beauty, these melodies exist in *Intellect*; therefore, because form needs substantial number, substantial number must be the numbers linked to melody. This formula is therefore the foundation of musical scales conceived as number, which has been suggested to be the numbers and harmonic ratios found in ‘unified *Being*’, Plotinus’ version of the Pythagorean *tetractys*.

The subject of music in the *Enneads* has been a subject of debate amongst Plotinian scholars and Panaiotidi has reviewed the conflicting positions in the literature on Plotinus’ account of music, especially regarding its mimetic abilities. While she proposes that music theory is of particular importance to Plotinus, she also concludes music has worth for Plotinus “only as a means of ascent to a higher reality, and this

⁷⁶ Chapter 1.2, p.17; Walden, 2014, p.126 and p.131.

capacity is grounded in its mathematical nature” (Panaiotidi, 2014, p.409). The importance of music in the ascent will be examined in Chapter 8; however, it is contended that music also has worth for Plotinus in the descent as examined here, for it is the measurable ratios found in nature that demonstrate the truth of the order within *Intellect* and *Being*, and which dominate in the generation of the universe. Plotinus followed the Pythagoreans in proposing a philosophy founded on facts that he not only considered universal and intelligible, but also observable in the physical world.

This brings us to the subject of music as metaphor in the *Enneads*, a subject that Gersh has analysed in some detail. He remarks there are “certain problems in Plotinus’ usage of such conceptual models”, due to the “nature of metaphoricity in general, since the same term can fluctuate between a metaphorical and a non-metaphorical application within even a restricted space of discourse”. While he notes that Plotinus probably would have been familiar with Nicomachus’ “*The Enchiridion*”, a work influenced by Pythagorean harmonics, he also comments: “It is likely that Plotinus derived his technique of using musical or harmonic similes and analogies to explain philosophical concepts from the Pythagorean School of late antiquity”. Gersh, however, suggests that while Plotinus refers to the *Timaeus* most frequently, he excludes the harmonic elements due to Plato’s ambiguous relation to harmonic theory. He proposes that while Plotinus has reservations about harmonics, this does not apply to his use of arithmetic and geometry as explanatory devices. He argues Plotinus restricts the use of musical similes in two ways, and while the second concerns the “mode” of application, the first, which is relevant to the argument presented here concerns the “range” of application:

The first restriction stems from the fact that harmonics works with ratios whereas arithmetic works with numbers and ratios - which are inherently relational and dual - are less compatible with ultimate monism. This would imply that harmonics would be a method more fitted to expressing aspects of

the lower and more multiple levels of reality than of the higher and more simple levels. (Gersh, 2005, p.206).

The fact that Plotinus is more open about music theory in his account of *Soul* might well lead one to agree with Gersh; however, Gersh, like other scholars who have commented on the role of music in the *Enneads*, has not addressed the crucial issue of how the generation of harmonics at the lower levels is wholly dependent on the harmonic motion at work in *Intellect*. The interpretation that Plotinus considers the generation of *Intellect* and *Soul* as the generation of harmonics means Plotinus cannot use musical metaphors at the higher levels because a metaphor can only be “applied to an object or action to which it is not literally applicable”.⁷⁷ The process itself is literally applicable, hence his reliance on metaphors of light and vision to explain it. Musical or harmonic similes and analogies may be used metaphorically at the lower levels only because they mimic the higher levels. Also, since an originating source of energy, such as Plotinus’ *One*, is necessary for the generation of any harmonics, there is no issue with it being incompatible with “ultimate monism”. The question remains of why Plotinus reverted to metaphors of light and vision at the higher levels when he could have been more explicit about his intentions. The reason is possibly linked to the process of initiation as explained in Chapter 1⁷⁸ and the nature of the Pythagorean influence that will be discussed in the final Conclusion of this work.

The Pythagorean influence is strong in Plotinus’s description of *Soul*; in fact, there is very little difference between them. Both propose a universe that is rationally ordered according to number that pre-exists the universe itself; both propose the notion

⁷⁷ *metaphor* | *Definition of metaphor in English by Oxford Dictionaries*. [Online] Available at: <https://en.oxforddictionaries.com/definition/metaphor> [Accessed 15th October 2017]

⁷⁸ Chapter 1.2, pp.17-18.

of *harmonia* as a fitting together of opposites according to the laws of musical proportion; both consider sympathy to be a means of communication and causal nexus between mind and body; and both adopt the view that we can have knowledge about the laws that order the universe through experience of those laws operating in the universe. This is possible because, as noted in Chapter 2⁷⁹, there is a correspondence, but not equivalence, between sensibility and intelligibility. There is however a significant difference in as much as Plotinus conceived the universe as a composite of *soul* and body, which in turn is a composite of *soul* and matter, whereas the Pythagoreans conceived the universe in terms of body and *soul* without making a distinction between form and matter. This brings us to the task of explaining the relevance of the harmonic model in Plotinus' conception of the origin, generation and function of matter, "the mirror of Dionysus".

4.4 The Nature and Origin of Matter (ύλη)

In *Ennead* II.4.5, 'On Matter', Plotinus distinguishes between intelligible matter as substantial number and form that acts as an archetype for physical matter; however, Carroll suggests that Plotinus was never clear in his own mind about physical matter; in fact Carroll refers to it as the "Plotinian albatross ... that weighed most heavily upon him" (Carroll, 2002, p.202). Once again, the text is full of ambiguity as well as alleged inconsistencies that have resulted in debate and disagreement amongst Plotinian scholars, and O'Brien speculates that Plotinus' lack of clarity is due to "the 'oath of silence' to which Plotinus, Origen and Erennius bound themselves on the death of their

⁷⁹ Chapter 2.4, pp.56-57.

common master, Ammonius” (O’Brien, 2012, p.76). It will be proposed that a deeper analysis of the text will reveal how the model of harmonics provides a solution that accounts for matter’s origin, generation and nature. However, before considering the debate and the harmonics solution in more detail, it is pertinent to clarify Plotinus’ theory of matter in *Ennead* II.4, ‘On Matter’, *Ennead* III.6, ‘On Impassibility’ and *Ennead* I.8, ‘On What are and Whence Come Evils’, the texts that commentators have regarded as inconsistent.

In *Ennead* II.4.6-16, Plotinus argues against the atom theory of matter, claiming that matter acts as a substrate for bodies and must therefore be different from them; it is simple and has its own nature. Matter is undefined because it is not form, and is continuous, lacking the quality we perceive in sense objects, including colours, temperature, weight, density, shape, size, quantity, magnitude or mass; however, as a substrate for bodies it is submissive to everything and receptive of quality. Matter is necessary for bodies even though it is incorporeal, and he acknowledges its existence is “apprehended by spurious reasoning”. While he describes it as unlimited, Plotinus explains that the unlimited also exists in *Intellect*, but it is different in as much as there it is limited by bounds and orders. Physical matter is the unlimited set in order, but it is not limited nor is it limit. Intelligible matter and physical matter differ as the archetype differs from the image, but physical matter is more unlimited because it “escaped from being and truth” (*Ennead* II.4.15, 23-24), and therefore has less existence. Both intelligible matter and physical matter possess ‘otherness’ but in different forms; while intelligible matter is ‘other’ than the *One* that is ‘beyond *Being*’, physical matter is ‘other’ than *Being* (*Ennead*, II.4.1, 6) and hence is “privation” (*Ennead* II.4.16, 3-5), unreal and a potentiality of *Being* that can never be actualised (*Ennead* II.5.2); it is “lifeless” (*Ennead* III.4.1,7) and “absolute indefiniteness” (*Ennead* III.4.1,12). In

Ennead III.6.7-11, matter is incorporeal, non-being, “a ghostly image of bulk”; “static without being stable”; “a phantom”, invisible and what lies on it is a lie While it is formless, it is unaffected by forms that appear on it, and indestructible. Matter is reflective like a mirror; however, unlike a mirror it is unseen. It acts as a repellent base and receptacle in which forms are concentrated on the outside. Matter is unaffected by the things seen it (*Ennead* III.6.7, 13-44) and remains what it was from the beginning (*Ennead* III.6.11, 18) and is evil because it is unaffected by the Good (*Ennead* III.6.11, 44-46); however, despite this, matter is a gift of Providence because it is a necessary cause of everything coming into being (*Ennead* III.6.15, 27).

In *Ennead* I.8, Plotinus addresses the question of good and evil as opposites, and as Armstrong comments:

The primary object of [this treatise] appears to be to provide a solid metaphysical foundation for Plotinus’ moral teaching about the necessity of purifying the soul by separating it from the material. (Armstrong, ‘Introductory Note’ to *Ennead* I.8, p.276)

Plotinus argues that there is no evil in the *Good* but claims that evil is necessary; the universe must be composed of opposing principles:

... it is necessary that what comes after the First should exist, and therefore that the Last should exist; and this is matter. (*Ennead* I.8.7, 21-22)

While Plotinus associates the *One* with the Good, he also suggests that absolute evil has the same nature as physical matter:

... unmeasuredness in relation to measure, and unboundedness in relation to limit, and formlessness in relation to formative principle, and neediness in relation to what is self-sufficient; always undefined, nowhere stable, subject to every sort of influence, insatiate, complete poverty. (*Ennead* I.8.3, 12-16)

Rist therefore comments that “the doctrine of the relation between evil and matter which can be found throughout the *Enneads*”, is “consistent” (Rist, 1961, p.166); however the debate about Plotinus’ theory of matter appears to have three key and interlinked themes: the first considers the origin and creation of matter, and the second two, the nature of matter; specifically, if everything emanates from the *One*, which is the ultimate *Good*, how could Plotinus regard matter as evil? And how could he consider matter as ‘non-being’ whilst insisting that its existence is necessary?

Let us first consider the debate about the origin and creation of matter, which arises because, as Majumdar notes, “it is anything but clear as to how matter itself originates” (Majumdar, 2007, p.110). She provides a helpful summary of the debate in response to Carroll (Majumdar, 2007, pp.112-113) who refers to three possible positions adopted by commentators:

- (i) Matter is independent of the *One* and opposed actively or passively to it; (ii) matter is the end product of the procession from the *One*; and (iii) the question of the origin of matter is meaningless since matter is nothing at all. (Carroll, 2002, p.181)

The view that matter is independent of the *One* is held by Bréhier and Pistorius who effectively argue for a dualism, that matter is opposed actively or passively to the *One*. While Bréhier suggests that matter participates in the *Good* and is independent of it, Pistorius argues against its creation because of its status as the negation of *Being*. (Bréhier, 1958, pp.174-181; Pistorius, 1952, p.68).

The view that matter is the end product of the procession from the *One* is a monistic interpretation that appears to have the most support; however, theories of how matter is generated vary. Deck, Inge and Narbonne argue that matter is generated in *Intellect*. Deck refers to *Ennead* II.4.12, 8 where Plotinus states that *Intellect* is prior to

matter and to *Ennead* V.8.31, 7, where he states that matter is the last of the forms and that all form is in *Intellect* or dependent on it (Deck, 1971, pp.103-104). Inge argues that matter was not created in time because it was necessary for *soul* to actualise its interests, therefore it must have been created in *Intellect* (Inge, 1929, p. 137; p.144). Narbonne rejects the notion that *soul* generates matter and favours the view that “matter falls out or is expelled from the intelligible” (Narbonne, 2011, p. 43).

O’Brien suggests that matter was generated by the partial vegetative *soul* because in *Ennead* III.4.1 Plotinus appears to suggest that *soul* is the origin of matter, and in *Ennead* IV.3.9, that matter borders on *Soul*:

For soul has the power of growth... Does this power of growth, then, produce nothing? It produces a thing altogether different from itself; for after it there is no more life, but what is produced is lifeless ... absolute indefiniteness.
(*Ennead* III.4.1, 4-12)

Soul’s rest is, we may say, confirmed in absolute rest; a great light shines from it and at the outermost edge of this firelight there is a darkness. Soul sees this darkness and informs it, since it is there as a substrate for form. For it was not lawful for that which borders on soul to be without its share of formative principle, as far as that was capable of receiving it, of which the phrase was used “dimly in the dimness” which came to be. (*Ennead* IV.3.9, 23-29)

While Carroll considers it a “remote possibility, if not impossibility” that the generator of matter is *soul* (Carroll, 2002, p.199), he rejects the notion that *Intellect* generates matter and suggests that we can consider it in terms of the causative power of the *One* as described by Proclus on the basis that the *One* is ultimately the efficient and final cause of everything (*Ennead* IV.8.14, 20-33):

Thus, for Proclus, the causative power of the One extends to the whole universe. Everything in the universe including unformed and chaotic matter derives its reality (or non-being) from the One. The activity of Intelligence does not reach down as far as The One’s precisely because it is not the primary

principle or causative power. Intelligence does not generate matter. This is not to say, however, that Intelligence in no way affects matter. It shapes it like a potter shapes his clay, but as the potter does not cause clay to be clay.

Intelligence does not cause matter to be matter. (Carroll, 2002, pp.190-191)

This monistic interpretation is also shared by Armstrong (Armstrong, 1966, p.xxiv), Dodds (Dodds, 1960, pp.21-22), Henry (Henry, 1960, pp.236-237) and Trouillard (Trouillard, 1955, p.15).

The final view, that the question of the origin of matter is meaningless since matter is nothing at all, is held by Carbonara (Carbonara, 1954), Murry (Murry, 1951, p.234) and Katz (Katz, 1950, p.44) who argue against the dualistic and monistic positions referred to above, claiming that matter is utter negation. It therefore cannot exist independently, nor be included in the generative process. O'Brien challenges this view by arguing that when Plotinus refers to the non-being or privation of matter he is adapting "the paradoxical definition of a 'form that is, of what is not' in Plato's Sophist (258 D 5-7)".⁸⁰

'Otherness' and all the 'parts' of otherness participate, as do all the forms, in 'being' (the form), since otherwise there would not even 'be' a form of otherness at all. The paradoxical conjunction of 'being' and 'non-being' arises therefore when the part of otherness that participates in being is also opposed to being. 'The form that turns out to be, of what is not' (258 D 6) is a form of 'what is not', because it is the very part of otherness that is opposed to being, but a form that nonetheless 'turns out to be', because even the very part of otherness that is opposed to being cannot but participate in being. (O'Brien, 2012, p.31)

⁸⁰ See also: Rist, 1961, p.156.

O'Brien therefore explains that to understand Plotinus we must make the distinction between "'non-being' as a part of otherness and 'non-being' as sheer nothingness, as non-existence" (O'Brien, 2012, p.42).⁸¹

Let us now consider how the harmonics model has the potential to provide a coherent solution that accounts for matter's origin, generation and nature. In the following explanation I refer to matter as 'it', acknowledging with O'Brien that while matter is non-being this does not make it non-existent, even though Plotinus offers no clarification of what matter is.

In *Ennead* V.8.7, 23, Plotinus refers to matter as "a sort of ultimate form"; hence "this universe is all form, and all the things in it are forms" (*Ennead* V.8.7, 24); however, the ultimate form is infinite:

For as long as the division of a genus for instance, arrives at another form, it is not yet infinite; for it is limited by the forms which have been generated; but the ultimate form which is not divided into forms is more infinite. (*Ennead* VI.2.22, 15-17)

Furthermore, he conceives of matter as a "flat surface":

What it might have grasped ... slips away from it as if from an alien nature, like an echo from smooth flat surfaces. (*Ennead* III.6.14, 26)

So, while matter is "a sort of form" it is not a form that has motion, shape or number, and it is "unmeasure" because of its infinite and indefinite nature. It is considered to be "the primary evil" (*Ennead* I.8.8, 37-38) because it lacks the perfection of the *One* as a power to generate something other than itself; it merely acts as a substrate that reflects the forms projected onto it as perceived images that divert the attention of the *soul* away from the *One*.

⁸¹ See also: O'Brien, 1996; O'Brien, 2014; Armstrong, *Ennead* I.8.3, note 3, pp.282-3.

Plotinus used the lyre as an example of a vibrating string in his explanation of sympathy and it is also a good example for understanding how the generation of matter is consistent with the generation of harmonics. Figure 12 (p.78) demonstrates that as harmonics are generated from the fundamental vibration, the nodes increase in number and the standing waves become progressively shorter, and while the illustration is necessarily limited, if we think in terms of an infinite series, eventually a flat line is generated within the fundamental when the distance between the nodes approaches zero. Similarly, if one presses on a vibrating string at every point it ceases to vibrate, and a flat line is effectively created. If the nodes are considered as places of rest where no motion is perceived, the flat line must also be at rest; hence no movement, and no power to generate offspring from itself. The flat line is infinite as it has no distinguishable nodes and therefore no substantial number, hence it is “unmeasure”. It is indefinite or unlimited because it has no boundary as does the nature of a specific form. Since it has no number it cannot be included in the Plotinian decad that is a unity of otherness, sameness, motion and rest in *Being*⁸²; therefore, it makes sense that Plotinus considers it as non-being and irrational. However, despite lacking motion, matter does possess three of the four primary kinds; otherness because it is “otherness in itself” (*Ennead* II.4.13, 18) and is therefore other to otherness in *Being*; sameness because it remains what it was from the beginning; it cannot be altered (*Ennead* III.6.10); and rest because it is lifeless (*Ennead* III.4.1), hence Plotinus can claim:

Those who make the demand to abolish evil in the All are abolishing providence itself. (*Ennead* III.3.7, 6-7)

⁸² Chapter 3.5, pp.93-96.

While Plotinus does not consider matter to have a place in *Being* he does not eliminate it entirely from *Intellect* because “all that is here below comes from there” (*Ennead* V.8.7, 17-18), and one can assume that “everything” includes matter, presumably because all *souls* and matter are generated in *Intellect* as its internal activity:

Intellect holds the soul which comes after it so that it is in number, and holds soul down to its last part, but its last part is altogether infinite. (*Ennead* VI.2.22, 20-23)

This is consistent with the views of Rist and Inge who note Plotinus’ assertion that matter is not generated as a temporal process:

In the early treatise 4.8, Plotinus mentions two theories current among the Platonists concerning the origin of matter. Either matter has always existed, or its generation is the necessary consequence of its causes which were "before" it (4.8.6). The *πρὸ αὐτῆς* here certainly refers to the temporal creation of matter as opposed to its eternal existence. It is quite certain that Plotinus' final view is that matter exists eternally and is not in any sense a temporal creation. (Rist, 1961, p.157)

If matter has eternal existence it may be argued that it is already present in *Intellect* as its internal activity when the *World Soul* contemplates the forms in *Intellect* and orders the universe in temporal succession, and matter must be contemplated prior to the forms so that it may act as a substrate for the forms.

Plotinus refers to both intelligible matter and physical matter metaphorically as “darkness”,⁸³ and in Chapter 3,⁸⁴ it was proposed that for Plotinus the “darkness” of intelligible matter in its undefined radiation from the *One* is a metaphor for inaudible sound, that is, sound as pure energy that will be broken up into sound waves or

⁸³ On the darkness of matter, see Deck, 1991, p.44 and O’Brien, 1996, p.182.

⁸⁴ Chapter 3.2, pp.70-71.

vibrations in *Intellect*. It seems reasonable to conclude that Plotinus conceives physical matter as an image of intelligible darkness, and therefore a metaphor for sound as phenomenal experience. As Plotinus says, it's "like an echo from smooth flat surfaces" (*Ennead* III.6.14, 26). We do not perceive physical matter itself, only the forms or vibrations reflected by it, and we are able to do so because we are in sympathetic resonance with them. Since the Pythagoreans made no distinction between form and matter, Plotinus follows Plato in realising the necessity for a reflective surface so that images arise in perception. The images that we perceive as physical reality are not in matter but formed by the faculty of imagination each *soul* possesses. This will be examined in more detail in Chapter 8.

The interpretation based on the harmonics model brings us no closer to understanding what matter is; however it concurs with the monistic view. The *One* is ultimately the cause of all things by the gift of its power; however, it is *Intellect*, considered as the 'fundamental' which begins the harmonic series that culminates in matter, simply as a result of its continual halt and turning towards the *One* in its desire for the *Good*. If matter originates in *Intellect* it cannot be independent of it as proposed by Bréhier and Pistorius, and while Carroll is mistaken to reject the notion that *Intellect* generates matter, he is right to suggest that we can consider matter in terms of the causative power of the *One* as described by Proclus on the basis that the *One* is ultimately the efficient and final cause of everything (*Ennead* VI.8.14, 20-33). Matter cannot be the end product of the procession from the *One* if considered as a distinct entity that follows the generation of *Intellect* and *Soul* as *Hypostases*, and as a substrate for the forms its origin cannot be considered meaningless because matter is nothing or non-existent. Narbonne is correct to reject the notion that *Soul* generates matter if considered as *Intellect's* external activity; however, it could be argued that *Soul*

generates matter as harmonics in the process of *Intellect's* internal activity. Matter cannot be expelled from *Intellect*, nor does it simply fall out of *Intellect* since it must be contemplated by the *World Soul*. Similarly, the harmonics model does not concur with O'Brien's theory that the partial or vegetative soul, generates matter as its external activity. It is therefore proposed that physical matter never was an "albatross" carried by Plotinus because his metaphysics is modelled on a theory of harmonic generation, which concurs with the text and explains its origin, generation and nature.

Conclusion

This Chapter argues that the harmonic model and Pythagorean influence is operational at every stage in the procession from the *One* and resolves difficulties perceived by commentators concerning Plotinus' ambiguity about the various levels of *Soul* in general and the origin and nature of matter. It clarifies the various levels of *Soul*, challenges the view that the *Hypostasis Soul* is a rational form, and explains how Plotinus could conceive of *World Soul* as the eldest. It explains how each primary *Soul* form generates its own offspring as an infinite series and why Plotinus conceived them as being expressed one after another in temporal succession as in a musical scale or melody.

The examination of the characteristics of the *World Soul* and individual souls, together with their association explained how Plotinus utilised the Pythagorean concepts of *harmonia* and *sympathia*, and it was speculated that Plotinus' concept of *synesis* is similar to the *a priori* innate musical intuition as proposed by Aristoxenus and that this may have been an epistemological influence on him. These concepts are intimately linked to, ultimately depend on, and therefore support the model of

harmonics proposed in Chapter 3. It was suggested that the view held by some commentators, that Plotinus' primary influence was the Stoic concept of *sympathia*, requires re-evaluation because the Pythagorean interpretation is more compatible with his theory.

Disagreements amongst scholars concerning the role of music and musical metaphors in the *Enneads* were noted, and it was suggested they arise because of a failure to comprehend that harmonics are generated in *Intellect*. It was therefore proposed that the Pythagorean influence on Plotinus has been misunderstood and underemphasised in his theory of *Soul*, because other than their respective theories of matter, there is little to separate them.

The examination of the generation of multiplicity in the *Enneads* concluded with an examination of how Plotinus conceives the nature and origin of physical matter, noting again differences of interpretation among commentators, because they perceived a lack of clarity in Plotinus. It was argued that as harmonics are generated from the fundamental as an infinite series, the nodes increase in number while the standing waves become progressively shorter, thus generating a flat line that is at rest as the distance between the nodes approaches zero. It conforms to Plotinus' assertion that matter is "a sort of form" having its origin in *Intellect*. Its lack of movement means it has no power to generate anything; hence matter acts as substrate for the forms which Plotinus conceives as a reflective surface, just as matter acts as a reflective surface onto which sound waves are projected to produce sound that is perceived. While the model of harmonics accounts for the generation of matter and for why physical matter does not exist in *Being* but is necessary for the making of the universe, it does not explain what matter is.

It is proposed that the model of harmonics adopted by Plotinus together with the influence of the Pythagorean tradition was understood by Bergson and contributed to the incorporation of Pythagorean features into his metaphysics, though like Plotinus he does not always make them explicit in the text. This will therefore be explored in the next Chapter.

Chapter 5

Bergson - God, the *Élan Vital* and the Generation of Multiplicity

*

Introduction

This Chapter presents the argument that, like Plotinus, Bergson models his cosmology on the physics of sound and music theory, and explains how Bergson's generation of multiplicity, or 'creative evolution', is what Mossé-Bastide refers to as a "dynamic schema" that is "rooted in the philosophy of Plotinus" (Mossé-Bastide, 1959, p.355). It sets the stage for Chapter 6 in which it will be argued that Bergson's philosophy of transformation is influenced by Pythagoreanism.

In *Creative Evolution* Bergson traces unorganised matter and all forms of life back to God and the *élan vital*. His conflation of these concepts meant his cosmology was deemed obscure when *Creative Evolution* was published, and even though he later attempted to clarify himself in *The Two Sources of Morality and Religion*, commentators still consider these concepts ambiguous. It will be argued that Bergson followed Plotinus and the Pythagoreans in presenting a non-pantheist philosophy in which the First Principle remains independent but present within its progeny.

The generation of multiplicity as presented in *Creative Evolution* is also considered mysterious by commentators due to Bergson's reliance on metaphor to explain it; however, it will be clarified, with the use of illustrations, how Bergson follows Plotinus in adopting harmonic motion as the mechanism of the *élan vital* that generates itself as an impersonal supra-consciousness, thus replicating Plotinus' generation of the 'form' *Intellect* as the first harmonic. This will be followed by an

explanation of the ontological and epistemological transformation of the *élan vital* as it divides into matter and consciousness as separate tendencies, according to the model of harmonics. It will be argued that while Bergson uses novel concepts, the underlying ontological and corresponding epistemological structure of his philosophy basically replicates Plotinus but differs from him because he synthesises *Intellect* and *Soul* into the function of a supra-consciousness generating the vital and geometrical orders in a wholly temporal process. The focus on harmonics in this Chapter means that any potential influence of French Spiritualism on his cosmology has not been examined.

5.1 Bergson's Principle of Unity - God/*Élan Vital*

Bergson's concept of unity is encompassed within his concepts of duration, the *élan vital* and *God*. He always denied his philosophy was systematic because he considered it a work of collaboration open to further development, and as such his earlier works intentionally avoided the notion of a First Principle; however, it will be argued that Bergson followed the Pythagoreans and Plotinus by advocating a philosophy that can be categorised as *panentheism*.

Duration was the concept introduced in *Time and Free Will* and is the fundamental concept underlying all his work. Duration is an indivisible and continuous multiplicity of interpenetrating heterogeneous and qualitative psychic states, and whose nature is a 'one-many' temporal unity of direction because it prolongs the past into the present and the present into the future ('Introduction to Metaphysics' in C.M. p.165).⁸⁵ For Bergson, duration cannot be viewed from the perspective of unity or multiplicity

⁸⁵ See also: 'Introduction to Metaphysics', in C.M., pp.168-176

without resorting to ready-made concepts, the analysis of which fails to capture duration in its essence, and in *Matter and Memory*, he aimed to “to lessen greatly, if not to overcome, the theoretical difficulties that have always beset dualism” by uniting mind and matter under the umbrella of duration or consciousness, despite referring to the theory as “frankly dualistic” (M.M., p.vii). His task in *Creative Evolution* is to explain the *élan vital* as a ‘one-many’ durational, creative and productive impulse or power implicit in the evolutionary process of life; hence it is “the principle of all life, as also of all materiality” (C.E., p.238). Furthermore, he introduces the notion of the *élan vital* as “supra-consciousness” that is “pure creative activity” (C.E., p.245) and “the origin of life” (C.E., p. 261). For the first time he briefly introduces the link between the *élan vital* and God:

God, thus defined, has nothing of the already made; He is unceasing life, action, freedom. Creation, so conceived, is not a mystery; we experience it in ourselves when we act freely. (C.E., p.248)

The God of *Creative Evolution* does not appear to be a transcendent first cause as is Plotinus’ *One*, but the *élan vital* itself as supra-consciousness, defined during the course of its life. *Creative Evolution* was therefore the source of much debate about Bergson’s concept of God being immanent in the world, because he chose not to clarify his position, commenting that “Everything is obscure in the idea of creation if we think of things which are created and a thing which creates” (C.E., p.248). There is within the *élan* the need to live and know, and like Plotinus, Bergson thinks the “theory of knowledge and theory of life are inseparable” (C.E., p.xiii) because “the act of knowing coincides with the act generating reality” (*Mélanges*, p.774). For Bergson, mind and matter are opposing tendencies conceived as two aspects of the *élan vital*, co-existing as an undifferentiated unity that is “an immensity of potentiality” (C.E., p.258 and

p.269); therefore, as God appears to be dependent on matter for its existence, commentators accused him of failing to account for the genesis of matter,⁸⁶ unsurprisingly prompting multiple accusations of pantheism. Bergson was adamant he had been misunderstood, and in 1908 following a critical article by Tonquédec, published in *Etudes*, he replied to him by letter. He stated that in *Creative Evolution*, he refers to God as being the source from which two *élans* develop alternately; God is therefore distinct from them, and as such, we cannot say it comes to a sudden end or that it is at the mercy of the materiality that it had to give itself. Furthermore, he suggested his refutation of the idea of “nothing” is not to deny a transcendent source, but to assert something has always existed (*Mélanges* pp.766-767).⁸⁷ In *Creative Evolution*, Bergson develops Plotinus’ argument that space, or place is not prior to the *One*, claiming that because all action is geared towards “creating something that does not yet exist” (C.E., p. 273) the mind habitually forms the idea that something comes from nothing and due to the intellect’s tendency to spatialise, “being is superimposed on nothing” (C.E., p. 276); hence philosophies that prioritise nothing over ‘being’. Whereas we tend to think there is less in the idea of nothing, than in the idea of something, in fact, by making it non-existent we automatically add existence to it; hence there is more in the idea of nothing than the idea of something. For Bergson the idea of nothing is an illusion of our understanding because we are always conscious of something, whether it is outside of us or within. “A suppression of everything is never

⁸⁶ Mullarkey, 2000, pp. 80-82. Mullarkey notes that the origin of matter is “ambiguous” in Bergson: “Matter is sometimes opposed to life, sometimes to ‘spirit’ or consciousness and sometimes to the *élan vital* (the latter four being made equivalent). Alternatively, life is also regarded as a primitive, holding matter and spirit as potential forms within itself.”

⁸⁷ «Je parle de Dieu (pp.268-272 de l’*Évolution créatrice*) comme de la source d’où sortent tour à tour, par un effet de sa liberté, les « courants » ou « élans » dont chacun formera un monde : il en reste donc distinct, et ce n’est pas de lui qu’on peut dire que « le plus souvent il tourne court », ou qu’il soit « à la merci de la matérialité qu’il a du se donner ».

formed by thought” (C.E., p.279). As soon as we try to annihilate an idea we affirm its real or possible existence. In effect he is suggesting that when ‘thinking’ “not-being is not” it entails that “not-being is”, though the view that a negative existential claim entails the existence of its referent can certainly be challenged. Like Plotinus, he also refutes the idea of the first principle having a purely logical existence, because an axiom or definition as per Spinoza or Leibniz has no independent physical or psychological existence, thus leaving no room for freedom within efficient causality (C.E., pp.275-298). Efficient causality is essentially the creation of novelty, and like Plotinus, the first principle is ultimately free because everything that follows is dependent upon it as the primary and efficient cause.⁸⁸ For Bergson then, there must be an independent transcendent cause, and whilst in his reply to Tonquédec he acknowledged that he failed to convey its nature in *Creative Evolution*, he also denies stating that it is the world itself, because the book “explicitly affirms the contrary” (*Mélanges*, pp.766-767).

In his Huxley Lecture on ‘Life and Consciousness’, delivered to the University of Birmingham in May 1911, Bergson states: “We may surmise that these two realities, matter and consciousness, are derived from a common source” but neither can be explained apart from the other (M. E., p.23), and in January 1912, Tonquédec published an article entitled ‘M. Bergson est-il moniste?’ (Tonquédec, 1912, p.296), prompting Bergson to strongly refute any accusation of monism or pantheism. Bergson argued that his work leading up to *Creative Evolution* clearly points to the idea of God as a creator, freely generating both matter and life, but whose creative effort is continued in the realm of life by the evolution of species and the constitution of human personalities. Bergson suggested that an investigation of moral problems would be necessary to

⁸⁸ The concept of freedom will be examined in Chapters 8 (Plotinus) and 9 (Bergson)

develop these conclusions more precisely (*Mélanges*, pp.963-964). His position was further clarified by H. Wildon Carr, whose translation of the book *Mind-Energy*, a compilation of Bergson's lectures and essays, was authorised and approved by Bergson and published in 1920. In his 'Introduction' he states:

But although the term Mind-Energy does not, and is not intended to, imply a physical concept of mind, yet it is meant to imply, and does depend upon, a metaphysical concept. Mind is not a *vis vitae* convertible into *vis inertiae*. Equally impossible is it to conceive an ultimate dualism, - mind and matter as the co-existence of two independent realms of reality. Mind and matter are divergent tendencies; they point to an original and necessary dichotomy; they are opposite in direction; but they are mutually complementary and imply the unity of an original impulse. (M.E., 'Introduction', p.vii)

It was not until 1932 that Bergson developed the theme of evolution within a moral, religious and therefore social context in *The Two Sources of Morality and Religion* and clarified his thoughts on the nature of God in his investigation of mystical experience, claiming the mystic reveals the origin of the *élan vital* as God. He remains undecided as to whether the *élan vital* is God or God's effort to create:

In our eyes, the ultimate end of mysticism is the establishment of a contact, consequently of a partial coincidence, with the creative effort which life itself manifests. This effort is of God, if it is not God himself. (T.S.M.R., p.220)

What should we make of this? If God is the creative effort, life manifests God; and if the creative effort is of God, life manifests God's creative effort, and therefore God is distinct from his creative effort and hence life. The difficulty is exacerbated because Bergson often equates the vital impulse with life. Furthermore, "The vital impulse is a creative emotion" (T.S.M.R., p.95) and "Creative energy is to be defined as love" (T.S.M.R., p.257), but "Divine love is not a thing of God; it is God himself" (T.S.M.R.,

p.252). From this we can deduce that the vital impulse is the creative emotion defined as love which is God. God is the vital impulse, i.e. life, and therefore is not distinct from it. Accusations of pantheism and monism therefore continued even after publication of *The Two Sources of Morality and Religion*. Mossé-Bastide suggests we must eliminate the concept of substance monism from Bergson because “there is no substance in Bergsonism”, referring to *Creative Evolution* in which he states: "there are no things, only actions" (Mossé-Bastide, 1959, pp.354-355).⁸⁹ This will be demonstrated in the explanation of the ontological and epistemological transformation of the *élan vital*.⁹⁰

There is a second aspect to God in the *Two Sources*; God is distinct from beings (T.S.M.R., p.257) but acts through the soul of the mystic, supplying a “superabundance” of energy that “flows from the spring which is the very source of life” (T.S.M.R., p.232); “God is this energy itself”, and God’s nature is “an energy to which no limit can be assigned, and a power of creating and loving that surpasses all imagination” (T.S.M.R., p.262). Finally, we distinctly hear the echo of Plotinus’ *One*; a God with a superabundance of energy that flows like a spring, which appears to be different to the *élan vital* of *Creative Evolution* that he refers to as an “explosive force” that is given once and for all (C.E., p.98). There is however an important difference between Bergson’s God and Plotinus’ *One*; whereas the *One* of Plotinus is self-sufficient, Bergson’s God in the *Two Sources* is needy. He does not propose teleology in terms of predetermined design with a final purpose but supports a partial teleology in that God has an impulse, or a “need”, to reproduce and evolve in a form that requires a freely chosen process of change, creation and growth. “God needs us, just as we need

⁸⁹ See: ‘Philosophical Intuition’, in C.M., p.127 and ‘Perception of Change’, in C.M., p.148.

⁹⁰ Section 5.3, p.157.

God. Why should He need us unless it be to love us?" (T.S.M.R., p.255). This need is expressed in life's most fully evolved form, man, operating through the motives of love and ambition:

...he who is sure, absolutely sure, of having produced a work which will endure and live, cares no more for praise and feels above glory, because he is a creator, because he knows it, because the joy he feels is the joy of a god. (M.E., p.30)

Merleau-Ponty captures the essence of this aspect of Bergson's God in *The Two Sources*:

It is the doubling of nature into an irreconcilable *natura naturans* and *natura naturata* which in the *Two Sources* actualizes the distinction between God and his action upon the world that remained virtual in the previous works. It is true that Bergson does not say *Deus sive Natura*, but the reason why he does not is that God is a different nature. At the very moment he definitively disengages the "transcendent cause" from its "terrestrial delegation", it is still the word nature which falls from his pen. From this point forward, all that was truly active and creative in the world is concentrated in God, and the world ends up as nothing but a "stopping point" or "created thing". (Merleau-Ponty, 1964, p. 189)

Mossé-Bastide makes the point that as it is the key element in Bergson's philosophy we can take duration in two ways, either as an evolution of unpredictable novelty, even for God, or "as the creation of a kind of dynamic schema of creative emotion that reigns, one and indivisible throughout its deployment". She continues:

It is this second interpretation, directly derived from the philosophy of Plotinus, which appears to us to be true. ... The last word is always Bergsonian duration, but a duration that is rooted in the philosophy of Plotinus. (Mossé-Bastide, 1959, p.355)

In stating that Bergson's duration is rooted in the philosophy of Plotinus, Mossé-Bastide notes that Bergson is more specifically influenced by the durational nature of Plotinus' concept of the *World Soul* that constantly changes whilst retaining its identity, and she points to *The Two Sources of Morality and Religion* where Bergson refers to the difference between materiality and divine spirituality as "the distinction between being created and creating, between the multifarious notes, strung like pearls of a symphony and the indivisible emotion from which they sprang" (T.S.M.R., p. 256).

Since Bergson denied that his philosophy is pantheistic because God as creator remains distinct from its creations, it is suggested that it can be placed in the category of *panentheism*, which is defined as the view that God is in all things, but not identical to all things (Audi, 2005, p.640).

The philosophy of Plotinus as well as other Neoplatonists was also interpreted as pantheism by the Catholic Church in the late nineteenth century. In John Hunt's book *Pantheism and Christianity* (1884) he refers to the whole of Greek philosophy, including Neoplatonism, under the heading of Pantheism.⁹¹ While there is little disagreement about the separate identity of the *One* in the emanation process or descent, the debate around Plotinus' theism largely centres around the mystical union of the *soul* with the *One*, and there appear to be three positions taken by commentators: the first is theistic union (Rist, 1977; 1989); the second, monistic identity (Bréhier, 1958; Hadot, 1986; Hatab; 1982; Irwin, 1989; Mamo, 1976), and the third argues for a mystical union that is mediated epistemologically by *Intellect* (Arp, 2004; Inge, 1929; Merlan, 1963; Katz, 1978). Rist makes the distinction between the first two positions as follows:

⁹¹ Hunt, 1884. Plotinus is specifically addressed on pp.89-96.

By "theistic mysticism" I refer to the explanation of mystical experiences in terms of the union of the soul with a transcendent being: the theistic mystic insists that despite his experience of union, the soul and that transcendent being cannot "ultimately," or "in the last resort," be identical. By a "monistic" explanation I mean an explanation given by a man who believes that he is "ultimately" identical with God, the One, the Absolute, or whatever such name he gives to the first cause of the universe. (Rist, 1989, p.184)

Arp argues that while both camps believe that the noetic part of the soul is transcended in mystical union itself whilst retaining its identity, there is a difference between the ontological and epistemological perspective. While the *One* retains its ontological distinctness, epistemologically Plotinus equates the *One* with *Intellect*:

... there seems to be reluctance on Plotinus's part wholly to divorce the activity of Nous from the One. (Arp, 2004, p.157)

While the "monistic identity" interpretation would place Plotinus within the category of pantheism, that God is identical with all things, the view that Plotinus was a pantheist is rejected by most modern commentators on Plotinus. Armstrong for example, writes:

It is...the sharp differentiation between the human soul or self, with its power of realizing its unity with the Supreme, and the separation of the visible cosmos, which most clearly makes it impossible to call Plotinus a pantheist, or to exaggerate the importance of the doctrine of the Infinite Self. (Armstrong, 2013, p.43)

Rist's theistic mysticism is compatible with *panentheism*, the view that God is in all things, but not identical to all things, and Cooper comments that since Plotinus makes "clear ontological distinctions" between the *One*, *Intellect* and *Soul*, it is a case of "classical panentheism" (Cooper, 2007, pp.42-43).

The third position, which acknowledges the ontological distinctness of the *One* but argues for epistemological union, leaves a question mark over the nature of Plotinus' theism.

In his early career, Bergson appears to consider the subject solely from an ontological perspective and held a pantheistic view of Neoplatonism, whilst rejecting Pythagoreanism as pantheistic. In his lecture on 'The Pythagoreans' delivered at the Université de Clermont-Ferrand between 1884 and 1885, he rejects the emergence of multiplicity from an original unity as being Pythagorean; instead he links it to the later philosophy of the Neopythagoreans and Neoplatonists:

According to the Neopythagoreans and the Neoplatonists, Pythagoras would have identified the One with Divinity. ... It is certain that the Pythagoreans recognised multiple gods, while following to a certain extent the direction of monotheism, which was so important in philosophy starting from Xenophanes. We therefore reject it as being like a neo-Platonic theory, the idea of the development of God in the world, of a division, an emanation of the original unity giving birth to the oppositions of the one and the many. This is a pantheistic theory which the Pythagoreans probably never considered. (Hude, 2000, p. 187)⁹²

In note 54 of Bergson's lecture, Hude comments: "Bergson never varies in his opposition to this kind of representation and of pantheism in general" (Hude, 2000, p. 274).⁹³ It is suggested that Bergson fails to make the distinction between pantheism and *panentheism*, and as discussed above, the issue is one of identity. It was explained in Chapter 3 that the Pythagoreans, Neopythagoreans and Neoplatonists considered the original unity (the *One*) to be prior to number and not identical to it. The *One* is the *One*, not the One-many, which is for Plotinus the second Hypostasis, *Intellect*, (*Ennead*

⁹² Appendix 2, p. 7

⁹³ Appendix 2, p.11

V.4.1, 23) or the ‘one and many’ which is *Soul* (*Ennead* VI.9.1, 39). If pantheism is the view that God is identical with all things, and *panentheism* is the view that God is in all things, but not identical to all things, then Bergson was mistaken; the Neopythagoreans and Neoplatonists were not pantheists. This view is accepted by most modern commentators on Plotinus. Armstrong for example writes:

It is...the sharp differentiation between the human soul or self, with its power of realizing its unity with the Supreme, and the separation of the visible cosmos, which most clearly makes it impossible to call Plotinus a pantheist, or to exaggerate the importance of the doctrine of the Infinite Self. (Armstrong, 2013, p.43)⁹⁴

If we consider that Bergson’s Pythagorean lecture was given in the early days of his philosophical studies, I think we can accept it as a simple misunderstanding that he later corrected, because he amended his views regarding Plotinus. In his ‘Lectures on Plotinus’, presented at the École Normale Supérieure between 1898 and 1899, he states: “If the system seems to demand a pantheistic derivation, Plotinus expresses himself in terms which exclude this derivation” (Hude, 2000, p.63).⁹⁵ So, for Bergson, the Pythagoreans and Plotinus ultimately present a non-pantheist philosophy in which the First Principle remains distinct from but present within its products; a position that is fully in accordance with his own, even though it took many years for him to clarify it.

It is possible that the Pythagorean influence can be found more directly in Bergson in some of the metaphors he uses, for example, he refers to the *élan vital* as the “breath of life” (C.E. p.100; T.S.M.R., pp.11, 134, 311 and 312), and while this could

⁹⁴ See also: Rist, 1977, p.216; Copleston, 1993, p.467; Corrigan, 2005, pp.185-6

⁹⁵ Appendix 4, p. 40

simply be referring to the Bible, Genesis 2.7,⁹⁶ it could be the breath of life associated with Pythagoreanism. It must be remembered that Bergson's primary source of information on the Pythagoreans was Aristotle and Boutroux's translation of Zeller's *Die Philosophie der Griechen in ihrer geschichtlichen Entwicklung*. Kahn refers to Aristotle, *Physics* IV, 6, 213b 22, and comments, for the Pythagoreans:

Cosmogony begins as the numbers are generated, when the Unlimited is drawn in (or "breathed in") by the limiting principle. Thus the cosmos arises from the One by breathing, like a newborn animal. (Kahn, 2001, p.29)

Zhmud claims that this idea arises in sixth century natural philosophy, but it is incompatible with Philolaus' concepts of limiting and unlimited that are united by cosmic harmony (Zhmud, 1998, p.6). Zeller also rejected the notion of a breathing cosmos as being Pythagorean (Zeller, 1881, p.473); however, we must consider Hude's comment: "Bergson uses Zeller as a template and builds his bibliographic information on it; that does not mean that he simply repeats Zeller and works second-hand" (Hude, 2000, pp.11, note 5). The evidence suggests we can only speculate on Bergson's 'breath of life' as having a Pythagorean origin; however, there is another possible Pythagorean link when he links his God metaphorically with "fire". He claims it is by studying the lives of the mystics and striving to experience what they experience, that we may penetrate by an act of intuition to the life principle itself:

To pierce the mystery of the deep, it is sometimes necessary to regard the heights. It is earth's *hidden fire* [my emphasis] which appears at the summit of the volcano. ('Life and Consciousness', in M.E., p.32)

⁹⁶ "And the LORD God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."

It is not unreasonable to link it to the ‘central fire’ of Philolaus if we consider the other similarities in their first principle, as well as the appearance of other Pythagorean metaphors in his work.⁹⁷

It is suggested that the Pythagoreans, Plotinus and Bergson can be placed in the category of *panentheism* providing Plotinus was correct in interpreting the Pythagorean *Monad* from a Platonic perspective; although for the purpose of determining the Pythagorean influence on Plotinus, his accuracy on this point is irrelevant. Significantly, they all propose the unity of a first principle that remains distinct from, but active within, its products.

The next stage in understanding the generation of multiplicity in Bergson is to establish the nature of the mechanism of the *élan vital* and hence duration.

5.2. The Nature and Mechanism of the *Élan Vital*

Bergson follows Plotinus in adopting a ‘top-down’ approach where God functions, as does Plotinus’ *One*, as the energy source for the generative process, and for Bergson the *élan vital* functions as does the radiation from the *One*, as the form of superabundant energy that unceasingly creates a continuous or “uninterrupted upsurge of novelty” (‘Introduction I’, in C.M., p.18). However, even renowned Bergson scholars have found Bergson’s cosmology problematical and have failed to understand and therefore explain it as being a logical process. The tendency is to either repeat what Bergson says in his texts, ignore it entirely because of its perceived obscurity, or acknowledge the overriding mystery surrounding it; Keith Ansell Pearson, for example,

⁹⁷ These will be discussed in Chapter 6.

refers to the operation of the *élan vital* as “a mysterious conception ... which is ultimately based on a hylomorphic model” (Ansell Pearson, 2006, p.158). The generation of multiplicity as matter and form in Bergson therefore demands an explanation.

While the *élan vital* is analogous to the radiation from the *One* because it contains an undifferentiated multiplicity, for Bergson consciousness⁹⁸ and matter are pre-requisites for existence. In *Matter and Memory* he proposed:

existence ... appears to imply two conditions taken together: (1) presentation in consciousness; and (2) the logical or causal connection of that which is so presented with what precedes and with what follows. (M.M., p.189)

Hence, we find in all Bergson’s works that the generation of novelty requires the interaction of two opposing but complementary tendencies, described in *The Two Sources of Morality and Religion* as being formed according to the “law of dichotomy”:

Now we must not make exaggerated use of the word "law" in a field which is that of liberty, but we may use this convenient term when we are confronted with important facts which show sufficient regularity. So we will call law of dichotomy that law which apparently brings about a materialization, by a mere splitting up, of tendencies which began by being two photographic views, so to speak, of one and the same tendency. (T.S.M.R, p.296)

This passage emphasises “regularity” in the process, and in *Creative Evolution* Bergson states that duration, multiplicity, the universe and organic life within it “is a kind of mechanism”, and a mechanism of the whole (C.E., p.31; p.263). Mullarkey comments that it is a “movement” that is ordered, rather than “the mechanism of parts artificially

⁹⁸ It must be clarified that for Bergson consciousness or mind is not a state of the brain, which he refers to as the ‘organ of attention to life’; the function of the brain is to direct mental life into bodily movement or ‘efficacious action’ (‘The Soul and the Body’, in M.E., pp.37-74). The *élan vital* does not possess a brain, and its function has no practical utility.

isolated within the whole universe” (Mullarkey, 2000, p.74). This idea underlies Bergson’s assertion that there is no disorder, just orders of a different kind; order in time and order in space. The necessity of order is noted by Lorend:

Bergson does not explicitly state it, but necessity is an important characteristic of order in two senses: 1) ..., that the existence of some kind of order is necessary; 2) in the sense that although no particular order is necessary in itself, every order constitutes necessities. (Lorend, 1992, p.580)

Bergson considers the notion of ‘disorder’, like the notion of ‘nothing’, to be the cause of unresolvable problems of knowledge; disorder is:

the disappointment of a mind that finds before it an order different from what it wants, an order with which it is not concerned at the moment, and which, in this sense, does not exist for it ...it represents nothing at all ... reality is ordered exactly to the degree to which it satisfies our thought. (C.E., pp.222-223)

Hence, for Bergson there are two kinds of order and two modes of thinking them: the dynamic order is thought by intuition in time or duration, and the static order by intellect in space.

While Mullarkey notes Bergson’s ambiguity about the genesis of matter (Mullarkey, 2000, p.82), he suggests that William E. May provides the definitive analysis on the subject:

..., the *élan* precontains both consciousness and matter as interpenetrating virtualities, and it gives rise to both in the course of its actualisation, in the course of giving rise to what is other than itself. (May, 1970, p.634)

May’s comment that the *élan* gives ‘rise to what is other than itself’ refers to Bergson’s concept of unity as one-many. In the sense that the *élan* is one it is always itself and

therefore is always the same, and in the sense that the *élan* is many, a heterogeneous multiplicity, it is other than itself. This is replicated in our own psychical life in which we find a unity that is at the same time a continuity of temporal variation: “a moving continuity is given to us, in which everything changes and yet remains the same” (M.M, p.260). In *Creative Evolution* Bergson states:

there is no essential difference between passing from one state to another and persisting in the same state. If the state which remains the same is more varied than we think, on the other hand the passing from one state to another resembles, more than we imagine, a single state prolonged; the transition is continuous. (C.E, p.248)

In his account of continuous transformation Bergson therefore conflates identity and changes of state by proposing that there is identity in difference. The original *élan* has *same* and *other* as potential tendencies that are unified within it; however, the passing from one state to another also implies *movement* and *rest*, terms that describe consciousness and matter respectively as both possessing dual aspects that are static and dynamic. As opposing features of the complementary tendencies within the original *élan*, Bergson’s concepts of *same*, *other*, *motion* and *rest* fulfil the same function as Plotinus’ primary kinds, the unified potentialities within the indefinite dyad and as actualities in *Being*.⁹⁹

Let us return to the mechanism that is implicit in the generation of multiplicity. In *The Two Sources of Morality and Religion* God is the originating source of the energy of the *élan vital* supplying, as it is required, a “superabundance” of energy (T.S.M.R., p.232), analogous to the radiation of Plotinus’ *One*. The generation of multiplicity therefore begins with a source of power, and in *Creative Evolution* Bergson

⁹⁹ Chapter 3.2, p.67.

refers to initial movement is an “explosive force”, given once and for all, and that it is created “due to an unstable balance of tendencies – which life bears within itself” (C.E., p.98). He uses a number of metaphors to explain the initial movement or impulsion and subsequent division of the *élan vital*: an artillery shell that bursts into fragments (C.E., p.98); consciousness as a jet of steam under high pressure that condenses into little drops that fall (C.E., p.247) and rockets in a firework display whose extinguished fragments fall back as matter (C.E., p.261). In *Creative Evolution*, the *élan vital* is both the explosion and the explosive (C.E., p.115); however, he refers to it as:

... a limited force, which is always seeking to transcend itself and always remains inadequate to the work it would fain produce. (C.E., p.126)

For Bergson the ascending movement or explosion includes the undifferentiated tendencies of consciousness and matter, and while metaphors of steam and fireworks describe the initial and subsequent movement as ascending and descending, he suggests that after the initial explosion of energy, the movement of the *élan vital*, which is unlimited in its original impetus, is interrupted; it loses its power and becomes limited, in the way that the light from a firework fades as it burns up its fuel or when raising an arm, it falls back by itself as soon as the will to keep it up is diminished (C.E., p.247). In *Creative Evolution* the *élan vital*, which Bergson refers to as “God”, is “unceasing life, action, freedom” (C.E., p.248), and we must understand that according to his definition of freedom it means that the *élan vital* is originally conscious or awake and possesses a ‘will’ to create (C.E., p.270; M.E., p.155). On its interruption, which Bergson associates with a ‘deficiency of will’ or a relaxation of attention, it effectively becomes unconscious matter; however, he also suggests that when left to itself, a raised arm will fall back, but in “striving to raise it up again”, it retains “something of the will that animates it” (C.E., p.247); hence the *élan vital* is not completely exhausted.

Drawing on Deleuze (Deleuze, 1991, p.104), Ansell Pearson comments that the *élan vital* is:

a limited force or power in need of actualisation: it is given as a simple virtual (of tendencies) but never given as a virtual whole that is always being actualised. As an original impulsion it must be finite though capable of potentially infinite transformation. ... the finite and infinite are not being conceived numerically ...but rather in terms of limited and unlimited. (Ansell-Pearson, 2002, p.96)

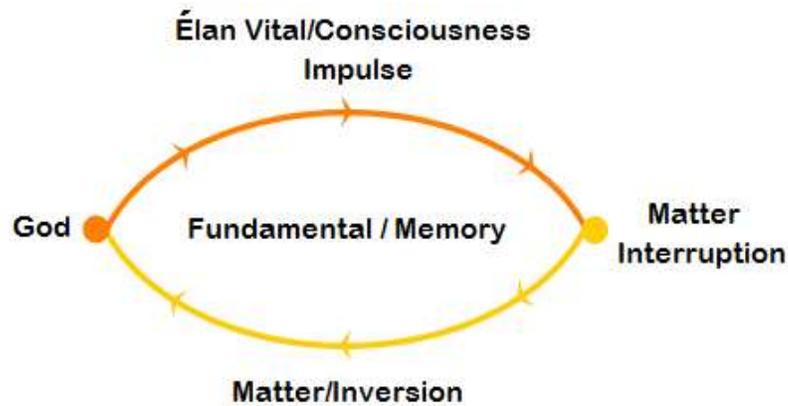
Like Plotinus, Bergson utilises the Pythagorean concepts of the unlimited and limiting, explained in Chapter 2 as ‘pre-existing’ powers to act; the active power to limit and the passive power to be limited. This describes perfectly what happens to sound; after the initial sound explosion it reaches a peak then loses energy, a process which in the science of acoustics is called ‘attack and decay’ (Gunther, 2012, p.52). According to Bergson’s theory the ‘attack’ or ascending movement would include the undifferentiated tendencies of consciousness and matter: consciousness has the passive power to be limited, and which is actually limited at the peak by matter because it congeals or becomes static, a limitation Bergson associates with a lack of consciousness or a deficiency of will that may be considered as ‘decay’. Bergson states that: “*Extension* ... appears only as a *tension* which is interrupted” (C.E., p.245): He also refers to the interruption as ‘inversion’, which refers to matter in its dynamic form as an independent tendency that descends, a movement in the opposite direction to consciousness.

What, then, is the principle that has only to let go its tension—may we say to detend—in order to extend, the interruption of the cause here being equivalent to a reversal of the effect? For want of a better word we have called it consciousness. But we do not mean the narrowed consciousness that functions in each of us. (C.E., p.237)

there are then two processes opposite in their direction, and we pass from the first to the second by way of inversion, or perhaps even by simple interruption, if it is true that inversion and interruption are two terms which in this case must be held to be synonymous. (C.E., p.201)

The ascending and descending movement described in *Creative Evolution* becomes a swinging of a pendulum in *The Two Sources of Morality and Religion* (T.S.M.R., p.292). In physics the movement of a pendulum is known as ‘simple harmonic motion’, the most elementary oscillatory system that is called ‘harmonic’ because it is linked to sound vibrations; therefore, it is appropriate for illustrating Bergson’s movement of consciousness, as was done for Plotinus in Chapter 3. Figure 17 illustrates that when considered as standing waves that generate harmonics between two nodes, God is the first node and the *élan vital* is the forward movement of energy that generates the second node, which for Bergson would be matter as interruption. The inversion illustrates the tendency of matter to form closed systems in its return to the original position, as in the return swing of a pendulum. These two initial movements of the *élan vital* occur temporally, hence a before and after, forming the basis of a supra-consciousness or impersonal memory that is the origin of life (C.E., p.261). As such it represents the first vibration or duration of the *élan vital* that can be considered the ‘fundamental’ or first harmonic.

The Creation of Memory (Figure 17)



Bergson's mechanism of impulsion and inversion effectively replicates Plotinus' movements of procession and reversion that creates *Intellect*, the 'Form of the First Forms', as illustrated in Figure 7.¹⁰⁰

At this early stage in the generative process it is important to note an apparent contradiction in Bergson's account of the extent of the *élan vital* consciousness. If the *élan vital* possesses a 'will' to create and is "unceasing life, action, freedom" (C.E., p.248), features that Bergson associates with consciousness, how is it possible for the tendencies it contains undifferentiated to be merely virtual? This is an issue that Bergson does not address; however, he appears to be adopting Plotinus' notion of the inchoate *Intellect* that in its initial procession from and reversion to the *One*, is "sight not yet seeing", which means that is not self-conscious or conscious of its act of thinking. The following section will explore how, in the generation of life, these movements become self-conscious and are related to the movement of the mind that is implicit in Bergson's concept of philosophical intuition.

¹⁰⁰ Chapter 3.2, p.73.

5.3 The Ontological and Epistemological Transformation of the *Élan Vital*

In *Creative Evolution*, the model Bergson proposes for his cosmology comes from biological knowledge and theories of his day. He notes that the process of biological evolution demonstrates a chronological succession among species in which complex forms of life evolve from more simple ones, and that in the domain of life we find complex forms developing when a single cell divides into two, and these in turn continue to divide into cells that associate to form different organs in the body (C.E., p.260). Basically, all life begins as one and remains united as it becomes many in a process of self-generation and transformation through division and association. It will however be argued that like Plotinus, harmonic motion is the mechanism Bergson adopts to account for the ontological and epistemological transformation of the *élan vital*.

Bergson proposes that the *élan vital* functions as it does in our own psychical life, that is, according to the movement of consciousness implicit in his concept of philosophical intuition. While he is not explicit in describing his cosmology as the generation of harmonics, it is noteworthy that when discussing the nature of parallelism of the mind and body in *Mind-Energy*, he implies that his philosophical method generates ideas in the form of harmonics:

These four ideas themselves imply a great number of others, which it would be interesting to analyse in their turn, because they would be found to be, in a kind of way, so many harmonics, the fundamental tone of which is the thesis of parallelism. ('Brain and Thought', in M.E., p.254)¹⁰¹

¹⁰¹ Similarly, when discussing the play of ideas in intellectual effort he suggests that 'these mental oscillations have their sensory harmonics' ('Intellectual Effort' in M.E., p.222).

It is only a sentence; however, it provides a ground from which we can hypothesise that the *élan vital* also generates harmonics, since Bergson claimed the cosmological process replicates his method of philosophical intuition that “bears above all on internal duration” (‘Introduction II’, in C.M., p.32):

The matter and life which fill the world are equally within us; the forces which work in all things we feel within ourselves; whatever may be the inner essence of what is and what is done, we are of that essence. (‘Philosophical Intuition’, in C.M., p.124)

Furthermore, in a speech to the Société Française de la Philosophie, given in 1908 he stated:

One of the objects of Creative Evolution is to show that All is ... of the same nature as the I, and that one grasps it by a more and more complete immersion in oneself. (*Mélanges*, p.774)

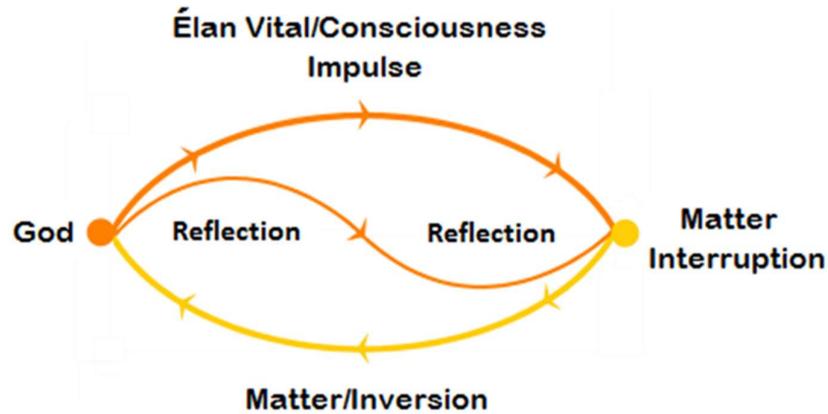
Similarly, in *Creative Evolution*: “intuition is mind itself, and, in a certain sense, life itself” (C.E., p. 268), which suggests that because we obtain knowledge of psychological duration using this method, it can also reveal that the generative activity of the *élan vital* is an act of self-organisation.

It was argued that Bergson regards the generation of multiplicity as harmonic motion, as in the forwards and backwards motion of a pendulum, and in his account of philosophical intuition he describes it as a reversal of thought that is essentially an act of self-consciousness in which intellect turns in on itself as an act of vision that is not directly aimed at action. It is a “direct vision of the mind by the mind” (C.M., p.42),¹⁰²

¹⁰² See also C.E., p.196; ‘The Perception of Change’, in C.M., p.138, where Bergson considers the act of intuition to be like that of the artist who is not focused on action but simply “perceives in order to perceive”; In ‘Soul and Body’ in M.E., p.43, Bergson refers to consciousness as “a faculty of observation”.

thus replicating Plotinus’ act of contemplation that begins the generative process with an act of vision subsequent to the procession and reversion of the inchoate *Intellect* as “sight not yet seeing”. Bergson refers to the movement to the interior as “reflection” (‘Introduction II’, in C.M., p.88), as illustrated in Figure 18.

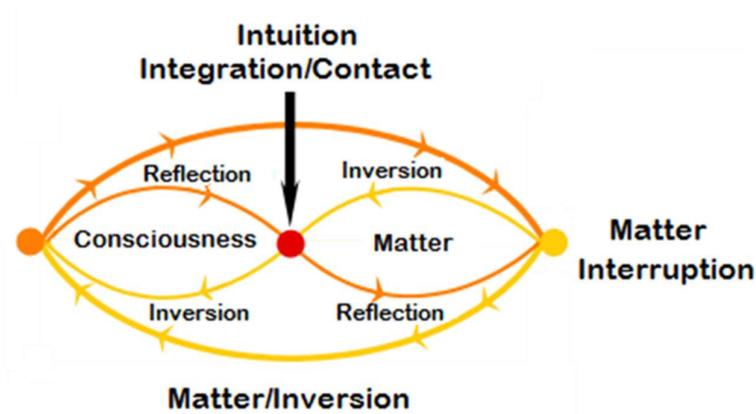
The Reflection of the *Élan Vital* (Figure 18)



Bergson refers to the movement of intuition as “the attention the mind gives to itself, over and above, while fixed upon matter, its object” (‘Introduction II’, in C.M., p.79) and it is “self-conscious, capable of reflecting upon its object and of enlarging it indefinitely” (C.E., p.176), and while this has epistemological implications which will soon be explained, for now let us focus on the movement itself. If we return to Bergson’s pendulum, the reflection is interrupted by matter and by following the direction of the arrows in Figure 19 below, it can be seen that the second inversion crosses the initial reflection, generating a node that enables the two *élans* to generate alternately, as he claims in his 1908 letter to Tonquédec.¹⁰³

¹⁰³ See: p.139.

The Alternate Generation of Consciousness and Matter (Figure 19)



Alternate generation is also a theme Bergson continues in *The Two Sources of Morality and Religion* where he proposes: “the tendencies, born of the process of splitting, ... can be developed only in succession” because there is a continual progress in the movement from one to the other (T.S.M.R., p.295). Therefore, it is the inversion of matter that is responsible for the actualisation of itself and of consciousness as individual durations or tendencies:

Contact with matter is what determines this dissociation. Matter divides actually what was but potentially manifold; and, in this sense, individuation is in part the work of matter, in part the result of life's own inclination. (C.E., p.258)

It is only in seeing consciousness run through matter, lose itself there and find itself again, divide and reconstitute itself, that we shall form an idea of the mutual opposition of the two terms, as also of their common origin. (C.E., p.178-179)

In reflection the material object is seen as durational. The object, and therefore knowledge of the object, becomes enlarged with an intense focus the attention. The colours used in Figure 19 also help to demonstrate how the *élan vital* as supra-consciousness becomes aware of difference or the fan-wise growth within itself as a

temporal process. Following the colour of the direction of the tendencies, or simply considering the nodes themselves explains Bergson's example provided in *The Two Sources of Morality and Religion*:

Let us imagine that orange is the only colour that has as yet made its appearance in the world. Would it be already a composite of yellow and red? Obviously not. But it will have been composed of yellow and red when these two colours are born in their turn; from that hour the original orange colour can be looked at from the twofold point of view of red and yellow; and if we supposed, by a trick of fancy, that yellow and red appeared through an intensification of orange, we should have a very simple example of what we call fan-wise growth. (T.S.M.R., p.294)

Reminiscent of Plotinus, the crossing or coincidence of consciousness and matter is a phenomenon that Bergson refers to as “fan-wise growth”, which demonstrates a common source for all things. In his psychology of intuition, he emphasises the importance of placing ourselves at the mid-point where consciousness and matter coincide. At this point the *élan vital* will experience itself as a continuous, qualitative heterogeneous multiplicity because it is aware of all three colours simultaneously either differentiated or integrated within its consciousness, which explains why he refers to his philosophical method of intuition as the operation of “differentiations and qualitative integrations” (‘Introduction to Metaphysics’, in C.M., p.191). He provides an example of how it functions within his act of vision in *Duration and Simultaneity*:

I call two flows “contemporaneous” when they are equally *one* or *two* for my consciousness, the latter perceiving them together as a single flowing if it sees fit to engage in an undivided act of attention, and, on the other hand, separating them throughout if it prefers to divide its attention between them, even doing both at one and the same time if it decides to divide its attention and yet not cut it in two. (D.S., p.35)

For Bergson, reflection is therefore not pure thinking or idea; it is an immediate experience that determines differences in kind. He states its consciousness would:

...follow purely and simply the thread of experience ... Such a mind would see facts succeed facts, states succeed states, things succeed things. What it would notice at each moment would be things existing, states appearing, events happening. It would live in the actual, and even if it were capable of judging, it would never affirm anything except the existence of the present.

Endow this mind with memory, and especially with the desire to dwell on the past; give it a faculty of dissociating and of distinguishing; it will no longer only note the present state of the passing reality; it will represent the passing as a change, and therefore a contrast between what has been and what is. (C.E., p.294)

Gouhier proposes that we should not consider Bergson to be influenced here by Maine de Biran who referred to his method of introspection as reflection; Biran's reflection and Bergson's intuition are very different psychological experiences. While Biran's reflection depends on the experience of effort that limits the self to knowledge of its phenomenal states, the inner experience needs an act of faith to transcend it; however, Bergson's intuition is the perception of duration as immediate experience, prolonging psychological experience into the metaphysical (Gouhier, 1948). Mullarkey explains Bergson's reflection on 'the other' and the contact or coincidence arising from that reflection as a "passing through rather than aiming" that provides "partial knowledge" of the whole, not relative. Furthermore, "the experience of the other is part of what it is to understand and reclaim one's own alterity" (Mullarkey, 2000, p.95 and p.116). The *élan vital* experiences itself as durational; it is conscious of its present experience which includes the presence of its past in its entirety, a 'perpetual present', a past-present or present-past that can be prolonged indefinitely. Bergson states that "the piling up of the past upon the past goes on without relaxation. In reality, the past is

preserved by itself, automatically” (C.E., p.5); hence, as consciousness reflects on matter it retains its conscious states in an impersonal memory.

Like Plotinus, who generates *Being* before knowing, Bergson generates matter before the reflection on it; for both philosophers there is an asymmetrical relationship between being and knowing, and hence thinking and knowing.

Let us now consider how matter and consciousness develop their own offspring. It has been demonstrated how Bergson’s ‘law of dichotomy’ splits the *élan vital*, as one tendency or impulsion into two; and Bergson suggests that these tendencies, now different in nature, develop in divergent directions, ‘fan-wise’ in the shape of a sheaf, with each tendency receiving a certain portion of the impetus (C.E., p.116; T.S.M.R., p.293-294). If we return to Bergson’s pendulum, he states:

All prolonged action, it would seem, brings about a reaction in the opposite direction. Then it starts anew, and the pendulum swings on indefinitely. ...the pendulum is endowed with memory, and is not the same when it swings back as on the outward swing, since it is then richer by all the intermediate experience. (T.S.M.R., p.292)

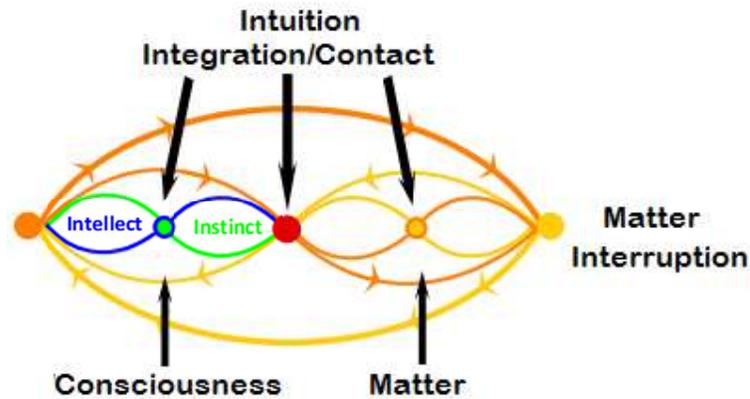
Following the second inversion, the *élan vital* swings back again and the process continues “indefinitely”; hence if we consider Bergson’s metaphors in *Creative Evolution*, the firework continually sends up rockets which illuminate the falling fragments (matter/inversion), and the will to raise the arm subsists, despite its fall. The process of division is therefore essentially open or indefinite and he describes it in terms of a fractalisation of a shell:

The evolution movement ... proceeds rather like a shell, which suddenly bursts into fragments, which fragments, being themselves shells, burst in their turn into fragments destined to burst again, and so on for a time incommensurably long. (C.E., p.98)

It is an accurate metaphor for describing how, in the generation of harmonics each harmonic becomes a fundamental generating its own harmonics as an infinite series. It is reasonable to deduce that this is what Bergson intended, especially as in *Matter and Memory* he joins the physicists of his day to consider matter as having an internal structure that consists in a ‘pervading concrete extensity, modifications, perturbations, changes of tension or energy and nothing else’ (M.M., p.266). As such Bergson regards it as *extensive* rather than extended; we must not think of the vibrations of matter as vibrations in a medium, such as space; matter is these vibrations. The French mathematician and music theorist Marin Mersenne had already described the equations for the frequency of oscillation of a stretched string or monochord in his work *Traité de l’harmonie universelle* (1637) and in 1807 Fourier discovered that any temporal wave that has a consistent repeating pattern or continuous function can be broken down into an infinite sum of simpler sine and cosine waves with differing amplitudes (Fourier, 1808). Garber explains how his work was “crucial ...as a means of expressing all manner of wave phenomena and arbitrary functions that occur in physics and engineering” (Garber, 1999, p.112). Helmholtz provided an illustration of the generation of harmonics similar to Figure 3 (p.47) in his work *On the Sensations of Tone* (Von Helmholtz, 1863, p.46). It was therefore acknowledged mathematically that according to the law of harmonics the fundamental initially divides into two frequencies, and it makes sense of Bergson’s “law of dichotomy”, the law that presumably applies to consciousness and matter when each is a fundamental. Matter generates harmonics within itself that represent qualitative differences external to the perceiving subject, and consciousness generates harmonics that represent differences of function and degree of consciousness in living beings. Figure 20 illustrates that according to this law consciousness divides into intellect and instinct, which are

complementary tendencies or faculties whose ontological and epistemological functions differ.

Consciousness, Matter and the Law of Dichotomy (Figure 20)



Intellect thinks but does not know the durational nature of matter; hence it is characterised by its natural inability to comprehend life (C.E., p.165). It divides the matter it perceives into extended objects in homogenous space, purely as an outward projection of the practical need to fix centres of action so it can interact and satisfy interests or needs, and it complements matter’s tendency to become spatialized because “intellect bears within itself, in the form of natural logic, a “latent geometrism”” (C.E., p.195), hence Bergson states:

And as matter is determined by intelligence, as there is between them an evident agreement, we cannot make the genesis of the one without making the genesis of the other. An identical process must have cut out matter and the intellect, at the same time, from a stuff that contained both. (C.E., p.199)

The common form of matter and intellect implies for Bergson that “knowledge ceases to be a product of the intellect and becomes, in a certain sense, part and parcel of reality” (C.E., p.153). In the above quotation the “stuff that contained both” is the *élan vital* as consciousness in general before it split into two separate tendencies. While intellect has

knowledge of its object in terms of its spatiality or *extension*, instinct, on the other hand, has categorical or implicit knowledge of its material object in terms of its *intension* or internal vibration as a property (C.E., p.149-150). Instinct therefore is a vital process; it distinguishes properties through sympathy with the whole; it feels but does not think because it acts its knowledge; therefore we cannot conflate the notion of thinking with knowledge.

Bergson proposes “The two tendencies, at first implied in each other, had to separate in order to grow” (C.E., p.150); each fringe the other:

There is no intelligence in which some traces of instinct are not to be discovered, more especially no instinct that is not surrounded with a fringe of intelligence. (C.E., p.136)

So, while they are tendencies that differ in kind, and diverge as they develop, they are complementary and not absolutely separate, and in a statement, that is reminiscent of Plotinus, Bergson suggests that matter breaks up consciousness into individual tendencies or faculties:

The matter that it bears along with it, and in the interstices of which it inserts itself, alone can divide it into distinct individualities. ... This subdivision was vaguely indicated in it, but could not have been made clear without matter. Thus souls are continually being created, which, nevertheless, in a certain sense pre-existed. (C.E., p.269-70)

While spatialised matter is a product of intellect, the dynamic aspect of matter, its inversion, breaks up or interrupts the impulse of consciousness, forming a node at their intersection. Figure 20 shows how the inversion of matter is necessary for the generation of individual souls, and it is a process that continues indefinitely as the

pendulum unceasingly continues its forward motion as reflection, and its return as inversion.

In reality, life is a movement, materiality is the inverse movement, and each of these two movements is simple, the matter which forms a world being an undivided flux, and undivided also the life that runs through it, cutting out in it living beings all along its track. Of these two currents the second runs counter to the first, but the first obtains, all the same, something from the second. There results between them a *modus vivendi*, which is organization. (C.E., p.250-251)

For Bergson the act of thinking intuitively is an effort for the human intellect; however, while the reversal of its natural direction of thought is self-conscious, Bergson does not specifically address the issue of whether the act of thinking is included in what the *élan vital* thinks when it is thinking creation in his cosmology. He states that in human intuition, the act is one of tension, and therefore, attentive, but it cannot be sustained for long; “It is a lamp almost extinguished, which only glimmers now and then, for a few moments at most” (C.E., p.267). From intuition we return to intellect that transforms the data into concepts. Similarly, in his cosmology, the *élan vital* renews its efforts to continue the creative process. In *Creative Evolution* Bergson suggests that while self-consciousness commences with intuition, which is the movement on which his whole cosmology is based, it loses something of itself in the process:

It is as if a vague and formless being, whom we may call, as we will, man or superman, had sought to realize himself, and had succeeded only by abandoning a part of himself on the way. (C.E., p.226)

But a glance at the evolution of living beings shows us that intuition could not go very far. On the side of intuition, consciousness found itself so restricted by its envelope that intuition had to shrink into instinct, that is, to embrace only the very small portion of life that interested it; and this it embraces only in the dark, touching it while hardly seeing it. On this side,

the horizon was soon shut out. On the contrary, consciousness, in shaping itself into intelligence, that is to say in concentrating itself at first on matter, seems to externalize itself in relation to itself; but, just because it adapts itself thereby to objects from without, it succeeds in moving among them and in evading the barriers they oppose to it, thus opening to itself an unlimited field. Once freed, moreover, it can turn inwards on itself, and awaken the potentialities of intuition which still slumber within it. (C.E., p.182)

Bergson proceeds to suggest that the *élan vital* only regains its self-consciousness in man who “comes to occupy a privileged place” because he possesses the ability to continue the vital movement indefinitely (C.E., pp.181-182); however, this implies a contradiction. If the movement of intuition generates the multitude of tendencies in life prior to man, it suggests that the *élan vital* is ultimately conscious of itself and its creations at the highest level, in fact, he appears to consider the possibility in *Matter and Memory* when he speculates on the possibility that a supra-conscious memory could “watch the development of humanity while contracting it, ...into the great phases of its evolution. (M.M., p.275). Since ‘watching’ is an act of vision or reflection, self-consciousness of thinking creativity concurs with the model presented here, despite the apparent erosion of consciousness in the generative process. Furthermore, Bergson states that the *élan vital* retains “something of the will that animates it” on its interruption and inversion (C.E., p.247), a stage that is vital for continuity in the process. It is therefore proposed that within Bergson’s notion of a supra-consciousness the act of thinking is included in what the *élan vital* thinks when it is thinking creation.

Conclusion

It was explained that Bergson was ambiguous about the nature of God and the *élan vital* in *Creative Evolution*, but later clarified his position by proposing that God remains distinct from the *élan vital* but is active within it. Bergson strongly rejected the notion of pantheism and it was therefore proposed that he followed the Pythagoreans and Plotinus who could be more accurately placed in the category of *panentheism*.

Bergson follows Plotinus in rejecting the notion of parts being generated as an assemblage of pre-existing parts, and the generation of multiplicity for both philosophers is one of self-generation in which the self transforms itself. Bergson states: “the essence of life is the movement by which life is transmitted” (C.E., p.128), and it is a description that applies equally well to Plotinus. Similarly, Bergson captures the substantial nature of the movement in ‘The Perception of Change’:

There are changes, but there are underneath the change no things which change: change has no need of support. There are movements, but there is no inert or variable object which moves: movement does not imply a mobile.
(‘The Perception of Change’ in C.M., p.147)

The movement of consciousness or mind is the same for both philosophers and is analogous to the model of the generation of harmonics: (1) there is an initial outward movement of energy from a node (Plotinus/The One; Bergson/ God) in the form of love, which for both philosophers is an immensity of potentiality as an undifferentiated unity of tendencies; (2) the forward movement of energy is interrupted, generating a second node (Plotinus - rest/*Being*; Bergson - interruption/matter), and then the movement reverts (Plotinus) or inverts (Bergson). Together, the first two movements

generate the fundamental (Plotinus - *Intellect*; Bergson - supra-conscious memory. (3) Consciousness reflects back onto the second node, and on its reversion/inversion a third node is generated where the movements cross, dividing the movement into two new fundamentals (Plotinus - *Soul and World Soul*; Bergson - intellect and matter). The pendulum movement continues, producing new nodes and their associated vibrations within each fundamental.

Plotinus's *Intellect* becomes Bergson's supra-conscious memory, both possessing a vibrational nature that is full of life, and the contents of which do not change once generated, and Plotinus's *Soul* becomes Bergson's intellect whose function is to spatialize matter. Despite the similarities, Bergson's mechanism differs from that of Plotinus; whereas Plotinus hypostasises *Intellect* as eternity and *Soul* as its temporal expression, Bergson synthesises Plotinus' *Hypostases* so that his ontological and epistemological structure is a process that is wholly temporal.

It is therefore concluded that the science of harmonics potentially solves the 'mystery' of Bergson's cosmology; however, several issues require an explanation and will be addressed in the following chapter. The first is how consciousness and matter are integrated to include spontaneity and freedom within his account of partial finalism; the second is how Bergson's account of number and mathematics fits into his cosmology; and finally, since his "fan-wise" generation of multiplicity suggests that, like Plotinus, there is a connection with the Pythagorean *tetractys*, it needs to be determined whether Bergson is sympathetic to the Pythagorean philosophy of transformation.

Chapter 6

Bergson - Harmonics of Evolution

*

Introduction

This Chapter examines Bergson's arguments for partial finalism, his theory of number, the influence of mathematics, and his sympathy with Pythagorean philosophy. It will be contended that in *Creative Evolution* Bergson adopted the 3-stage generative structure of Pythagorean cosmology, and applied the key themes of disassociation, association, attunement, sympathy, conflict and war to the evolutionary process. His arguments for partial finalism reveal that the model of harmonics is consistent with the *musical theme* he proposed, and accounts for spontaneity, novelty and similarities in structure in the evolutionary process due to the proportional existence of tendencies within matter and organic life. It will be proposed that Bergson's notions of quantitative and qualitative multiplicity replicate Plotinus' concepts of monadic number and substantial number as *logos* enabling him to reconcile matter and consciousness. The subject of number then leads to an examination of Bergson's mathematical influences. It will be argued that while it is commonly held that Riemann influenced Bergson's account of discrete and continuous multiplicities, and that modern calculus influenced his method of intuition, a Pythagorean influence, not previously considered, makes more sense of his arguments. The claim of a Pythagorean influence on Bergson will then be supported by an examination of his 'Lectures on the Pythagoreans', revealing his sympathy with Pythagorean number theory and their philosophy of

transformation. Finally, the view that Bergson used melody as a metaphor for duration will be contested.

6.1 Bergson's Partial Finalism

Bergson argues against radical mechanism and finalism because both start from the assumption that all is given. Mechanism presupposes the elements out of which reality is built making it mathematically predictable, and finalism presupposes a plan as an end to be achieved. For Bergson, they both ignore the temporality of the evolutionary process and cannot account for spontaneity and novelty. He does however make a concession to finalism in accepting it to a certain extent (C.E., p.40) because the end to be achieved is the creation of novelty itself; an evolution that is established in its progress. It will be contended that Bergson's 'creative evolution' is grounded in the 3-stage generative structure of Pythagorean cosmology.

Bergson's partial finalism rests on the notion of consciousness and matter as separate tendencies in the *élan vital* that has a 'supra-conscious' nature (C.E., p.261) because it possesses all degrees of consciousness, including intellect, instinct, intuition, as well as the latent consciousness of unorganised matter and the sleeping consciousness of immobile vegetable matter. For Bergson consciousness is memory and anticipation of the future (M.E., p.8):

... if ...consciousness retains the past and anticipates the future, it is probably because it is called on to make a choice. In order to choose, we must know what we can do and remember the consequences, advantageous or injurious, of what we have already done; we must foresee and we must remember. (M.E., p14)

The consciousness of unorganised matter is latent because while it possesses a memory that is limited to repeating the past (M.M., p.297), it does not anticipate the future. Organised matter, however, evolves and has the potential to become conscious, because “movement and consciousness sleep in it as recollections which may waken” (C.E., p.119). Bergson notes Darwin’s work on the movements of climbing plants and refers to their consciousness in terms of “the accidental awakening of an activity normally asleep” (C.E., pp.108-109). Organised, or organic matter, such as that found in single celled organisms, plants, animals and human life, possess degrees of consciousness that vary with the freedom or power of choice implicit in the ability to move, and the power of choice is linked to the organism’s ability to anticipate the future together with its degree of memory.

... if ...consciousness retains the past and anticipates the future, it is probably because it is called on to make a choice. In order to choose, we must know what we can do and remember the consequences, advantageous or injurious, of what we have already done; we must foresee and we must remember. (M.E., p.14)

He argues that actions or movements originate with a “decision that implies choice”, and that these movements subsequently become automatic and unconscious. The intensity of consciousness is therefore linked to the degree of choice or “to the amount of creation” required by the movement. (M.E., p.15)

But this consciousness, which is a *need of creation*, is made manifest to itself only where creation is possible. It lies dormant when life is condemned to automatism; it awakens as soon as the possibility of a choice is restored. (C.E., p.261)

The “need of creation” is associated with the need of Bergson’s God to reproduce and evolve in a form that requires a freely chosen process of change, creation and growth

(T.S.M.R., p. 255) as explained in Chapter 5.¹⁰⁴ One may therefore question the nature of his finalism since the ‘need’ is a goal that is persistently achieved; however, from Bergson’s perspective his finalism is partial because the goal is creation itself which is indeterminate and unlikely to be achieved because the freedom of man is restricted by matter. The subject of freedom is addressed in more detail in Chapter 9.¹⁰⁵

While supra-consciousness is essentially mind-like because it lacks consciousness in some of its manifestations, as it wakens, sensibility and freedom increase (C.E., p.119), thus partially accounting for spontaneity and the generation of unforeseen novelty. The degree of consciousness is determined by an organism’s vibration and is linked to its development in the evolutionary process:

In reality there is no one rhythm of duration; it is possible to imagine many different rhythms which, slower or faster, measure the degree of tension or relaxation of different kinds of consciousness and thereby fix their respective places in the scale of being. (M.M., p.275)

Bergson claims: “like radical finalism, although in a vaguer form, our philosophy represents the organised world as a harmonious whole” (C.E., p.50); however, it is not perfect because each species and individual only receives a portion of the impetus and uses it for its own interests or needs. Consciousness has the need to create in both time and space and “needs” a body which it carves out of matter (M.M., p.262); hence ‘need’ is the reason why the two dissociated tendencies, consciousness and matter, associate to form organic life. The carving out of a body is achieved by perception, a subject that will be explored in Chapter 9; however, it is important to understand here that the vibrational nature of the separate tendencies makes it possible. In perception

¹⁰⁴ Chapter 5.1, p.142.

¹⁰⁵ Chapter 9.2, p.272.

consciousness condenses the vibrations of matter within its own vibration and selects a body based on attunement or correspondence. In *Creative Evolution* Bergson proposes: “intellect is in tune with matter” (C.E., p.195), and therefore there is a “correspondence” between them (C.E., p.140) so they can associate or unite even though they are opposed, thus replicating Plotinus’ ‘law of correspondence’ between *soul* and its body whose parts are unequal. Chapter 4 noted the theory of attunement or correspondence is linked to the Pythagorean belief in the analogy between microcosm and macrocosm in which universal kinship or sympathy occurs between the universe and its parts.¹⁰⁶ Bergson also explicitly refers to the theme of sympathy between consciousness and matter in his concepts of intuition (C.M., p.77; p.161-163) and instinct (C.E., p.176). He suggests that instinct is intuition that has shrunk its range of interest to perpetuating the life and evolution of individual species, (C.E., p.182); it does not speculate, but like intuition, has categorical or implicit knowledge of its object in terms of its *intension* or internal vibration:

Intuition seeks to recapture, to get back the movement and rhythm ... to live again creative evolution by being one with it in sympathy. (‘Introduction II’, in C.M., p.77)

Furthermore, Bergson replicates Plotinus and the Pythagoreans in proposing the interaction of matter and consciousness can be harmonious or discordant:

A tendency achieves all that it aims at only if it is not thwarted by another tendency, i.e. there is always opposition ...the interaction of tendencies is always implied (C.E., p.13)

¹⁰⁶ *Ennead* III.3.5,4; Chapter 4.2, pp.114-116.

We cannot regard life as the creation of a “musical concert” by something like a human genius, “wherein the seeming discords are really meant to bring out a fundamental harmony”; a large part of the evolutionary process arises from “retrogressions, arrests, accidents of every kind” (C.E., p.127-8). Bergson refers to the discordance as an “irremediable difference of rhythm” (C.E., p.128) and a conflict of “opposing forces” (T.S.M.R., p.57). He develops the theme in *The Two Sources of Morality and Religion* when discussing the nature of war in human societies, suggesting that ‘war is natural’ (T.S.M.R., p.284) and a necessary part of the evolutionary process; nature did not ordain it just for the sake of it.

War is the ‘origin of empires’, ‘born of conquest’ has the potential to bring societies together, to integrate the weaker ones onto the stronger, or even destroy whole societies (T.S.M.R., p.276).

As noted in Chapter 4, the conflict between harmonics is referred to in modern physics as constructive or destructive interference, where new nodes are generated from the interaction of standing waves that change the vibration of one or both for better or worse.¹⁰⁷ It is a principle Bergson explicitly employs in *Laughter* and which he refers to as “reciprocal interference”. In a footnote he states:

The word "interference" has here the meaning given to it in Optics, where it indicates the partial superposition and neutralisation, by each other, of two series of light-waves. (*Laughter*, p.47)

Interference must not be confused with the ‘interruption’ of the *élan vital* that generates nodes as an orderly sequence of harmonics.¹⁰⁸ The concept of constructive and

¹⁰⁷ Chapter 4.2, pp.110-111.

¹⁰⁸ Chapter 5.2, pp.153-155.

destructive interference explains why there are retrogressions, arrests, accidents and sudden variations in the evolution of life; why some species become extinct while others take on novel forms. When harmonics are produced, the greatest harmony is found near the start when the vibrations are less frequent; discords naturally occur at more frequent vibrations when the fundamental or its subsequent harmonics form unions; a fact concurring with Bergson's assertion in *Creative Evolution*:

Harmony, therefore, does not exist in fact; it exists rather in principle. ... Especially (and this is the point on which finalism has been most seriously mistaken) harmony is rather behind us than before. It is due to an identity of impulsion and not to a common aspiration. (C.E., p.51)

When Bergson states that harmony is behind rather than before us it is consistent with his argument for fan-wise growth which infers a common source, that if orange is the only colour to have made an appearance in the world, it will have been composed of red and yellow when they are born in their turn.¹⁰⁹ It is also consistent with Plotinus who also suggests that nature becomes disharmonious due to interference, and not only does nature make mistakes, but it starts from a much lower level in terms of its *logos*; however, Plotinus is more of a finalist than Bergson. Whereas Bergson's universe appears to become increasingly disharmonious, Plotinus proposes that the *World Soul* maintains the universe as a harmonious whole according the *logoi* or providence it receives from *Intellect* and corrects mistakes or disharmony arising in nature.

Taking the whole process of generation into account Bergson appears to adopt the 3-stage generative structure of Pythagorean cosmology, as described by Cornford:

¹⁰⁹ See: Chapter 5.3, p.161.

(1) There is an undifferentiated unity. (2) From this unity two opposite powers are separated out to form the world order. (3) The two opposites unite again to generate life. (Cornford, 1923, p.3)

At stage 3, unity may arise through the conflict of opposites:

In the third stage of the cosmological formula the combination of the sundered opposites to generate life is represented in mythical terms either as a marriage or as a warfare. ...The marriage symbol is appropriate in the order of space. ...The alternative symbol of warfare [is] conceived rather as the seasonal powers in the order of time, in which each prevails successively and yields to its antagonist. The principle of justice is preserved by this balanced alternation of advance and retreat. (Cornford, 1923, p.4)

Furthermore, Bergson's conception of consciousness as "powers" accords with Pythagorean philosophy as well as Plotinus' account of *Soul*, as was explained in Chapters 2 and 4 respectively. Bergson rejects the notion of a Lockean atomistic powers ontology that considers the intrinsic nature of powers as having external relations (Locke, 1689, II.23.37, p.286), in favour of tendencies, creative powers that continually differentiate qualitatively internally. Bergson's theory of the *élan vital* operating as an internal force in the evolutionary process was offered as an alternative to the neo-Lamarckian and neo-Darwinian theories of evolution. While he accepted the neo-Lamarckian theory of an inner psychological principle, he rejected the notion that a living being's individual effort to adapt to the circumstances of its existence accounts for variability (C.E. p.76-84). The neo-Darwinists, including the English naturalist, Alfred Russel Wallace and the German evolutionary biologist, August Weismann, accepted Darwin's theory of natural selection but rejected his theory of pangenesis, which is similar to Lamarck's notion of the inheritance of acquired characteristics. Bergson rejected the neo-Darwinian theory of natural selection or adaptation because it opposes the notion of an internal divine or conscious force working in the evolutionary

process in favour of random external factors. Bergson argues since the structural changes would be so small, their utility cannot be proven, thus making natural selection untenable. Furthermore, adaptation results in a conceptual confusion because it implies indetermination in the creation of new forms and an active response to external circumstances, implying a causality that is predetermined (C.E., p.86). For Bergson, the *élan vital* is indivisibly dynamic and cannot be differentiated into cause and effect. He suggests that accidental changes arising from external factors cannot account for similarities in structure between independent species because:

something of the whole therefore must abide in the parts, and this common element will be evident in some way, perhaps by the presence of identical organs in very different organisms. (C.E., p.54)

Bergson's theory that the *élan vital* differentiates internally and is therefore able to account for the creation of new forms and similarities in structure between independent species is consistent with the harmonics model in which something of the whole abides in the parts. In Chapter 2 it was explained that concordant intervals of a musical scale are interlocked according to proportions of an unequal ratio, the significance of which is they apply to any key; hence the same melody can be played in different keys. So, while the structure is invariable melodies can be infinitely variable;¹¹⁰ hence Hermann's comment:

...to be an initiate of the Pythagorean order [is] to realise that *correspondence* and *proportion* rule the world. (Hermann, 2004, p. 99)

Proportion is also important for Bergson because he suggests that specific groups of living things can be distinguished by the tendencies they emphasise:

¹¹⁰ Chapter 2.3, p.47.

There is no manifestation of life which does not contain, in a rudimentary state – either latent or potential, - the essential characters of most other manifestations. The difference is in the proportions. But this very difference of proportion will suffice to define the group ... *the group must not be defined by the possession of certain characters, but by its tendency to emphasize them.* (C.E., p.106)

This is logical from the perspective of how harmonics are emphasised or de-emphasised in different musical instruments causing variations of timbre or tone colour. A piano and a flute can play the same note but will not sound the same (Rossing, 1982, p.114). It will be argued that an examination of the role of number in Bergson's *Creative Evolution* and his view of mathematics suggest that while he uses the term "proportions", musical proportions rather than mathematical proportions make more sense of his argument. The faculties of each species together with its matter evolve by starting out as a fundamental producing its own harmonics, hence the varying proportions, both among individual species, and between different species. This model also supports Bergson's claim that increasing complexity does not arise from elements added together, nor is it an ascending scale like steps up a ladder; he suggests rather that evolution as duration is based on a *musical theme*:

We seem ... to be before a *musical theme*, which had first been transposed, the theme as a whole, into a certain number of tones, and on which, still the whole theme, different variations had been played, some very simple, others very skilful. As to the original theme, it is everywhere and nowhere. It is in vain that we try to express it in terms of any idea: it must have been, originally, *felt* rather than *thought*. (C.E., pp.171-172)

Barnard makes an important point, that sound is purely temporal; it does not have a spatial location, being at once "everywhere and nowhere" (Barnard, 2011, p.90), and

Bergson's allusion to the "original theme" being "felt rather than thought" refers to his account of how instinct acquires its knowledge from the internal vibrations of matter.

Barnard suggests:

from the time of Creative Evolution...intuition began to be seen...as a type of higher octave overtone or alternative to both instinct and intellect. (Barnard, 2011, p.128)

This makes sense because the *élan vital* generates and possesses knowledge according to the harmonic motion implicit in the act of intuition as explained in Chapter 5.

Bergson's arguments for partial finalism conform to and therefore support the musical harmonics model theory, and while Barnard has alluded to it negatively, the subject has been otherwise neglected. What emerges from Bergson's argument for partial finalism is an unplanned, but logical process that appears to conform to laws of music and physics; hence it is necessary to determine whether the proportional nature of Bergson's account of the generation of multiplicity conforms to his theory of number.

6.2 The Role of Number in Bergson's *Creative Evolution*

The examination of the role of number in Bergson's *Creative Evolution* will explain how he applies Plotinus' concept of *logos*.

In *Time and Free Will* Bergson replicates Plotinus' distinction between substantial number and monadic number with his theory of qualitative and quantitative multiplicities. He considers duration as a heterogeneous, intensive, and therefore qualitative continuous multiplicity that cannot be stopped and measured, while quantitative multiplicity is conceived as inert and measurable. In *Creative Evolution*

Bergson explains that it is the function of intellect to produce a quantitative multiplicity, measurable in discrete units by employing the notion of space (C.E., pp.210-11), and likewise, for Plotinus it is the function of the *Soul* to express monadic or quantitative number spatially; the similarity is noted by Hancock:

As Plotinus' comments regarding quantity and the other categories are transparent in his writings, it is quite probable that Bergson took Plotinus into account in fashioning his own view about quantity, including his views on the quantitative limits of mechanistic science. (Hancock, 2001, p.150)

For Bergson, scientific methods employ intelligence in the act of spatialising time and perceiving quality through quantity using ready-made concepts and language. He suggests we erroneously also do this with emotional states or internal sensations that can be described as intensive because we confuse them with their external causes, e.g. we confuse the sensation of brightness, which is a quality, with light that is external and quantifiable. Similarly, what we perceive to be bigger or smaller sounds are differences in volume, which is a quality; hence we interpret the difference in intensive magnitude, kind or quality that cannot be measured as a difference in extensive magnitude, quantity or degree that can be measured. It is an observation that has ancient origins in the science of harmonics. Andrew Barker refers to Aristoxenus (*El. harm.* 10.30–11.3) who makes exactly the same point:

most people mistakenly identify intensification of pitch (i.e. the process of raising it, *epitasis*) with height of pitch (*oxytēs*), and relaxation of pitch (*anesis*) with depth of pitch (*barytēs*). (Barker, 2007, p.146).

Barker also echoes Bergson in his discussion on the problem of language and measurement in the science of harmonics:

A melody, a scale or an attunement is a complex of pitched sounds, or notes, whose pitches stand to one another in particular relations which must be conceptualised in order to express not only their differences, but the characteristics of the patterns they form ... we speak of notes as 'higher' or 'lower', as if they were placed as points on a vertical continuum of 'up' and 'down', and we talk of the relations between them as larger and smaller 'intervals', as if they were spatial gaps between these points of pitch, and could be measured and compared like distances along a line. ... It is not a direct, objective representation of the facts, but a way of thinking and talking which arises from the contingencies of our own culture and its history. (Barker, 2007, pp.20-21)

For Bergson, the quantification of psychic states always involves a synthesis of the one and the many (T.F.W., p.75) because the application of numbers, each of which requires spatial differentiation that may be actual or metaphorical, involves the notion of unity and multiplicity. For example, we have an immediate subjective intuition of the number 5 as a unity in itself, but it also consists in objectifying a multiplicity of 5 homogenous units of 1 that can in turn be infinitely divided. The notion of infinite division underlies the idea of number itself, and the units making up number must ignore qualitative difference, that is, they must be identical, considered static and discontinuous, placed side by side in space. Division as an act of separation means jumping from one number to another while ignoring the interval in between.

Bergson proposes that while *representative* sensations such as colours, shapes, sounds, smells, tastes, textures, etc. differ, they are not separate, fixed and measurable but merge into each other like the colours of a rainbow: "...there is simply a passing from one to the other and not a difference in the arithmetical sense of the word" (T.F.W., p.68). This corresponds to his statement about number being infinitely divisible, but not discretely divisible. He proposes that conscious states are organically synthesised into a dynamic flow just as a melody captures our temporal experience as a

continuous qualitative multiplicity (T.F.W., p.100). Bergson however claims that the act of counting is not purely spatial, it is durational, hence number is perceived as quality, not quantity. He provides an example of unconsciously hearing four strokes of a clock, that on conscious reflection, are perceived as qualitatively different (T.F.W., pp.127-128), and furthermore, that number arises from qualitative difference. Čapek notes this act is durational and has a 'dialectical' character due to the two sides of the process (Čapek, 1971, pp.178-179). Bergson states:

the process by which we count units and make them into a discrete multiplicity has two sides; on the one hand we assume that they are identical, which is conceivable only on condition that these units are arranged alongside each other in a homogenous medium; but on the other hand the third unit, for example, when added to the other two, alters the nature and rhythm of the whole; without this interpenetration and this, so to speak, qualitative progress, no addition would be possible. (T.F.W., p.123)

In claiming that quantitative multiplicity depends on qualitative multiplicity Bergson replicates Plotinus' claim that monadic number depends on the existence of substantial number. While duration contains number 'potentially' (T.F.W., p.121), number is generated when it is actualized in space, thus Bergson's assertion:

the mathematical order arises automatically when within the whole a partial interruption or inversion is produced ... this power of creation once given ... has only to be diverted from itself to relax its tension, only to relax its tension to extend, only to extend for the mathematical order of the elements so distinguished and the inflexible determinism connecting them to manifest the interruption of the creative act: in fact, inflexible determinism and mathematical order are one with this very interruption. (C.E., p.217-218)

As explained in Chapter 5, interruption arises naturally in the generation of harmonics in the form of nodes, and it was noted that Bergson refers to the impulse of

consciousness as the ascending movement, thus representing the vital order, and matter as the descending movement, where inversion and interruption are analogous, but where interruption comes to represent the geometrical. The vital and geometrical therefore represent two sides of reality, just as the production of harmonics has its geometrical aspect as determined by the monochord for example, where numbers are generated in a descending series as reciprocals of the ascending series of whole numbers generated in its vital aspect when the vibrations are generated from the fundamental.¹¹¹ By returning to Figure 20 it can be understood that numbers are generated at the same time as the nodes (interruption), therefore changing the rhythm of the whole.¹¹² Plotinus uses this model for the generation of *logos*, substantial number and form in *Intellect*, a model that he also refers to as a melody, and in *Creative Evolution* Bergson acknowledges that he is following Plotinus' theory of *logos*:

Our comparison does no more than develop the content of the term λόγος, as Plotinus understands it. For while the λόγος of this philosopher is a generating and informing power, an aspect or a fragment of the ψυχή, on the other hand Plotinus sometimes speaks of it as of a *discourse*. More generally, the relation that we establish in the present chapter between "extension" and "detension" resembles in some aspects that which Plotinus supposes. (C.E., fn., p.210)

Bergson proceeds to criticise Plotinus for following Plato in erecting mathematical essences into absolute realities rather than incorporating them into the durational process. Hude remarks that Bergson's lectures on Plotinus were given after the publication of *Matter and Memory* and are contemporaneous with the preparation for *Creative Evolution* (Hude, 2000, p.7).¹¹³ Although Bergson was obviously aware of

¹¹¹ Chapter 2.3, Figure 4, p.48.

¹¹² Chapter 5.3, Figure 20, p.165.

¹¹³ Appendix 3, p.3.

Ennead VI ‘On Number’ because he was critical of mathematical essences being erected into absolute realities and understood the nature of Plotinus’ *logos* to be substantial number and form, curiously he failed to mention or explain it in his lectures and talks on Plotinus, despite referring specifically to the vibrations in *Soul* (Hude, 2000, p.72).¹¹⁴ In his lecture on Plotinus he refers to it as “a principle that unites the multiplicity; it is the λόγος ἐν σπέρματι, the generative reason” (Hude, 2000, pp.30-31), a term, which as noted in Chapter 3, is ambiguously interpreted by modern scholars of Plotinus.¹¹⁵ He also refers to Plotinus’ *logos* in his address to the University of Edinburgh entitled ‘The Problem of Personality’; however, while he acknowledges: “In the centre of all this metaphysic is the concept of λόγος”, not once does he mention it refers to Plotinus’ account of substantial number and form (*Mélanges*, p.1,056). It seems as if Bergson’s ambiguity is deliberate, and a theory of why this is so is proposed in the Conclusion.¹¹⁶

We have seen that in *Creative Evolution*, living beings possess tendencies according to the proportions they emphasise; however, Bergson first reconciled quality and quantity under the auspices of duration as vibrations of consciousness and matter respectively, in *Matter and Memory*:

By the idea of tension we have striven to overcome the opposition between quality and quantity. (M.M., p.330)

¹¹⁴ Appendix 4, p.48. Here Bergson states: “But for Plotinus perception is sympathy of the organ with the object with which it vibrates in unison”.

¹¹⁵ Chapter 3.4, p.83-84

¹¹⁶ Conclusion, pp.307-308.

It was noted in Bergson's notion of *association* that consciousness condenses the vibrations of matter within its own duration, and he provides an example of perceiving a red light that vibrates at a rate of 400 billion times a second:

Thus the sensation of red light, experienced by us in the course of a second, corresponds in itself to a succession of phenomena which, separately distinguished in our duration with the greatest possible economy of time, would occupy more than 250 centuries of our history. (M.M., p.272)

Gunter notes the arithmetical relationship between them has “an objective basis” and “an element of quantitative commensurability”. It is “the indivisibility of the rhythms, of both sorts, which grounds the possibility of quantitative relations” (Gunter, 1999). Bergson acknowledges that modern physics reveals “differences in number behind our distinctions of quality” (‘Introduction II’, in C.M., p.58-59), and if consciousness is generated in the same way as matter, differences of number must be behind the proportionality of consciousness. For Bergson these numbers make the interaction of mind and matter intelligible as qualities, as noted by Deleuze:

And qualities belong to matter as much as to ourselves: They belong to matter, they are in matter, by virtue of the vibrations and numbers that punctuate them internally. (Deleuze, 1991, pp.87-88)

Furthermore, Deleuze comments:

One of Bergson's more curious ideas is that difference itself has a number, a virtual number, a numbering number. (Deleuze, 2004, p.34)

In *A Thousand Plateaus* Deleuze makes a distinction between the ‘numbered numbers’ belonging to striated space and the ‘numbering numbers’ pertaining to smooth space. For him numbering numbers are ordinal, dividing themselves without changing their nature on each division, the units of which represent distances, not magnitudes (Deleuze

& Guattari, 2004, p.535). While Deleuze's numbering number sounds very much like Pythagorean qualitative numbers in time measuring distances between musical intervals, Deleuze is thinking purely of virtual space, the ontological potential condition underlying the actualisation of extended space. Bergson is consistent with Plotinus who applies the term 'numbering number' to monadic number which is spatial, while 'numbered numbers' are whole numbers that are not divided and whose temporal differences can be represented as ratios. For Plotinus numbered numbers are measures not measured, and this appears to be an appropriate understanding of the numbers punctuating duration. There is no explicit evidence that Bergson linked Plotinus' theory of number to Pythagorean harmonics, however the connection could not have escaped him since Plotinus acknowledged the Pythagorean influence, and Bergson lectured on Pythagorean philosophy as well as Plotinus. The subject of number leads to an examination of the subject of Bergson's attitude towards mathematics.

6.3 Bergson and Mathematics

The Pythagoreans clearly distinguished between the mathematics of space, geometry, and the mathematics of time, musical harmonics, and similarly Bergson distinguishes the geometrical and the vital orders. He is emphatic that the mathematics of space cannot account for duration because it is "concerned only with the ends of the intervals and not with the intervals themselves" (C.E., p.9); he even states that mathematics "goes beyond its province when it claims to reconstruct what takes place in the interval between two simultaneities" (T.F.W., p.115). It will be argued that the mathematics of harmonics is consistent with Bergson's theory of duration and the *logos* of Plotinus as discussed in the previous section.

Despite Bergson's statements about the shortcomings of mathematics, Deleuze hypothesised that his accounts of continuous and discrete multiplicities are influenced by Riemann's distinction between discrete and continuous manifolds (Deleuze, 1991, pp.39-40).¹¹⁷ Deleuze is often quoted by commentators looking for a definitive mathematical influence on Bergson, but perhaps Riemann's influence on Bergson should be approached with caution. Duffy explains that Riemann's theory, proposed in his 'Habilitationvortrag' entitled 'On the Hypotheses which Lie at the Foundations of Geometry', differentiates between two concepts of magnitude: a discrete magnitude consists of individual *elements* whose metrical relations are determined by the number of elements belonging to it, that is, quantity determined by counting, while a continuous manifold is three dimensional, like a continuous path that consists of *points* that "appear solely in relation to some continuous ambient background, whether actual or implied, such as a line or a plane". An example of a point would be the positions of perceived objects which are "compared to one another with regard to quantity by measuring" (Duffy, 2013, p.103). Plotnitsky explains that Riemann's theory applies to the geometry and topology of space. It is a 'conceptual mathematics' in which Riemann pursues 'a conception of space as a continuous three-dimensional manifold, such as a sphere:

[which] is a conglomerate of (local) spaces, each of which can be mapped by a (flat) Euclidean, or Cartesian coordinate map, and treated accordingly (and thus also given geometry), without allowing for a global Euclidean structure for the whole or a single coordinate system for the whole, except in the limited case of a Euclidean homogenous (flat) space itself. (Plotnitsky, 2009, p.108)

¹¹⁷ This view is supported by Durie (Durie, 2004).

Riemann's concept of a discrete manifold may be similar to Bergson's discrete multiplicity; however, the spatial nature of Riemann's continuous manifold does not apply to duration which implies succession and interpenetration, not externality of spaces within a continuum; hence Duffy comments:

While at first glance this appears to correlate quite closely with the Riemannian account, however, upon closer inspection it is apparent that what Bergson leaves out of his account is the very spatial nature of Riemann's qualitative multiplicity. (Duffy, 2013, p.107)

It is strange that Deleuze proposed the influence of Riemann on Bergson while also suggesting that Bergson "did not feel able to pursue the mathematical implications of a theory of multiplicities" (Deleuze, 1991, p.39); in fact, it was Deleuze himself who followed Riemann in associating the concept of a qualitative multiplicity with space as well as time.

Bergson introduced ambiguity as to the nature of durational number by accepting the validity of quantitative calculus in scientific enquiry, suggesting:

metaphysics should adopt the generative idea of our mathematics in order to extend it to all qualities, that is, to reality in general. ('Introduction to Metaphysics', in C.M., p.190)

Furthermore, he proposes:

one of the objects of metaphysics is to operate differentiations and qualitative integrations. (C.M., p.191)

Bergson's reference to modern calculus led Gunter to conclude that Bergson develops a 'qualitative calculus' on the model of the infinitesimal calculus of mathematics enabling him to differentiate the real parts of consciousness and break it down into a hierarchy of durations (Gunter, 1999). This is linked to the French mathematician Jean Baptiste

Joseph Fourier, who in 1822 published his theorem that any regularly repetitive motion and any wave, irrespective of the complication of its form, can be treated as the sum of a series of simple harmonic motions or waves (Roederer, 2008, p.127). While Gunter does not specifically refer to Fourier, it makes sense that the mathematical order to which he refers is that applicable to harmonic motion. Bergson was an adept mathematician who recognised the importance of the revolution that arose in mathematics and the sciences resulting from the development of infinitesimal calculus by Newton and Leibniz, because it was the first tool that made the mathematical modelling of continuous change possible. He also states that metaphysics, in adopting the method of modern calculus, “will in no way proceed to universal mathematics, that chimera of modern philosophy” (‘Introduction to Metaphysics’, in C.M., p.190), which led Gunter to concur with Jean Millet, who proposes that Bergson regards it as an “epistemological archetype” (Millet, 1987, pp.33-34).¹¹⁸ Although Bergson considers calculus to be the most accurate tool for scientifically measuring the nature of matter, he also considers its methodology to be “unstable” since it fails to capture the dynamic nature of duration. In *Creative Evolution* Bergson describes how the mathematician excludes flowing time because he calculates the state of a system at static moments:

In short, *the world the mathematician deals with is a world that dies and is reborn at every instant – the world that Descartes was thinking of when he spoke of continued creation.* (C.E., p.22)

The problem arises because the interval between the static moments is excluded. He agrees with George Berkeley, who in *The Analyst*, attacked the logical foundations of Newton’s calculus and “fluxions”, and Leibniz’s notion of infinitesimal change, both of

¹¹⁸ See also: Millet, J., 1974

which dealt with change in terms of continuous magnitudes as a succession of infinitely small jumps rather than a continuous flow. Berkeley asked:

And what are these fluxions? ... They are neither finite quantities, nor quantities infinitely small, nor yet nothing. May we not call them the ghosts of departed quantities? (Berkeley, 1734, pp.59 - XXXV)

This criticism also applies to Fourier's mathematics of harmonics that relies on spatial superposition, a notion that Bergson would ultimately reject because it is geometric (C.E., p.218). Calculus is the key method for solving any problem of change and principally consists in three steps: (1) Divide a problem in differential quantities. (2) Solve the problem for each differential quantity. (3) Integrate to sum up all the differential quantities. There is however, an alternative explanation of calculus that was proposed in the account of Bergson's partial finalism, the 3-stage generative structure of Pythagorean cosmology: (1) There is an undifferentiated unity; (2) From this unity two opposite powers are separated out to form the world order; (3) The two opposites unite again to generate life (Cornford, 1923, p.3).¹¹⁹ This process of qualitative differentiation and integration is linked to the Pythagorean *tetractys*, the ultimate symbol of *calculus*, a pebble diagram that represented the generative nature of reality as a temporal and qualitative evolution of the many out of the One,¹²⁰ a model much more in line with Bergson's concept of duration as a melody, especially as it contains the harmonic ratios that underlie the mathematical harmony of the musical scale. Bergson argues that the latent geometry underpinning the mathematics applied by science to the study of nature takes account of simultaneities without succession or

¹¹⁹ Chapter 2.1.4, p.39; Chapter 6.1, pp.177-178.

¹²⁰ *Calculus* is a Latin word meaning "pebble or stone" (as it is still used in medicine and dentistry) and indicates that pebbles (prehistorically and later) were used to "calculate."

duration (C.E., pp.210-11), hence in his view: “there is no definite system of mathematical laws, at the base of nature” (C.E., p.219). However, he claims that there is an objective order “approximately mathematical immanent in matter, an order, which our science approaches in proportion to its progress” (C.E., p.218). This could be related to the fact that by the middle of the eighteenth century music, or more specifically musical harmonics, was no longer considered a mathematical science applicable to the scientific study of nature, as explained in Chapter 1; however, in its study of the physics of acoustics, the mathematics of which pertains to the scientific notion of a vibratory universe, science was ‘approaching’ the mathematics of music. As noted in Chapter 5, for Bergson the order in space differs to the order in time,¹²¹ and as his ‘law of dichotomy’ generates proportions that are underpinned by number, the number he refers to as that used in its geometrical aspect of mathematics must be applied differently from that used in its durational aspect. While he does not discuss the nature of number underlying the vital order, the numbers of musical harmonics make most sense of his theory because they fill the intervals and reflect the temporal, qualitative and substantial nature of duration. This is consistent with the *logos* of Plotinus as discussed above and the Pythagoreans who made a similar distinction between the mathematics applying to the geometrical and vital orders; geometry was considered the mathematics of space and musical harmonics, the mathematics of time (Guthrie, 1988, p.34). It is noteworthy that Bergson refers to duration as the ‘uninterrupted humming of life’s depths’ (Perception of Change, in C.M., p.150), which could be interpreted as an implicit reference to a quotation commonly attributed to Pythagoras, though the source is unknown:

¹²¹ Chapter 5.2, p.151.

There is geometry in the humming of the strings, there is music in the spacing of the spheres.¹²²

The Pythagorean influence on Bergson is purely speculative because he never mentions them as one of his positive influences; therefore, the next task is to assess his attitude to Pythagorean number theory and their philosophy in general by scrutinising the lectures he gave on Greek philosophy.

6.4 Bergson and Pythagorean Number Theory

Bergson's 'Lecture on the Pythagoreans' reveals an understanding of and sympathy with Pythagorean number theory.¹²³ He draws upon several sources including Philolaus and Stobaeus; however, he relies heavily on Aristotle because he considers his texts to be authentic. At the start of his 'exposition of the system' Bergson makes the following statement:

The principle of Pythagoreanism is clear in Aristotle (*Metaphysics*, I, 5). Mathematical principles are the principles of things, and the elements of numbers are the elements of all beings. Everything is explained. (Hude, 2000, p.182)¹²⁴

Bergson firstly addresses the statement that mathematical principles are the principles of things and considers whether number is substance or attribute. He points to contradictory statements in Aristotle: *Physics* III, 4 refers to number as substance and not an attribute; it is bound to sensible things in such a way that it cannot be mentally

¹²² As quoted in the preface of the book entitled *Music of the Spheres* by Guy Murchie (1961).

¹²³ A translation of this lecture is provided in Appendix 2.

¹²⁴ Appendix 2, p.3.

abstracted, i.e. that things are numbers, or that number would be the immanent principle of things, whilst *Metaphysics* I, 6 states things exist by imitation of numbers and Plato merely substitutes the notion of ‘participation’ (μέθεξις) for the Pythagorean notion of ‘imitation’ (μίμησις). This latter point seems to be confirmed by Stobaeus:

I know, he said, that many consider Pythagoras as having said that things arise from number, but in reality, Pythagoras did not say that things come from number, but that they are according to number, κατ'ἀριθμόν. (Stobaeus, *Eclogae*, I.302, in Hude, 2000, p.183)¹²⁵

Bergson notes: “According to some critics and Brandis in particular, there would be the two opposing tendencies”; however, he refers again to Aristotle who states: “Because the Pythagoreans found a resemblance between numbers and things, they accepted that number is the principle of things” (*Metaphysics*, I.5). Bergson acknowledges this reconciling statement as a likely truth, i.e. the Pythagoreans confused “simple resemblance and identity ... Perceiving that things are subject to precise mathematical relationships that had the character of number, they concluded they were numbers”. He further adds:

In fact the Pythagoreans, having not yet distinguished a metaphysical principle from a material principle, had not realised that the reality of things and their intelligibility are two separate things; perceiving that number is the condition for the intelligibility of things, they concluded that number constituted the substance, the matter of things. Number is a metaphysical principle used as material principle by philosophers who did not make the distinction. (Hude, 2000, p.184)¹²⁶

¹²⁵ Appendix 2, p.4.

¹²⁶ Appendix 2, pp.4-5

Having acknowledged the metaphysical nature of number, Bergson then attempts to resolve a further confusion about Aristotle's statement that the Pythagoreans considered units to have magnitude or extension, and that it is a contradiction for material bodies to have the form of number. Bergson criticises Aristotle for interpreting his predecessors based on his own ideas, i.e. likeness only explains likeness, or "extended elements are needed to explain extended things". He suggests we would have to reject the materialist interpretation of German historians Reinhold and Brandis, as well as a different theory proposed by Ritter, that although number is immaterial, the Pythagoreans considered material bodies to be geometric properties that would be represented by number, that is, the unit would be the point and numbers would represent relationships of a spatial magnitude. Bergson rejects this theory because it would not have been possible before Democritus:

This way, the point would be identified with the atom. However, the atom is a direct product of the eclecticism subsequent to Pythagoreanism. (Hude, 2000, p.185)¹²⁷

Bergson prefers Aristotle's contention that number is substantial and purely mathematical, i.e., having no magnitude. In his 'Introduction', Hude comments that in his lecture Bergson relies heavily on Zeller for both content and references, and that Bergson used Boutroux's translation of Zeller (Hude, 2000, p.11).¹²⁸ In Zeller's text, following his reference to Ritter, he makes some interesting comments that Bergson

¹²⁷ Appendix 2, p.5.

¹²⁸ Appendix 1, p.2.

For Boutroux's translation of Zeller, E., 1869-1881. *Die Philosophie der Griechen in ihrer Geschichtlichen Entwicklung*, see: Boutroux, E., 1877. *La philosophie des Grecs*, vol.1 and Boutroux, E., 1884. *La philosophie des Grecs*, vol.2.

does not appear to have discussed in his lecture, but which reflect Bergson's tendency to prioritise melody, duration and intuition over geometry, space and intellect:

Since geometrical relations were derived from numbers, the elements of figure, - that is to say the point and the interspace - must be posterior to the elements of number. ...Had the Pythagorean philosophy taken the opposite course, and proceeded from space dimensions and figures to numbers, the geometrical element in it must have predominated over the arithmetical; figure, instead of number, must have been declared to be the essence of things; and the system of geometrical figures must have taken the place of the decuple numerical system. Even harmony could no longer have had the great significance that it possessed for the Pythagoreans, since the relations of tones were never reduced by them to space relations. (Zeller, 1881, pp.416-417)

Bergson then addresses the issue of how the Pythagoreans applied number to make it the general explanation of things, referring to the Pythagorean table of opposites and the conception of harmony (proportion) as that which brings the opposites together. It is noteworthy that the differentiation and integration of opposites later become key concepts in his work.

In his lecture, Bergson was quite sympathetic to the notion of Pythagorean number mysticism, in which each of the numbers was perceived to have a meaning attributed to its quality or 'energy' thus providing a correspondence between sensibility and intelligibility. Rather than dismissing the theory as outright nonsense, he saw 'method' in what many consider to be madness:

it should not be assumed that these connections are always made without method. (Hude, 2000, p.188)¹²⁹

¹²⁹ Appendix 2, p.8.

Bergson's sympathetic reading is reflected in his theory that "Creation signifies, above all emotion" (T.S.M.R., p.45), because emotion is linked to the power of qualitative change or the 'meaning' that lies in the intervals. In *Time and Free Will* Bergson proposes that the qualitative nature of numbers has an emotional equivalent:

When we explicitly count units by stringing them along a spatial line, is it not the case that, alongside this addition of identical terms standing out from a homogeneous background, an organisation of these units is going on in the depths of the soul, a wholly dynamic process, not unlike the purely qualitative way in which an anvil, if it could feel, would realize a series of blows from a hammer? In this sense we might almost say that the numbers in daily use have each their emotional equivalent. (T.F.W., p.123)

Bergson's example of an anvil and hammer could possibly be another reference to Pythagoras, because Iamblichus tells us that it was hearing the notes produced by the sounds of differing sized hammers striking an anvil that inspired Pythagoras to investigate the musical intervals. Bergson proceeds to note that tradesmen are aware that when pricing goods we notice a qualitative difference between £4.99 and £5.00 for example (T.F.W., p.123). Furthermore, in *The Two Sources of Morality and Religion* Bergson's intention is to link states of emotion to moral dispositions, proposing that emotions are prefigured in nature as "harmonics" arousing in us elementary feelings that are almost sensations:

They are recognisable because they are destined to spur us on to acts answering to needs. The others, on the contrary, are real inventions, comparable to those of the musician.But a fresh emotion, surely has arisen and used pre-existing notes as harmonics. (T.S.M.R., p.41)

He suggests this is what Rousseau did with the emotion prefigured in mountains.

Harmonics also underpin his arguments In *Laughter*:

Here we have the first illustration of a law which will appear with increasing distinctness as we proceed with our task. When a musician strikes a note on an instrument, other notes start up of themselves, not so loud as the first, yet connected with it by certain definite relations, which coalesce with it and determine its quality. These are what are called in physics the overtones of the fundamental note. It would seem that comic fancy, even in its most far-fetched inventions, obeys a similar law. (*Laughter*, p.27)

Furthermore, he suggests:

an emotion may be said to be dramatic and contagious when all the harmonics in it are heard along with the fundamental note. (*Laughter*, p.69)

While Bergson does not explicitly link numbers to emotion in these passages, the reference to harmonics, notably musical harmonics, and his assertion that numbers have an emotional equivalent must be considered alongside his view that there are differences in number behind our distinctions of quality.

6.5 Bergson and Pythagorean Philosophy

It was noted in Chapter 1 that Bergson feels at ease with Greek philosophers,¹³⁰ however other than Plotinus he gives no hint of being influenced by them. It is noticeable that he never criticises philosophy before the Eleatics but is very critical of philosophy from the time of the school of Elea and subsequently, Plato. In ‘The Perception of Change’ Bergson writes:

The conceptions of the earliest Greek thinkers were certainly very close to perception, since it was by the transformations of a sensible element like water, air or fire, that they completed the immediate sensation. But from the time the

¹³⁰ Chapter 1.3, p.29.

philosophers of the school of Elea, criticising the idea of transformation, had shown or thought they had shown the impossibility of keeping so close to the sense data, philosophy started off along the road it has since travelled, the road to a “supra-sensible” world: one was to explain things henceforth with pure ideas. (‘The Perception of Change’, C.M., p.132)

Bergson’s main problem with philosophy from the time of the Eleatics was that they rejected the emphasis on sense data and criticised the idea of ‘transformation’, the philosophy of Pythagoreanism. Bergson regards his philosophy to be true empiricism and he makes “transformation” a key theme in *Creative Evolution* (C.E., pp.230-231). Number atomism and a distrust of the senses first emerges with the Eleatic school, and Cornford comments: “it is generally admitted that Zeno’s arguments are directed against the Pythagoreans” (Cornford, 1923, p.7; p.11). This view is consistent with Bergson’s, that geometry always involves spatialization; hence while Zeno’s project is to demonstrate that continuous becoming is impossible, for Bergson the paradoxes serve to demonstrate the intellect’s inability to conceive motion other than as a series of discrete states and the impossibility of representing absolute duration or the *mobility* of movement.

Bergson was also aware that by way of music the Pythagoreans found an underlying structure that led to the conclusion all relationships could be regulated by the same harmonious principles, and as noted in Chapter 2, music formed a bridge between the inner and outer cosmos. Through their empirical investigation of musical harmony, they determined that musical ratios were not just perceived by the sense of hearing; they could be apprehended by the mind as number in time, as noted by Hermann:

The discernment between agreeable and disagreeable sounds was no longer the exclusive domain of one's ears. One could also determine these ratios by entirely intelligible means. (Hermann, 2004, p.94)

The Pythagoreans instigated a shift in Plato's philosophic inquiry away from materialistic cosmologies of the earlier Ionic tradition to the consideration of form. Aristotle said that what differentiates Plato from the Pythagoreans is separation (*Metaphysics*, 989b 29) or the introduction of the Forms (*Metaphysics*, 987b 31) which he traces back to the dialectic developed by Socrates. Plato's ideas are criticised by Bergson in *Creative Evolution* because he identifies the theory as a product of the function of intellect and language that separate the parts from the whole, suggesting that Plato's dialectic laid the foundation for separating qualities and quantities (C.E., pp.314-328). Bergson's criticism of Plato could also be linked to the prioritisation that Plato 'appears' to give to mathematics over the science of harmonics. In *Republic* (529b-531a) Plato prioritises the harmony of mathematics over that of the harmony of music played on instruments because in his view ideal and abstract mathematical relations are not present in material objects. He criticises the Pythagoreans for focusing too much on the actual sound of musical intervals, and not concentrating enough on the silent harmony of pure numbers.¹³¹ It is possible that Bergson shared Burkert's view that Plato distorted the empirical nature of the Pythagorean tradition:

The problem of the Pythagorean tradition lies in Platonism, for Platonizing interpretation took the place of historical reality. One can only guess at the reasons why Plato and his pupils saw themselves as continuators of Pythagoreanism. (Burkert, 1972, p.92)

¹³¹ See: Guthrie, 1962, pp.161-162.

If, as has been proposed, Bergson's transformational philosophy is founded on the science of harmonics, it is possible that underlying his criticism of Plato was the thought that the death knell for Pythagoreanism was rung by Plato, and from that time intellect dominated the fields of science and mathematics. Pythagorean harmonics and a philosophy of transformation were forgotten until they were revived by Plotinus in the form of *logos* in which movement and change is implicated, and which Bergson adopts as central to the evolution of the *élan vital*. Having said that, neither Plato nor Plotinus neglected the empirical; while Plotinus cannot be described as an empiricist he described how forms perceived empirically by musicians, can lead us to the nature of the forms in *Intellect (Ennead I.3.1, 20-35)*,¹³² in the same way that Plato said that geometers use visible forms to lead them to their intelligible paradigms (*Republic VI, 510d-e*). However, for Bergson, it was Plotinus' concept of *logos* that differentiated him from Plato, and while he criticises Plato in particular for proposing a philosophy based on the notion of static ideas existing in eternity, he considered it an error that Plotinus tried to 'fix', and this is why he excluded Plotinus from his criticism of Greek philosophy in *Creative Evolution* (C.E., p.326, fn.).

The examination of Bergson's theory of multiplicity in this Chapter as well as Chapter 5 has brought to light that there are inferred references suggesting a possible Pythagorean influence on Bergson, and a further example is found in *The Two Sources of Morality and Religion*. Bergson proposes that life proceeds by progress and oscillation between opposites, or what he refers to as the '*law of twofold frenzy*' (T.S.M.R., p.296), that life has become complex and will swing in the opposite direction to a simpler life. He refers specifically to vegetarianism and the idea that science will prove he is 'directly and slowly poisoning' himself 'by eating meat',

¹³² Chapter 8.2.2, p.244.

though oddly, he adds a footnote to say that he chose the example of meat as he might have that of any other food, as if he anticipated his reference would lead us to think of an inference to Pythagoreanism (T.S.M.R., pp.300-301). The fact is, he chose ‘meat’, not any other food. In the light of all the other evidence linking Bergson to Pythagoreanism, it is appropriate to speculate that the return to a simple ‘vegetarian’ life could symbolise a return to a philosophy of transformation like that of the vegetarian Pythagoreans whose philosophy he was influenced by.

6.6 Bergson and Metaphor

Bergson makes various explicit references to harmonics as well as melody in his work; however, the common view is they are purely metaphorical, as noted by Edward Campbell who refers to Marcel (Marcel, 2005, p.86, pp.88-89):

In 1925 Gabriel Marcel argued convincingly that Bergsonian duration does not accurately encapsulate musical experience. Bergson had not set out to develop a theory of musical time or duration, and he used the example of melody only metaphorically. (Campbell, 2014, p.229)

The Pythagorean influence on Bergson has also been rejected by Barnard, who in his chapter entitled ‘Melodies of the Self and the World’ offers an enlightening description of how Bergson sees reality as a “vast ongoing musical creation” while considering it a metaphor that excludes any likeness to the Pythagorean music of the spheres:

Instead of envisioning the universe as the rigorously formulaic manifestation of some Pythagorean regularity, as the terrestrial echo of the “music of the spheres” in which matter obeys the preset “score” given by the Laws of Nature, why not think of physical reality as a complex jazz performance in which old standards are frequently performed (making them “habits” rather than “laws of

nature”), even if, periodically and regularly, something unexpected also occurs, something genuinely new takes place as the adaptive result of different individuals and groups responding to and interacting with each other. (Barnard, 2011, p.92)

Barnard gives the impression that law does not apply to Bergson’s creative evolution and that a law of harmonics, which is “formulaic”, cannot account for spontaneous novelty and freedom through constructive and destructive interference. Most musicians base their spontaneous creations on pre-existing scales from which they are free to choose the notes to play. He also provides a distorted impression of Pythagorean philosophy as being “pre-set” and rigid, whereas it proposes that human action can counter the effects of nature by awareness of the natural energy encountered daily, a view also held by Bergson, as will be discussed in Chapter 9.

It is also significant that several of Bergson’s arguments have a basis within the ancient science of harmonics, particularly that of Aristoxenus who, as explained in Chapter 2,¹³³ considered melody to possess power (δύναμις) that is essentially qualitative and implicated in its succession and continuity (συνέχεια), because notes have their own dynamic properties or functions that determine the progress of a melody in terms of its intervals. Similarly, while there is no evidence that Bergson read Aristoxenus, he proposes that organised matter evolves and has continuity due to its power in terms of ‘genetic energy’ (C.E., p.27) that varies with its function. It was noted in section 6.2¹³⁴ that Bergson employs the claims of Aristoxenus in his argument that scientific methods employ intelligence that uses ready-made concepts and language, and in his number theory, we interpret the difference in intensive magnitude,

¹³³ Chapter 2.4, pp.52-53.

¹³⁴ Chapter 6.2, pp.182-183.

kind or quality that cannot be measured, as a difference in extensive magnitude, quantity or degree that can be measured.¹³⁵ While Bergson appears to be influenced by Pythagorean harmonics, he appears to combine it with the more empirical Aristoxenian theory in a way that is not found in the *Enneads*.

Commentators appear to assume that Bergson's philosophy is not literally based on music or harmonics; however, in *The Creative Mind*, Bergson's opening words are: 'What philosophy has lacked most of all is precision ('Introduction I', in C.M., p.11), so if precision is his primary concern, why would he say that duration or the inner life "is that very melody" ('Introduction I', in C.M., p.19), or that our personality is "precisely the continuous melody of our inner life" ('The Perception of Change', C.M., p.149) if he intended the melody to be taken metaphorically? For Bergson intuition, which is durational, pre-exists intellect which thinks in terms of space. The intellect has to use spatial metaphors to explain that which is experienced immediately through intuition; however, as Harris notes, Bergson struggles to explain duration using spatial metaphors:

Bergson proposes one explanatory metaphor for duration after another, only to find them inadequate, if not deceptive. In essence, we find that Bergson lacks any notion of "space" or spatial metaphors which would accommodate the definitive characteristics of his concept of multiplicity. The chief impasse lies in that fact that qualitative or continuous multiplicity entails "reciprocal penetration," a tangled weave of sorts, and Bergson could not find a visual or spatial analogue because he equated space in general with the Euclidean space of common sense. (Harris, 2004, p.102)

¹³⁵ Chapter 9 will also claim that Bergson follows Aristoxenus in implicating the necessity of perception and memory in the theory of continuity (p.261-262). See also Chapter 2.4, p.53.

Not only are spatial metaphors ineffective in explaining duration, in *Creative Evolution* Bergson states that the intellect will essentially regard duration as metaphorical:

It is of the very essence of mechanism, in fact, to consider as metaphorical every expression which attributes to time an effective action and a reality of its own. (C.E., p.16)

In *The Creative Mind* Bergson suggests that spatial metaphors or images can bring forth an intuition of duration; however, they have to be different with a possibility of convergence due to them having “the same degree of tension”. Difference is needed to prevent any one of them from taking the place of the intended intuition, but together they gradually bring consciousness to a position where the intuition will be unveiled (‘Introduction to Metaphysics’, in C.M., p.166). So, we can acquire an intuition of duration by using spatial metaphors that appear to converge; however, they have to be different.

In the light of what Bergson writes about the need for spatial metaphors it is understandable that commentators assume that he has no other means of describing duration; however, it is suggested that his spatial metaphors form part of the process of ‘unveiling’ or initiation for the reader who is possibly not yet ready to see the light, and as was explained in Chapter 1, the information is not explicitly given because initiation is a journey of discovery that the student has to undertake for him/herself. On the other hand, his reference to duration as melody is temporal rather than spatial and brings consciousness to an immediate and “precise” understanding, which is why he repeats it. Once again, he hints at the notion of harmonics but does not describe it explicitly in his theory of duration and intuition. The analysis of his arguments for partial finalism, his theory of number, his rejection of mathematics as having the ability to account for duration, his sympathy with Pythagorean number theory and philosophy, the veiled

Pythagorean inferences, together with his insistence on precision, suggests that duration conceived as melody is not metaphorical because the harmonic principles underpinning it are precisely those that underpin his theory of the *élan vital* and duration as a temporal process. In Chapter 4 it was noted that Plotinus is more explicit about harmonic principles when describing the nature of *Soul*; however, he never uses musical metaphors when describing the generation and nature of *Being*, *Intellect* and matter, because the process itself is not metaphorical; hence his reliance on metaphors of light and vision to explain it. Bergson appears to adopt a similar approach; he is slightly more open in his musical references in his account of partial finalism but uses metaphors of fireworks and shells in his account of the division of the *élan vital*. While it is possible to question Plotinus' understanding of the mechanism of harmonics, there is no doubt about Bergson's knowledge because he was explicit about it, particularly in *Laughter*, where he refers to harmonics pertinent to optics as well as music, and later in *The Two Sources of Morality and Religion*. The increasing frequency of explicit references to harmonics, particularly in the latter book, possibly reflects a growing confidence in his theory due to scientific developments. In *The Creative Mind*, published in 1934, he comments:

When I began to write, physics had not yet made the decisive advances which were to bring a change in its ideas on the structure of matter ... The great theoretical discoveries of recent years have led physicists to suppose a kind of fusion between the wave and the corpuscle – between substance and movement (C.M., 'Introduction II', p.71-72).

While electromagnetic wave theory originated with the work of Maxwell in the latter half of the nineteenth century, according to the electric and magnetic equations postulated by Maxwell, electromagnetic fields resemble a wave in both structure and action (Maxwell, 1865, p.466). Theories of the harmonic oscillation of matter began

with De Broglie's discovery in 1925 that electrons are both particles and waves of vibration complete with harmonics and overtones that follow the same property and characteristics of vibration as the vibrating string of a musical instrument (Root-Bernstein & Root-Bernstein, 1999, p.139). In 1925, Heisenberg, Born, and Jordan expressed the quantum field's internal degrees of freedom as an infinite set of harmonic oscillators and in 1927 Schrödinger wrote down an equation for quantum waves (Heisenberg Society, 2017).

Conclusion

This Chapter argued that Bergson's harmonics of evolution are influenced by Pythagoreanism. Significantly, Bergson's argument for partial finalism replicates Plotinus and relies on key Pythagorean concepts: an original undifferentiated unity, the division and *association* of opposites, the notion of microcosm and macrocosm being a sympathetic whole, the notion of war generating new forms and the destruction of others as a result of harmonic interference, and the fact that musical ratios or proportions can account for the development of identical structures in independent lines of evolution. It was acknowledged that while commentators have noted the harmonics model, mystery surrounding Bergson's cosmology means they have not made the connection in any depth. It is proposed that his arguments for a *musical theme* are consistent with, ultimately depend on, and therefore support the harmonic model proposed in Chapter 5.

It was contended that Bergson's arguments for a difference between quantitative and qualitative multiplicity replicates Plotinus' distinction between monadic and substantial number and he acknowledges he is following Plotinus's theory of *logos*.

Despite having a clear understanding that Plotinus' *logos* refers to substantial number and form, it was considered noteworthy that he failed to explain it as such in his lectures and talks.

It was argued that commentators' perceptions of the influence of mathematics on Bergson should be re-evaluated in the light of the Pythagorean influence on him. The spatial conceptual mathematics of Riemann is not consistent with the temporal nature of duration, and it was suggested the calculus Bergson had in mind for his philosophical method was able to operate genuinely qualitative differentiations and integrations as the Pythagoreans conceived it. Hence the mathematics underpinning it was not the mathematics of science, but music, the significance of which is that it takes account of the intervals.

The examination of his 'Lectures on the Pythagoreans' assessed his attitude towards them, and it was ascertained he was familiar with their cosmology, and he adopted key concepts in his work. It revealed sympathy with their theory of number and philosophy of transformation.

It was argued that the combination of harmonics and Pythagorean concepts in his work suggests his concept of duration as melody cannot be interpreted as mere metaphor. While Bergson insisted on precision in philosophy, the harmonic principles forming the basis of melody are precisely those forming the basis of the *élan vital* and duration. It was also suggested that his spatial metaphors are intended to form part of the process of 'unveiling' or initiation for the reader.

The argument for a Pythagorean influence on Bergson will be developed further in Chapter 9 with an examination of how the Pythagorean concept of *kairos* impacts on his work. The next chapter will introduce the concept of *kairos* with an explanation of how it was understood in ancient Greece.

Chapter 7

Kairos (Καιρός)

*

Introduction

Kairos is a term used in ancient Greece to refer to the moment of ‘happening’, or the incomplete moment that bridges or intersects the past and the future and is therefore essentially temporal in nature. In the modern literature, the concept of *kairos* is prevalent in the studies of rhetoric, theology and to a lesser extent, politics. Theology has placed increasing emphasis on it due to the work of Paul Tillich who was hugely influenced by Schelling; however, a survey of the literature reveals it to be a subject largely neglected by scholars of Plotinus and Bergson, particularly in the English language literature. French language sources provide only a scattering of articles that indicate its relevance to Bergson, notably from Vladimir Jankélévitch whose own philosophy is highly influenced by *kairos*, and J.M. Gebaude who has written specifically on the strong influence on Bergson, while E. Moutsopoulos, a philosopher of kairicity, has written extensively on the general subject of *kairos*, including its relevance to the philosophy of Plotinus. *Kairos* is an important concept that links Bergson and Plotinus to ancient Greece and the Pythagorean tradition, thus strengthening the argument for a Pythagorean influence on them. As it plays an important role in the cosmology and psychology of Plotinus and Bergson, this brief Chapter is a prelude to explaining the nature of *kairos* in their work. It introduces the subject of time in the form of *Chronos* and *Kairos* as it was understood in ancient Greece, by the Pythagoreans, and how their influence pervades classical rhetoric, the

importance of which will be addressed in Chapter 9 in an examination of how Bergson incorporates the principles of rhetoric into his philosophy.

7.1 *Chronos* and *Kairos* in Ancient Greece

For the ancient Greeks, *Chronos* was the primeval god of time, who in Orphic cosmogonies emerged self-formed at the beginning of creation. With his consort Ananke (necessity), he circled the primal world-egg and split it apart to form the ordered universe of earth, sea and sky. As they subsequently continued to circle the cosmos, their passage powered the circling of heaven and the eternal passage of time. While the ancient Greeks measured the time of day by shadows, months by the phases of the moon, and seasons by animal migration and astrological movement, they considered the natural world to be anything but stable or trustworthy, as Allen comments:

...a closer look at the evidence suggests that Hesiod, like a number of other early Greek writers, had a far subtler sense of how deeply irregular and unreliable the passage of time in nature really is. (Allen, 2003, p. 63)

The Greek oral poet Hesiod (circa. 750-650 B.C.) provides a clear insight into the ancient Greek perception of time in ‘Works and Days’, in which he guides the reader on natural signs including animal and plant behaviour, weather, seasons and astronomy that indicate conditions for action. Time here is referred to as “time to” or “time of”

(τότε - II. 452), “season” (ώραῖος - II. 663-677), “right time” (ώραῖος - II. 663-677), “when” (ὅτ’ - II. 111), (ὅποτε - II. 494).¹³⁶

Time did not assume any regularity until the fourth century B.C. when sun dials were used to indicate the time of day, and water clocks (clepsydrai) were used like stop-watches in the courts to time speeches and for imposing a time limit on a client’s visit in Athenian brothels (Landels, 1979, p.33). Time was fashioned by human decisions, and since life accommodated changing circumstances and focused on agricultural need, religious festivals as well as political and military activities were scheduled according to the demand for agricultural labour (Foxhall, 1995, pp.97-110); hence, even solar or lunar calendars varied between different regions, and civil calendars were regularly adjusted by the archons (chief magistrates) as they saw fit. Since the application of measured time was very limited, in everyday life it was not generally considered to be directly measurable, uniform, or absolutely predictable; as such, it was purely subjective and greater emphasis was placed on the notion of time as *kairos*.

In Greek mythology, *Kairos* was the youngest son of Zeus, considered to be the daimon (spirit) of opportunity. He is depicted as a young man with wings on his feet, indicating the speed at which he passes, balancing on the tips of his toes on a sphere, representing the fact that he is running. He holds scales balanced on a razor signifying that justice or a decision is required at the point of *kairos* that stands between the past and the future. The tuft of hair on his forehead represents the opportune moment that can be grasped as he approaches, while the back of his head is bald indicating a lost opportunity for action. Such depictions may also be read as literal *ek-stases* from the

¹³⁶ See p.213 where it is explained that in Hesiod time as *kairos* is associated with: “the proper amount in the given circumstances” and in speech it refers to the use of language that is “appropriate, straightforward, and correct”.

world, as a function of that world. Aesop's Fables, written between 620 and 560 B.C., describe *Kairos* in Fable 536. Pollitt refers to a bronze statue of *Kairos* in the entrance to the stadium in which the first Olympiad was held in 776 BC, and Pausanias refers to a statue of *Kairos* sculpted by Lysippos from Sikyon, which was complemented by an epigram by Poseidippos describing the character of *Kairos* (Pollitt, 1986, pp.53-54).¹³⁷

According to the Online Liddell-Scott-Jones Lexicon, *kairos* (καῖρός) acquired many different meanings ranging initially from the spatial and later to the temporal, including: due measure, proportion, fitness, a vital part of the body, exact or critical time, season, opportunity, advantage or profit (Liddell-Scott-Jones, 2017). *Kairos*, as subjective qualitative time, centred on the demands of action necessary for agriculture and required a flexible response to natural signs and conditions.

In a study of *kairos* in Greek drama, Race advises that the adjectival form of the word first appears around 800 B.C. in Homer's *Iliad* (4.185, 8.84, 326) in which it refers to a vital place in the body. As a 'normative word', it often had no specific temporal meaning. In Hesiod, it refers to "*the proper amount in the given circumstances*" and in speech it refers to the use of language that is "appropriate, straightforward, and correct" (II. 694). While these concepts can be associated with time in *Works and Days* in terms of "time to", "time of, etc. as explained above, Race proposes that the temporal aspect is developed by the Greek lyric poet Theognis of Megara (600 BC), and later by the comic playwright Aristophanes (446-386 B.C.) for whom the meaning of *kairos* becomes 'success' resulting 'from action which is

¹³⁷ In Gibbs translation of Fable 563 he also notes that "This fable is based on a famous statue of *Kairos*, 'Opportunity,' by Lysippus, a famous Greek sculptor of the fourth century B.C.E (the statue is described in Posidippus, *Anthologia Planudea* 275 and Ausonius, *Epigrams* 11)."

See also Phaedrus Book 5.8, p.367, in Babrius & *Phaedrus*, 1989.

appropriate to or needed in the particular circumstances'. Race however, finds references to *kairos* as 'success' in Sophocles and 'advantage' in Euripides. *Kairos* as 'opportunity' or 'chance' is proposed by Euripides (*Ion* 1062) in the fourth century B.C.

Race concludes:

the temporal sense often enters the question because we naturally think of "times," "occasions," and "moments," when we are dealing with given circumstances or situations that change in time, and it is a short step from "appropriate to the given situation" to "correct at the moment" to "timely".
(Race, 1981, pp.197-213)¹³⁸

While *kairos* is also sometimes translated as 'profit', Wilson's study of the citations in the lexica to the end of the fourth century B.C. suggests very limited relevance (Wilson, 1981, pp.418-420).

As an indicator for action, *kairos* was also important in moral life and provided a sense of control over the instability of time. It was therefore an influential concept in ancient Greece, covering the realms of medicine, literature, poetry, performing art, rhetoric as well as the philosophy of the pre-Socratics, and subsequently the aesthetics and ethics of Plato and Aristotle (Sipiora, 2002, p.3). All these different fields acknowledged that the concept of *proportion* is fundamental to *Kairos*.

Eskin argues that *kairos* is a core theme in the medical writings attributed to Hippocrates (460-375 B.C.), where there is an emphasis on giving practical advice to the physician on using experience, judgement and instinct when treating patients. Successful treatment was based around the concepts of observation and enquiry; the physician had to take all relevant environmental factors into account, including the symptoms presented, astronomical factors, season, weather conditions, the patient's

¹³⁸ For an extensive commentary of *kairos* in Classical Greek literature, see: Levi, 1923.

emotional state, what is said or done by the patient and physician etc. *Kairos* means providing the right treatment at the most opportune time and in the right proportion.

Eskin notes:

Hippocrates' literal use of the word *kairos* is frequent and telling: among the fifty-six works included in *IBYCUS*, *kairos* appears in thirty-three; within those thirty-three works, some form of the root *kair-* appears 264 times. (Eskin, 2002, p.98)

7.2 *Kairos* in the Pythagorean Tradition

As noted in Chapter 5, the Pythagorean study of numbers was applied in both a spatial and temporal context, where geometry was considered as number in space, and music or harmonics as number in time. Unlike Kant who proposed that time and space are *a priori* and necessary for experience, the Pythagoreans considered time to be generated with the cosmogonic and cosmologic process; Archytas wrote: “Time is the interval of the nature of all” (Simplicius, *Aristotelis categorias Commentarii*, in Ariotti, 1975, p.72). A compendium of essays in *Rhetoric and Kairos; Essays in History, Theory, and Praxis* edited by Philip Sipiora and James S. Baumlin, is a key source of information regarding the philosophical roots of *kairos*. Sipiora acknowledges the importance of the examinations of pre-Socratic thought by the Italian scholars Augusto Rostagni, Doro Levi, and Mario Untersteiner, and significantly all relevant contributions refer almost exclusively to these sources. Rostagni examined the role of *kairos* in sophistic rhetoric, particularly Pythagorean influences on Gorgias and Antisthenes (Rostagni, 1922). Doro Levi examined *kairos* in Greek literature and in the Seven Sages, Thucydides, Democritus, and Pythagoras, and this influence on Plato, who uses *kairos* to link ethics and aesthetics which subsequently shapes his thinking on philosophical

rhetoric (Levi, 1923; Levi, 1924). Mario Untersteiner produced a detailed analysis of the influence of *kairos* on Sophistic thought with an emphasis on Gorgias (Untersteiner, 1954).

The philosophical source of *kairos* is generally accepted by scholars to be Pythagorean, for whom it had cosmological and ethical significance. The potentially free decisive act of the individual required the necessary *kairos* of the outer world for its application, as Smith comments:

The important point ... is that the time of *kairos* is seen as an ontological element in the basic structure of things and, while that time calls for a human response, the occasion itself is not of human devising. (Smith, 2002, pp.53-54)

The significance of *kairos* as a dynamic and generative temporal concept in Pythagorean cosmology arises from the importance they attributed the number 7; its power appears to be one of transition from the old to the new, the past to the future, and the Pythagoreans acknowledged it in the outer world as well as the inner.

Alexander of Aphrodisias refers to the Pythagorean notion of *kairos* as ‘opportunity’:

The number 7 is opportunity (*kairos*), for natural things seem to have their seasons of completion, both of birth and of maturity, according to [periods of] seven, as in the case of man. For a man is born seven months [after conception], and cuts his teeth after the same number of months, and reaches puberty at about the end of the second period of seven years, and grows a beard at about the end of the third. The sun too, since it is itself thought to be the cause of the seasons, they say it is situated [in the place] where the number 7 is, which they call ‘due season’ (*kairos*); for they say that the sun occupies the seventh place [from the periphery] among the ten bodies that move around the centre, or hearth. (Alexander of Aphrodisias, *Metaphysics* I, 38, 17-38, in Dooley, 1989).

In this context, the number 7 arises cyclically, but always as part of the natural evolutionary process involving real change that may be necessary or even providential.

The number 7 is also important in the science of harmonics; it is the last note before the start of a new octave and carries with it the potential for the most concordant harmony.

Untersteiner comments that the Pythagoreans considered *kairos* to be "one of the fundamental laws of the universe" because *kairos* was implicit in the generative process of the universe through *harmonia*, the integration of opposites (Untersteiner, 1954, pp.110-111). The link to harmonics also had important implications for Pythagorean ethics; in 'Kairos in Classical and Modern Rhetorical Theory', James L. Kinneavy refers to Rostagni:

One of the most significant ethical components of *kairos* had to do with its close relation to justice, particularly among the Pythagoreans. Justice was defined as giving to each according to merit ... Justice, therefore was determined by circumstances: justice was *kairos* (Rostagni, 163). This combination was omnipresent in Pythagoras; according to Rostagni, "All of his [Pythagoras's] teachings, his influence as founder of a school and as expert and custodian of minds – everything is based on the combined principles of *kairos* and *dikaion* [justice]" (168). (Kinneavy, 2002, p.61)

Kinneavy also discusses the civic educational dimension of *kairos*, referring to the Pythagorean influence:

we know that Pythagoras had oriented his training in education to civic education, to training for public affairs, for life in the polis (Rostagni, 188). Iamblichus in his *Life of Pythagoras* states, "They say that he would have been the inventor of all civic education [*politike paideia*]" (Rostagni, 71). The constant theme of all his speeches was virtue, with *kairos* the determining principle in each case. (Kinneavy, 2002, p.65)

Proportion was an important subject of enquiry for Archytas, whose concern for fairness and stability in political and moral life approached it with mathematical precision, giving arithmetic or calculation (*logismos*) priority over the other sciences.

Like Philolaus he argued that through number, we can make discoveries about the world around us and understand it, as well as living a good life through its practical application (DK 47 B3). Archytas formulated a proof that the musical intervals in the form of $(n+1):n$ cannot be divided in half, i.e., that there are no mean proportional numbers in the superparticular ratios that govern the musical scale, 2:1, 4:3, 3:2 and 9:8 (Huffman, 2005, p.62). For Archytas, while all the ‘means’, arithmetic, geometric and harmonic have their rightful application, proportion is a relative value, which does not imply that the equality implicit in the arithmetic mean will always be appropriate. A similar theory was adopted by Aristotle (*Nicomachean Ethics*, Book II), whose virtue ethics were developed by education, but which excluded the mathematical precision considered necessary by later Pythagoreans; however, for both the Pythagoreans and Aristotle a ‘sense’ of proportion was fundamental for living a good life (*Nicomachean Ethics*, Book V).

While Eskin, as noted above, remarks on the influence of *kairos* in the medical writings attributed to Hippocrates, Iamblichus, in his *Life of Pythagoras* wrote:

And there are certain melodies devised as remedies against the passions of the soul, and also against despondency and lamentation, which Pythagoras invented as things that afford the greatest assistance in these maladies. And again, he employed other melodies against rage and anger, and against every aberration of the soul. There is also another kind of modulation invented as a remedy against desires. (Taylor, 1986, pp.59-60)

While Iamblichus does not mention *kairos* explicitly, he describes how Pythagoras corrected these imbalances by prescribing melodies or sounds according to “the rule of virtue” which is understood to be appropriate action taken at the right time and in the right proportion. Pythagoras helped to induce restful sleep and cleared heaviness in the morning through “certain peculiar songs and modulations, produced either by simply

striking the lyre, or employing the voice” (Taylor, 1986, pp.32). His description therefore contains all the essential features of *kairos*.

The Pythagorean notion of *kairos* was taught and employed in Greek rhetoric as important for *phronesis* (practical wisdom), for speaking intelligently in the assembly, the courts and in private discourse, to enable citizens to decide on the best course of action in specific circumstances. It required an intense awareness of occasion, audience, and the situational context. Sipiora notes how *kairos* dominated classical Greek rhetoric:

Kairos plays a major role in the First Sophistic movement, especially in the works of Protagoras and Gorgias. The legacy of *kairos* continues in Aristotle’s taxonomy of rhetorical principles ...; it also assumes major importance in Plato’s concept of philosophical rhetoric and in Isocrates’ rhetorical *paideia*. In short, *kairos* was the cornerstone of rhetoric in the Golden Age of Greece. (Sipiora, 2002, p.3)

Kairos remained the foundational principle for Gorgias’ reputed student, Isocrates who considered it a way of life and developed a complete educational system around it. He was a rival of Plato and his views on rhetorical theory influenced Aristotle.

According to the Italian scholars, the Pythagorean influence has been traced within the field of classical Greek sophistic rhetoric from Isocrates, back through Gorgias and on to Empedocles who provides the direct link to Pythagoreanism. Carter comments: “It was through Empedocles that *kairos* as the principle of opposites and harmony came to influence sophistic epistemology”. Empedocles, who appears to have been influenced by Pythagoreanism, provided a relativistic epistemology based upon opposing concepts and upon which his student, Gorgias, built rhetoric on the basis of “conflict and resolution”. Carter refers to Enos who states that Gorgias’ rhetorical methodology was “based upon a system of investigation in which probable knowledge

or opinion was revealed as a synthesis from dichotomous antithetical positions” (Enos, 1976, p.50); however, Carter also notes that a decision could also be arrived at by choosing “one position over its opposite based on the sense of greatest probability.” (Carter, 1988, pp.102-106). According to Sipiora, *kairos* employed in rhetoric was "a *dynamic* principle rather than a static, codified rhetorical technique" (Sipiora, 2002, p.10); the idea was to overcome the possibility of inaction caused by the cycle of contradictory positions, both of which could be conceived as true. Unlike the later Pythagoreans, the method employed by Gorgias was deemed irrational, and even though commentators who support the view that Gorgias uses the Pythagorean notion of *harmonia* between opposites, are in the majority, the verdict is not unanimous; De Vogel disputes the link with Gorgias:

For Pythagoras *kairos* is rooted in a cosmic-ontological order, whereas for Gorgias this background is completely absent. This makes for a radical difference; for it implies that for Pythagoras *kairos* had its place within a τάξις [order; system] and as such is of a rational-ethical character, whereas for Gorgias, where there is no such foundation, a complete irrationality remains. (De Vogel, 1966, p.118)

One could certainly argue that there is no evidence to support the view that *kairos* was completely rational for the Pythagoreans because there are no Pythagorean texts that specifically address the concept of *kairos*, in general or its association with rhetoric. We have to keep in mind that in the early Pythagorean era this is how time was generally conceived. It called for action based on judgements made on the basis of instinct or intuition and it appears to have been developed by later Pythagoreans such as Archytas who endeavoured to provide a rational answer to questions of ethics.

7.3 An Introduction to *Kairos* in Plotinus and Bergson

The concept of *kairos* has also been acknowledged to be at work in the philosophy of Plotinus and Bergson for whom the ontological aspect arises from a dynamic and ordered process of contemplation or intuition in which the universe and life within it are generated and evolve as harmonics and vibrations or overtones, as proposed in Chapters 4 and 5. However, it will be argued that for Plotinus and Bergson the psychological and ethical significance of *kairos* is considered an act of determined indeterminacy, bridging the tension between providence and freedom (Plotinus) and determinism and freedom (Bergson). This is possible because we have been provided with the basic structure or order that we use for our own evolution in which we create at will. *Kairos* in the human domain, which has practical utility, is a moment of action or ‘timing’, an occasion signifying the emergence of qualitative change that is situation specific. It is essentially open, undetermined and opportune; the crucial, decisive, though incomplete, interval that links the past to the future and one that requires human participation in the act of creation. It is a poietic moment in which Plotinus and Bergson employ the Pythagorean notions of opposites and *harmonia* in their concepts of mind and matter, and freedom and determinacy, concepts that integrate to facilitate action. Chapter 8 will present an interpretation of how Plotinus achieves this by examining his concepts of sense perception, memory, reason and contemplation, and how they impact on ethical action, while Chapter 9 will examine the operation of *kairos* in Bergson’s concepts of perception and memory, and their relationship with intellect and intuition, and how it functions in ethical action.

Chapter 8

Plotinus and *Kairos*

*

Introduction

Plotinus discusses the concept of time in the context of *chronos* in *Ennead* III. 7, 'On Eternity and Time',¹³⁹ where he claims eternity is the life of *Intellect* and its intelligible substance; its eternal existence or non-temporal nature means it has no past and no future (*Ennead* III.7.5, 27). Time or temporal becoming is "the life of soul in a movement of passage from one way of life to another" (*Ennead* III.7.11, 44-45), and the moving image of eternity (*Ennead* III.7.13, 24-25), a concept taken from Plato (*Timaieus*, 38 b6-c2; 37 d7-e4). Time is not measured time as we think of it; it is *kairos* as the *Soul* moves between *Intellect* and the material world, and in *Ennead* IV.7.9, Plotinus claims time is indefinite, non-spatial, and as such is neither a magnitude that can be measured or numbered, nor is it a measure or a number itself;¹⁴⁰ it is a continuous unbounded succession (*Ennead* III.7.11, 55-56). As such it is a precursor to Bergson's account of duration originally espoused in *Time and Free Will* because Plotinus argues that time is not a quantitative multiplicity that is measured as discrete units in space.

¹³⁹ It is not my intention to provide a comprehensive critique of this treatise, thus replicating the work of others. See, for example: (Wagner, 2008); (Smith, 1996); (Clark, 1944). I merely take what is relevant to understanding the concept of *Kairos* in the *Enneads*.

¹⁴⁰ See also *Ennead* VI.1.5, 16-20.

At the level of the *Hypostasis Soul*, all *Souls* are considered a unity; however, they have different functions or faculties operative in the process. The *World Soul* generates the world and there is a *Soul* that unifies the individual *souls* and their powers within it. Because *kairos* applies to the *World Soul* as well as individual human souls, it is pertinent to clarify how it operates with their respective functions: the making of the material world, the action of the individual *soul* within its corporeal environment, and how Plotinus incorporates freedom within his concept of Providence. It is therefore necessary to consider how Plotinus' cosmology relates to his psychology, a subject that has caused difficulties for most commentators because both are founded on the concept of *logos*, which, as was argued in Chapter 3, has been unsatisfactorily interpreted.¹⁴¹

The Chapter begins with an explanation of the nature of *kairos* as it applies to the *World Soul* and nature, and then it examines the key concepts of sense perception, memory, reason, and freedom as they relate to the individual *soul*. A comprehensive critical analysis of these concepts is not possible here, so the intention is to present the salient features, note the perceived difficulties, and draw upon textual evidence to support the argument that they can be resolved, if the theory that Plotinus founds his philosophy on Pythagorean harmonics is applied to these concepts.

8.1 *Kairos* and the *World Soul*

Moutsopoulos refers to *kairos* in nature as “the infinitesimal moment that causes the transition (and conversion) of a given phase of natural evolution to the next” (Moutsopoulos, 1984, p.443), and the function of the *World Soul* and nature, its lowest

¹⁴¹ Chapter 3.4, pp.82-89.

aspect, is to make the beings of the world as a temporal unfolding of *logos* in matter as a process of contemplation. It achieves this according to Providence, that is, it does not make by deliberate choice or reasoning, but by necessity.¹⁴² How then does Plotinus consider the making of the world an act of freedom? Plotinus refers to freedom as ‘ἐφ’ ἡμῶν’, often translated as ‘that which is in our power’, ‘that which is in our control’, or ‘that which depends on us’. In *Ennead* VI.8, Plotinus explains how ‘ἐφ’ ἡμῶν’ applies to the *One* and *Intellect*, which helps us to understand its application to the *World Soul*. There are three key requirements for freedom: (1) self-sufficiency; (2) what it makes must be within its power; and (3) its knowledge is right knowledge or wisdom. Self-sufficiency means there is no affection arising from outside influences. The *One* is self-sufficient in that it is cause of everything else and *Intellect’s* freedom arises from its self-determination, its thinking, or self-contemplation. He proposes:

...we shall grant voluntary action to one whose doings depend on the activities of Intellect and who is free from bodily affections. We trace what is in our power to the noblest principle, the activity of Intellect, and shall grant that the premises of action derived from this are truly free. (VI.8.3, 19-23)

Plotinus proposes that “all things come from contemplation and are contemplation, both the things that truly exist and the things which come from them” (III.8.7, 1-2).

Furthermore,

That which is called the Soul of the All ...considers what lies below it contemplatively and remains attached to the realities before it for ever; both are certainly possible; it can receive from There and at the same time distribute here, since it was impracticable for it as soul not to be in contact with this world. (IV.8.7, 26-32)

¹⁴² Chapter 4.2, p.106.

Deck's analysis of this statement is helpful, suggesting the consideration of what lies below the *World Soul* implies that it cannot be "caused or conditioned" by it, hence ruling out knowledge arising from sensation which is posterior to it, and discursive reasoning which is dependent upon sensation. He adds, "The consideration here must rather be the *World Soul's* eternal wisdom"; that in contemplating *Intellect*, the *World Soul* knows the world as the imitation of *Intellect*, "an imitation which is its function to produce". Deck also proposes that reference to 'same time' here is not meant temporally but indicates the internal duality of the *World Soul* (Deck, 1991, p.64). Plotinus states in *Ennead* III.8.5, 20, "action cannot come before contemplation", so *kairos*, as the moment of happening, is paradoxical because while the world is providentially and necessarily ordered, it is achieved by the contemplation of *Intellect* in its desire for the *Good*, and while its lower aspect, nature, makes the world, it does so by contemplating itself, and is self-disposed in this respect. In summary then, the *World Soul* fulfils the requirements for freedom, or ἐφ' ἡμῖν, because it is not under outside influence, what it makes is within its power, and its knowledge is right knowledge or wisdom because it directly contemplates the forms in *Intellect* that are *Beings* of eternal truth.

The generation of the world by the *World Soul* as *kairos* therefore includes the bi-directional movement found in *Intellect*, procession and reversion; however, while this movement may be considered horizontal because the highest aspect of the *World Soul* remains in *Intellect*, it distributes the forms to its lower aspect, nature, vertically and temporally. Movement from the higher to the lower is necessarily determined, whereas the ascension to *Intellect* fulfils the requirements of ἐφ' ἡμῖν. The *World Soul* has no need of a temporal memory because its being and its knowledge are complete due to its contemplation of *Intellect*, an activity that Plotinus describes as "recollection" of what

is already present in the Platonic sense. Recollection is also an activity of individual human *souls*, who, as we will see, also possess the powers of sense perception, temporal memory and reasoning, as well as the ability to achieve ἐφ' ἡμῖν.

8.2 *Kairos* and the Individual Soul

Specific reference to *kairos* arises eight times in the *Enneads*,¹⁴³ always in the context of 'occasion' and with reference to *Soul*. In *Ennead* III.5.8, Plotinus refers to Zeus as *Intellect*, with *Soul* being his offspring, who was Kairos in Greek mythology,¹⁴⁴ and while this may not have been his intention here, it is in *Ennead* IV.4 that Plotinus comes closest to describing the life of the individual *soul* in terms that replicate the ancient meaning of *kairos* as described in the previous chapter:

There is one thing after another related to our needs and the present moment, not definite in itself but always related to one external thing after another: as a result our decisions are different and relevant to the occasion when the need arises, and now this and now that external incident occurs. (IV.4.17, 5-9)

In this quotation Plotinus refers specifically to occasion as 'καίρος'. The present moment is *indefinite* or constantly changing, hence man needs sense perception to be consciously aware of what is externally present, memory to provide temporal continuity between those perceptions, and reason to help us understand what we

¹⁴³ *Enneads*: I.4.16, 19; I.8.8, 35; II.3.1, 10; II.3.3, 22; II.9.13, 24; IV.4.17, 7; VI.8.18, 44 and VI.8.18, 47.

¹⁴⁴ Armstrong comments: In ch.2 of this treatise, and elsewhere, Kronos is Intellect. This passage shows ... how little importance Plotinus attaches to the interpretation of myths. (p.197)

perceive and make decisions about how to respond to the occasion with appropriate goal directed action. The ability to decide also suggests an element of freedom is involved in the process.

When considering the notion of *kairos* in the context of individual human *souls*, things become more complicated because the individual has a body possessing a trace of *soul* made by nature, the lowest level of the *World Soul*, as well as possessing a higher incorporeal *soul* operating independently of the body and remaining distinct from it. The lower aspect of *soul* functions with the body, considered an instrument for practical activity (*Ennead* IV.3.26, 2-8), and its higher aspect is purely intellectual since it possesses its own intellect as well as having access to *Intellect* that is common to all *souls*. Blumenthal comments that Plotinus never gives a comprehensive account of all the faculties operative within the material body and individual *soul*, and our understanding is blurred because “we find both Platonic and Peripatetic doctrines, apparently left in more or less haphazard juxtaposition”. We have the tripartite division of the *soul* from Plato mixed with an Aristotelian division of faculties (Blumenthal, 1971, p.21). While Plotinus tends to refer to faculties as ‘souls’, it is more helpful to think of them as different powers operative within the composite living being. Blumenthal has summarised the faculties in a helpful diagram (Blumenthal, 1971, p.44), placing the various faculties within each of its aspects, though this is by no means clear. The material body appears to possess a vegetative *soul*, which is responsible for growth, nutrition, reproduction, and maintenance of the body (*Ennead* III.6.4, 32; IV.3.23, 35), a sensitive *soul*, and an appetitive *soul* that is the seat of natural desires, pleasures and pains (*Ennead* VI.4.15, 8-17). The cognitive faculties including imagination, memory, opinion, discursive reason and intellection appear to be mainly operative within the higher *soul* that functions with the lower sensitive *soul* to

provide information. Plotinus seems to suggest all the faculties are present to all living beings, however they are not all operative to the same degree, for example, the vegetative *soul* will be dominant in plants, while the cognitive faculties may be unused, and even in human beings one or more faculties may dominate others, the effect being either positive or negative in terms of practical action or well-being.

The examination of *kairos* in human practical action will primarily focus on sense perception, and the faculties of memory and reason, powers providing the individual with conscious temporal apprehension of its environment and thoughts, which is essential for deciding appropriate action.

8.2.1 Sense Perception

For Plotinus, sensation occurs in the body as a separate function to perception, which is a faculty of the individual, lower, or irrational *soul* forming a composite with the body. These two functions must therefore be distinctly examined before uniting them as sense perception.

In *Ennead IV.5*, Plotinus discusses the affection of the sense organs, with the primary focus being the relationship between the eye and the object of vision, while proposing his theory of sensation also applies to the other senses (*Ennead IV.6.1*, 11-14). He suggests a sensory organ is affected or receives an impression (τύπος) and becomes *assimilated* to the object (*Ennead IV.4.23*), while specifically rejecting materialistic theories of material impressions, such as an impression of an object in wax (*Ennead IV.6.1*, 1-2), or of a medium such as air being involved; instead, he claims sensation is achieved by *sympathia*. If it is in the nature of a given thing to be sympathetically affected by another thing because it has some resemblance to it, the

medium is not affected, or at least not in the same way (*Ennead* IV.5.1, 35-38). The concepts of ‘impressions’, ‘assimilation’ and ‘resemblance’ are implicit in *sympathia*, a subject causing difficulty for those analysing Plotinus’ theory of sense perception. Emilsson, for example, examined the subject in depth and is referenced by other commentators. He admits that he cannot account for the link between similarity and *sympathia*, and while he comments that Plotinus discusses *sympathia* as action at a distance to explain the efficacy of magic, prayer, the influence of the celestial bodies, as well as visual and auditory transmission, he remains in the dark:

...beyond what has been said, Plotinus says nothing about the mechanism by which *sympathia* is supposed to work. At any rate I have not been able to gain many insights relevant to the issue of visual transmission from what Plotinus says about *sympathia* outside IV.5. (Emilsson, 1988, p.48)

No other commentator appears to have offered an adequate explanation either. Emilsson correctly refers to *Ennead* IV.4.23 where Plotinus refers to the body as being assimilated to its object, where assimilate means “to make alike”, and he also notes that the organ passively receives the form from its object; however he proceeds to argue that the sense organ receives the quality of the form; that the affection is a “literal assimilation”, suggesting that “something in the eye is supposed to become literally red when a red thing is seen”. On pages 82-86 he explains this as the eye taking on colours in a phenomenal sense; for example, vision undergoes experiences of the colours in things that are before its eyes, and this does not require knowing that red is red. It is a pure experience of sensation that is outside of consciousness (Emilsson, 1988, p.87). He therefore proposes that objects have an independent existence as qualities, a view also shared by Chiaradonna (Chiaradonna, 2012, pp.194-198). Emilsson’s and Chiaradonna’s literal interpretation would be flawed according to how Plotinus

conceives *sympathia* from the perspective of the model of harmonics explained in Chapter 4. In this model the universe consists of *logoi* or forms that are vibrations and substantial numbers, and *sympathia* creates change or novelty through a process of constructive and destructive interference; however, another of its features is the passive affection of an object by another object at a distance from it, but one which leaves the passive recipient unchanged. It is referred to in modern physics as ‘sympathetic resonance’, a term defined by Green and Butler as follows:

Sympathetic vibration is a special type of resonance in which sound waves, traveling in air, transmit energy from one sonorous vibrator to another. The second vibrator must possess the same natural frequency ..., or have a frequency that is an integral multiple of that natural frequency. (Green & Butler, 2006, p.248)

Similarly, Plotinus refers to the strings of separated lyres having a ‘sense’ of attunement with each other, and because of its importance to the current subject I repeat the passage quoted in Chapter 4:¹⁴⁵

But often too, when one string is plucked another has a kind of sense of this by its concord and the fact that it is tuned to the same scale. But if the vibration can even pass from one lyre to another in so far as a sympathy exists, then there is also one single harmony in the All. (*Ennead* IV.4.41, 4-8)

While Emilsson does not acknowledge this passage, Plotinus is obviously aware that sympathetic resonance is a natural phenomenon because he uses it as an example of *sympathia* in which there is action at a distance. Such a resonance will not affect surrounding objects in the same way unless they are also attuned to it. It is therefore suggested that when Plotinus refers to a sensory organ receiving impressions, he means

¹⁴⁵ Chapter 4.3, p.115.

that one form resonates to the vibrations of another, which also makes sense of his assertion that apprehension of the object of vision occurs where the object is (*Ennead* IV.6.1, 16-17). It must be noted that this also Bergson's understanding of *sympathia* in Plotinus.¹⁴⁶ An understanding of 'resemblance' or 'similarity' can be found in *Ennead* I.2., where Plotinus refers to "likeness" in two senses:

one requires that there should be something the same in things which are alike; this applies to things which derive their likeness equally from the same principle. (*Ennead* I.2.2, 5-7)

The "likeness" between sense objects and sense organs arises because they are bodies that originate from the same principle, the *World Soul* or nature, and possess the same *natural frequency*, and also the same substantial number or *harmonic* linked to that frequency. The other kind of 'likeness' will be discussed later. 'Assimilation' refers to the fact that the receiving form is caused to vibrate at that frequency, in sympathetic resonance with it, just as sympathetic resonance occurs between the two strings. While physics acknowledges that sound vibrations need air as a medium, for Plotinus' non-material theory, a medium such as air is not necessary because the universe is a living being whose parts are integral to it, just as a hand is an integral part of the body while being distinct from the other parts. It is, as Emilsson notes, like that of light which is able to pass through a vacuum, making air unnecessary for visual sensation (Emilsson, 1988, p.41). The sense organs have their own forms or vibrations that resonate with what they sense, for example, the eye resonates to the vibration of light and the ear resonates to the vibration of sound; the eye does not see sounds because it is not attuned to the same scale.

¹⁴⁶ See: Appendix 4, p.48. Here Bergson states: "But for Plotinus perception is sympathy of the organ with the object with which it vibrates in unison".

This new interpretation suggests that as products of nature, bodies are forms in matter only as contemplations, or imitations; not qualitative images of the forms in *Intellect* as Emilsson proposes. Emilsson interprets εἶδωλον as “image or reflection in the sense in which an ontologically posterior item is said to be an image of an ontologically prior one”, and he states that it is used “synonymously with ... mimêma” or imitation (Emilsson, 1988, p.119). There is a possible confusion in the secondary literature caused by Plotinus’ use of the word mimêma. While Emilsson tends to interpret this as a qualitative image, it raises the question of where these images come from. Nature does not imagine, it only contemplates the forms in itself, and matter reflects the forms as an imitation of those in *Intellect*, which are certainly not images, because matter is nothing and has no power (*Ennead* I.4.10, 17-22; IV.6.2, 18–19). Plotinus explains in *Ennead* III.6.15 that an image or representation (φαντασία) is produced by the faculty of the individual *soul* functioning in sense perception. The interpretation proposed implies that sense objects are living beings and parts of a whole that is living, active and vibrational. Objects have a real existence outside the perceiving subject, but not as images having mass or spatial qualities, since this depends on an activity of the perceiving *soul*. While the eye, for example, receives affections from external objects, it is an organ of vision (sight), but the *soul* does the seeing. Sensation cannot be understood if we consider impressions of material objects, as Plotinus argues, or even of their qualities, because it makes the idea of similarity or assimilation between sense object and sense organ incomprehensible. The main difference between this new interpretation and Emilsson’s, is that it places much greater emphasis on Plotinus being influenced by Pythagorean *sympathia* which is underpinned by the science of harmonics, whereas Emilsson suggests that he “adapts” *sympathia* as proposed by the Stoics (Emilsson, 1988, pp.47-48). Furthermore, he

interprets the word *mimêma* (imitation) as a qualitative image and the new interpretation considers it a form or forms (vibrations).¹⁴⁷ Imitation as an activity rather than a static image, is also found in Plato in *Ion* (533e - 535a) and *Republic X* (600c - 602b), where he refers to the activities of poets craftsmen and artists who engage in imitation. Similarly, Aristotle writes of the work of poets and artists as an activity (*Poetics* 1447a and 1449a).¹⁴⁸ While Emilsson struggles with Plotinus' concept of *sympathia* as it applies to sensation, Pythagorean *sympathia* offers a plausible solution worthy of further investigation in more depth than can be achieved here.

Plotinus noted the discovery of the nerves by the physicians Herophilus and Erasistratus in the third century B.C., and acknowledges the view elaborated by Galen, that impressions received by the sense organs are transmitted to the brain via the nerves (*Ennead* IV.3.23, 9-21), but it is not a view that he adopts. For Plotinus, it is the function of the lower *soul* to unify the sensations received by the sense organs; the body is however a pre-requisite for sense perception by the individual *soul* as it acts as a medium through which the lower soul perceives. This brings us to the perception of the sensation by the *soul*.

Plotinus states that the *soul* only contemplates forms (*Ennead* I.1.7 14-17), so the sensations are conveyed to the *soul* as forms:

the perception of sense objects is for the soul or living being an act of apprehension, in which the soul understands the quality attaching to bodies and takes the impression of their forms....when it is by itself [the soul] apprehends what is in itself, and is pure thought; but if it also apprehends other things it

¹⁴⁷ Imitation as 'μίμησις' as action rather than a static image, also informs Aquinas' account (S.T. 1 Qu.117 art.1) of "art as imitation of nature in her manner of operation."

¹⁴⁸ For a comprehensive analysis of μίμησις in Plato, see Marušič, 2008, Chapters IV and V.

must first have taken possession of them as well, either by becoming assimilated to them, or by keeping company with something which has been assimilated. (*Ennead* IV.4.23, 1-9)

Being immaterial, the *soul* is not affected by objects (*Ennead* III.6.1, 25-32) and does not directly receive impressions from them; it receives their impression via the body:

And soul's power of sense-perception need not be perception of sense-objects, but rather it must be receptive of the impressions produced by sensation on the living being; these are already intelligible entities. (*Ennead* I.I.7, 9-12).

This brings us to his second account of "likeness". The first account referred to things derived from the same principle, and the second refers to things derived from different principles:

But in the case of two things of which one is like the other, but the other is primary, not reciprocally related to the thing in its likeness and not said to be like it, likeness must be understood in a different sense; we must not require the same form in both, but rather a different one, since likeness has come about in a different way. (*Ennead* I.2.2, 7-10)

In this passage, "likeness" is not based on similarity of form, but difference of form, because the form of the *soul* is not the same as the form of the body; however, while Plotinus does not speak of their assimilation in terms of *sympathia*, Chapter 4 explained that the individual *soul* is attracted to its body because of a 'correspondence' or attunement between them.¹⁴⁹ Each individual *soul* must be considered a microcosm of the *Soul* at the level of the *Hypostasis Soul*. Viewed from the perspective of harmonics the individual *soul* is a *logos*, a form or vibration, just like a body without its matter. As such, it can be considered a *fundamental* possessing all the *logoi* in

¹⁴⁹ Chapter 4.2, p.108.

itself, but only as an imitation of those at the level of the *Soul*, which in turn possess the intelligibles as an imitation of *Intellect*. Plotinus asserts that we possess the forms in *Intellect* either as common to all *souls*, or, “particular to ourselves”, because each has the whole of it in the primary part of his *soul*, “written in us like laws” (*Ennead* V.3.4, 2-3); hence comprehension of the link between perception, memory and reasoning rests on the notion that *Intellect* is the primary lawgiver whose laws are substantial number and form, or *logos*.¹⁵⁰

The stimulation of the *soul* awakens the faculty of imagination (*φαντασία*) (*Ennead* VI.8.3), which actively unifies the vibrations (forms) it receives from the various senses to produce a non-extended pictorial image that provides us with conscious awareness of our experiences (*Ennead* IV. 4. 13, 15-17). If the image creates consciousness of an object, it makes sense that it will be one that includes the qualities and quantities associated with the forms. Plotinus proposes:

Imagination is from a stroke of something irrational from outside: and the soul is accessible to the stroke because of what in it is not undivided (*Ennead* I.8.15, 18-19).

In *Intellect* the forms are all together and undivided; however, in the *soul* they are ‘unfolded and separated’ (*Ennead* I.1.8, 1-8) enabling the *soul* to combine or differentiate the features each form contains rolled up within it.¹⁵¹ While the intelligibles in *Intellect* are akin to those in the *soul*, so are the intelligibles in sense objects which it receives in sense perception. If the *soul* is attuned to its own body, they do not have to share a natural frequency because sympathetic resonance also applies if the body has a frequency that is an integral multiple of that which the *soul*

¹⁵⁰ Chapter 3.3, p.79.

¹⁵¹ Chapter 4.1, p.105.

possesses. An example of this would be that a musical note C will be in sympathetic resonance with a note C that is an octave or octaves higher or lower. The assimilation will not affect the *soul*, it simply activates the form or vibration that the soul potentially has within it.

The faculty of imagination is also operative in Plotinus' account of memory (*Ennead* IV.3.29, 31-32) enabling the recognition of objects previously experienced (*Ennead* IV.4.13), and as Remes comments, it provides "a unified stream of consciousness" that temporally connects "past, present and future moments" (Remes, 2007, p.111). However, being conscious of impressions received from the body is meaningless unless we understand what we have perceived, and this requires the faculty of reason operating together with perception and memory. Memory depends on the image produced in sense perception, and as Warren rightly states, "Imagination ... is an intimate link which holds the various operations of the human soul together" (Warren, 1966, p.279); let us now examine how this is achieved.

8.2.2 Reasoning and Memory

Plotinus refers to memory as the past remaining in the present (*Ennead* I.5.8, 1-2), and a memory that may be conscious or unconscious.¹⁵² Unconscious memories include those responsible for habitual behaviour (*Ennead* IV.4.4, 7-14) and are not accompanied by an image, whereas memories must be accompanied by an image if they are to contribute to our temporal conscious experience, and this is Plotinus' primary focus. He proposes, recollection or the *soul's* perception of the forms in

¹⁵² This view of memory is replicated by Bergson. See: Chapter 9.1 pp.255-256; Chapter 9.1.2, pp.263-266.

Intellect, while being a form of conscious memory, must be differentiated from temporal memory consisting of the preservation of images arising from sense perception and discursive thinking. (*Ennead* IV.3.25, 30-35). At its highest level, the *soul* remains undescended in *Intellect* and only acquires a temporal memory when it descends.

Memory is the preservation of images after the sensation has ceased (*Ennead* IV.3.29, 23-26), and like perception, memory is neither an affection of the *soul*, nor are memories stored as mental pictures in the *soul* like physical impressions on wax (*Ennead* III.6.3, 29-31; IV.6.1, 1-4), so how are memories preserved? Blumenthal comments that Plotinus does not provide an account of how the *soul* retains and recalls information from sense perception (Blumenthal, 1971, p.83); however, it will be argued that he does, a view also shared by more recent commentators.¹⁵³ Memory belongs to the image-making power that works with forms; therefore, memory as image recall must also involve forms. It does not mean that images are stored as images, but as forms the imagining power uses to present an image to the mind. This view is confirmed by Plotinus' assertion that memory is a power of the *soul*. He refers to memory as "being in a particular state. And a state is something present, and so is actuality of life". (*Ennead* I.5.1, 3-6):

The soul awakes the power of memory in such a way as to have what it does not have ...it is a passage from potentiality to actuality. (*Ennead* III.6.2, 43-47).

The passage from potentiality to actuality replicates the generative nature of *Intellect*; furthermore, memory is "a stable condition" (*Ennead* IV.3.26, 52-53) and therefore non-temporal in nature, even though it is associated with temporal preservation and

¹⁵³ See also: Chiaradonna, 2015.

recall of sense perceptions. The individual *soul* possesses the impression of the forms in *Intellect* as an imitation but is not conscious of them in the sense that they are “not active, lying apart and unilluminated” (*Ennead* I.2.4, 21-22). Consciousness of them arises when the *soul* directs its attention towards *Intellect* and they come out from within (*Ennead* IV.6.2, 20). As King comments, the individual *soul*: “has objects insofar as it is essentially related to them, not in the sense of having acquired them” (King, 2009, p.115), therefore recollection is not memory that acquires its objects over time; it possesses them *a priori* as potentialities. So, the forms within the intellect of the individual *soul* exist as potentialities and become actualities when they are brought into consciousness (*Ennead* I.1.11, 1-8):

But, being in the middle, it [the soul] perceives both, and is said to think the intelligibles when it arrives at memory of them, if it comes to be near them; for it knows them by being them in a way: for it knows not because they settle in it, but because it has them in some way and sees them and is them in a rather dim way and becomes them more clearly out of the dimness by a kind of awakening, and passes from potentiality to actuality. In the same way [the soul] makes the objects of sense which are, so to speak, connected with it, shine out, one might say, by its own power, and brings them before its eyes, since its power is ready for them, and in a way in travail towards them. (*Ennead* IV. 6. 3, 10-19)

The *soul's a priori* potentialities become actualities by the *soul's* reasoning power, which Plotinus refers to as representing the ‘true man’. Considered as a function of the *soul's* higher aspect, it does not identify itself with the body (*Ennead* I.1.10, 3-10), but has powers found midway between the sensible and intelligible and can therefore direct its attention towards both. Its role is to judge or evaluate the sense data received by the perceptive *soul* by comparing or ‘fitting it’ to the forms in *Intellect*, and therefore differs from sense perception that does not make value judgements but merely identifies an object is there and its qualities:

the reasoning power in soul makes its judgement, derived from the mental images present to it which come from sense perception, but combining and dividing them; and, as for the things which come from Intellect, it observes what one might call their imprints, and has the same power also in dealing with these; and it continues to acquire understanding as if by recognising the new and recently arrived impressions and fitting them to those which have long been within it: this process is what we should call the “recollections” of the soul.
(*Ennead* V.3.2, 8-14)

Plotinus states the reasoning power judges according to the forms in *Intellect*, which act as standards or measures of judgement written into us like laws (*Ennead* V.3.4, 16-19), and as previously explained these laws are those applying to *logos*, substantial number and form, that is, the laws of harmonics. It is suggested that this is confirmed in *Ennead* VI.7, where Plotinus refers to the judgement being possible because the reasoning power perceives them and there is a correspondence or attunement (ἁρμονία) between them:

How, then, is there a power of sense perception in the better soul? It would be a power of perceiving the sense objects there, and would correspond to the sense objects there. This way, therefore, in which the better soul perceives the **melody of sense** [αἰσθητὴν ἁρμονίαν], when the man of the sense-world receives it by sense perception and **comes into tune** [συναρμόσαντος], to the last and lowest degree, with the **melody** [ἐκεῖ ἁρμονίαν] there in the intelligible, and fire is **tuned** [ἐκεῖ ἁρμονίαν] to the fire there, of which that better soul had a perception which **corresponded** [ἀνάλογον] to the nature of the fire there.
(*Ennead* VI.7.6, 1-8) [My emphasis and brackets]

It is noteworthy that Armstrong translates ‘ἀνάλογον’ as correspondence without clarifying that it is proportionate. Plotinus also refers to the judgement made by reasoning in the context of *sympathia*:

Reasoning when it passes judgement on the impressions produced by sensation is at the same time contemplating forms and contemplating them by a kind of

sympathy [συναίσθησις] – I mean the reasoning that belongs to the true soul: for reasoning is an operation of acts of the intelligence, and there is often a resemblance and community between what is outside and what is within. (*Ennead* I.1.9, 18-23) [My emphasis and brackets.]

In this passage Plotinus does not use the word συμπαθεία which means ‘sympathy’; however, Armstrong translates συναίσθησις as sympathy in this context. In in IV.4.8, 20, Plotinus refers to συναίσθησις as consciousness or awareness, and similarly, Aristotle uses the term in the sense of common or shared consciousness (*Eudemian Ethics* 1245b 21-24)¹⁵⁴

Plotinus also notes that we have memories of our thoughts that may, or may not, be accompanied by an image because we are not always conscious of our thinking. Consciousness of the discursive thinking of the rational *soul* must be accompanied by an image, or copy of the thought (*Ennead* IV.3.30, 1-5), while images do not accompany thinking the forms in *Intellect* (*Ennead* 1.4.10, 17-21; IV.6.2, 18-19), hence our inability to remember them as images; however:

Perhaps the reception into the image-making power would be of the verbal expression [*logos*] which accompanies the act of intelligence. The intellectual act is without parts and has not, so to speak, come out into the open, but remains unobserved within, but the verbal expression [*logos*] unfolds its content, and brings it out of the intellectual act into the image-making power and so shows the intellectual act as if in a mirror, and this is how there is apprehension and persistence and memory of it. Therefore, even though the soul is always moved to intelligent activity, it is when it comes to be in the image-making power that we apprehend it. (*Ennead* IV.3.30, 5-13 – brackets mine); see also I.4.10, 6-16)

¹⁵⁴ For an analysis of συναίσθησις in Aristotle, see: Kosman, A., 2014, pp.174-176.

In this passage Armstrong translates *logos* as “verbal expression”; however, it is suggested that it is easier to comprehend if the act of intelligence involves *logos* as substantial number and form, as proposed in Chapter 3.¹⁵⁵ This passage proposes the faculty of imagination (*φαντασία*) is also operative in the reasoning *soul*. In the same way that the perceptive *soul* actively unifies the vibrations (forms) it receives from the various senses to produce a non-extended pictorial image that provides us with conscious awareness of our experiences of sense perception, the reasoning *soul* works with the imagining power to unify the divided *logoi* or forms the *soul* has within its own intellect to make a similar image. Plotinus suggests the imaging faculty acts like a mirror; on one side it holds images from sense perception, and on the other it holds images of the forms the *soul* possesses. Reason makes its judgement by placing one over the other. When the images are ‘in tune’ they form one image; however, if there is “conflict or disharmony” both images remain activated for memory but either one of the images may dominate, depending on whether the *soul*’s, attention is directed to the sensible or the intelligible (*Ennead* VI.3.31, 9-18). For Plotinus, in practical life, most will direct their attention towards the sensible.

The texts support the view that the reasoning power thinks and makes its judgements by comparing forms and images; however, the passage quoted above (*Ennead* IV.3.30.5-13) remains a major source of confusion for commentators. Warren comments on this passage as follows:

The chief difficulty with the text is the translation of the term *λόγος*. Clark follows Bréhier in translating, *la formule verbale*. Harder has *Begriff* (*Wort*); MacKenna, 'verbal formula'; and Guthrie, 'reason'. It seems to us that no one phrase can indicate the entire meaning of *λόγος* here; and if one is forced to attempt a translation, Bréhier's is the most acceptable. (Warren, 1965, p.282)

¹⁵⁵ Chapter 3.4, pp.82-89.

Emilsson also acknowledges a problem with interpreting the meaning of *logos* in this passage and considers the unfolded forms in the *soul* as something like “concepts”, “notions” or “mental representations”, and finally concurs with Armstrong’s translation as “verbal expression” (Emilsson, 1988, p.135). Chiaradonna also claims in this statement the meaning of *logos* is “far from clear” and “the opinions of interpreters greatly vary”, and he suggests “Plotinus ... seems to present *logos* as a thought-structure rather than a verbal expression. More specifically, he regards *logos* as a discursive or predicative unfolding of our higher thoughts”, but he does not explain what these are (Chiaradonna, 2015, p.12). Blumenthal notes that Plotinus uses two terms for the reasoning employed in making judgements, *διανοητικὸν*, thinking discursively, and *λογιζόμενον*, reasoning, and he analyses whether the two terms should be taken as equivalent. He concludes they are but notes that Plotinus refers to them separately at *Ennead* V.3.3, 18-21 (Blumenthal, 1971, pp.100-102). Whilst it is agreed that an analysis of the use of these terms in the *Enneads* is not conclusive, it is helpful to consider that Plotinus states: “intellectual activity is normally accompanied by a mind picture but is not a mind picture” (*Ennead* I.4.10, 20-21), which suggests two kinds of intellectual activity of the reasoning soul as described in *Ennead* V.3:

soul is a kind of intellect in that it is discursively intelligent – it has its power through and from Intellect. ... it comes to know what it sees and knows what it speaks ... it is a rational principle and receives things akin to it, and fits them to the traces in itself. (*Ennead* V.3.6, 20-28)

At V.3.3 Plotinus states that:

... sense-perception sees a human being and gives its impression to discursive reason [διάνοια]. What does reason say? It will not say anything yet, but only knows, and stops at that; unless perhaps it asks itself “who is this? If it has met the person before, and says, using memory to help it, that it is Socrates. And if it

makes the details of this form explicit, it is taking to pieces what the image-making power gave it. (*Ennead* V.3.3, 1-7. Brackets, mine.)

As Blumenthal notes, later in the same section, Plotinus makes a clear distinction between διανοητικὸν and λογιστικὸν when refers to the *soul* reasoning on the illumination from *Intellect*:

... it must be soul that is engaged in reasoning [λογισμοῖς]; and all this is the work of the reasoning [λογιζομένης] power. ...But if someone were to say “What prevents this part of the soul from observing what belongs to itself by another power? He is not looking for the power of discursive reasoning [διανοητικὸν] or rationality [λογιστικὸν], but in grasping pure Intellect. (*Ennead* V.3.3, 14-7. Brackets, mine.)

Liddell Scott translates λογισμοῖς as ‘counting’ or ‘calculation’, and Armstrong translates λογιζόμενον as ‘calculation’ in *Ennead* IV.12, where the subject is addressed at length, and where Plotinus asks:

For what else could calculation be but the effort to find intelligence and reason which is true and attains the truly existent? (*Ennead* IV.12, 6-8)

Therefore, it makes sense to consider διανοητικὸν as thinking in concepts, i.e. words or images, facilitated by the imaging power of the *soul*, and λογιζόμενον (or any form of reasoning where λόγος appears to be the root), as reasoning that specifically addresses *logos* as substantial number and form, as explained in Chapter 3. This is consistent with a theory that is based on harmonics and vibrations, especially, as was noted in Chapter 7, that for the Pythagoreans, *logismos* is a form of *harmonia* or rational calculation, where opposites are fitted together using numbers or proportions to provide knowledge and understanding about the world, as well as forming the basis of ethical action.¹⁵⁶

¹⁵⁶ Chapter 7.2, pp.217-218.

Without mentioning it explicitly, Plotinus provides a further clue to the nature of rationality involved in λογίζομενον when he refers to the musician who is naturally disposed to the beauty of the intelligibles, but he begins with sounds and rhythms perceived by the senses:

He must be led and taught to make abstraction of the material element in them and come to the principles from which their proportions and ordering forces derive and to the beauty which is in these principles, and learn that this was what excited him, the intelligible harmony and the beauty in it, and beauty universal, not just some particular beauty, and he must have the doctrines of philosophy implanted in him; by these he must be brought to firm confidence in what he possesses without knowing it. (*Ennead* I.3.1, 30-35)

By stripping away the material element in sound, the musician arrives at “the principles from which their proportions and ordering forces derive”. In effect he wants the musician to understand the numbers associated with harmonics. Panaiotidi suggests music has worth for Plotinus “only as a means of ascent to a higher reality, and this capacity is grounded in its mathematical nature” (Panaiotidi, 2014, p. 409). This also explains why Plotinus considers training in mathematics to be essential for the philosopher, a training that must occur before dialectic. He states in ‘On Dialectic’:

He [the philosopher] is by nature virtuous, and must be brought to perfect his virtues, and after his mathematical studies instructed in dialectic, and made a complete dialectician. (*Ennead* I.3.4, 8-9)

He continues to describe dialectic as the process of consciously rising to *Intellect*:

It is the science which can speak about everything in a reasoned and orderly way, and say what it is and how it differs from other things and what it has in common with those among which it is. (*Ennead* I.3.4, 2-4)

Dialectic distinguishes what is true and good from what is not, but, importantly, it is a process of collection, division and definition of the contents of *Intellect*, thus following Plato's account of dialectic in the *Phaedrus* in which he describes collection and division "as aids to speech and thought" (*Phdr.*265b3-266c1, in Fowler, 1914, p.535). It therefore makes sense that for Plotinus λογιζόμενον, the fitting together of musical ratios and the forms associated with them, is what he refers to as theoretical wisdom, which precedes, and is an 'aid' to διανοητικόν, discursive thinking, or practical wisdom, but both are necessary. One must be able to ascend to a higher level of *soul* or even *Intellect* itself to make a judgement based on *harmonia*, or the fitting together of opposites, before being able to speak or think about it discursively as words or images, which is a descending movement because it is directed towards external objects (*Ennead* V.3.2-3). The idea of 'before and after' must be considered as one of priority in Plotinus' *kairos* rather than having a temporal context.

While the explanation here potentially resolves the difficulty perceived by commentators, it is speculative and not exhaustive; hence further in-depth analysis of how Plotinus uses διανοητικόν and λογιζόμενον in the *Enneads* is warranted, not only for clarification for those commenting on Plotinus' psychology, but it could be significant for anyone translating the *Enneads*.

The operation of sense perception, reasoning and memory can therefore be summarised along these lines: sense perception becomes conscious of an object by unifying the forms it receives from the senses using the imagining power to form a qualitative image. To judge the nature of the image from sense perception, reason divides the image into its appropriate forms and makes an initial movement towards *Intellect* (recollection) with which it is in tune, and *Intellect* makes it conscious, or activates the forms the *soul* possesses potentially in a divided state. The imaging power

then generates an image from those forms by combining them. Once activated, the forms serve as memory and are ready for future use (*Ennead* IV 6 3, 58-59). The reasoning power compares the forms and image from sense perception with those activated in itself to provide knowledge about the object. The activated forms may be recalled by the reasoning power to make its judgement when the same or similar forms are encountered again in sense perception or discursive reasoning, and the power of memory is ‘strengthened’ with repetition (*Ennead* IV.6.3, 39-40), making recognition much faster because reasoning does not need to search all the potentialities in the *soul*. This is the accepted interpretation by recent commentators;¹⁵⁷ however, a modern metaphor may be helpful to clarify Plotinus’ meaning: a computer’s hard drive contains all the information that is potentially available for us to access, and if a word or filename is typed into the computer for the first time, it will search its hard drive to find the file or files most fitting to the search entry. Having selected a file and opened it, the computer stores the file as a temporary file in its active memory, meaning that any future access to that file will be much quicker. There is no need to search the whole hard drive again. The metaphor is not quite correct, though, because the computer does store temporary files in its active memory, whereas for Plotinus, there is no separate storage of memory, just an activation of potentialities, as if they are switched on in temporal order and are ready to use immediately, with the most recent being the most accessible. The beauty of his theory is that it provides an account of memory that retains its stability, that is, it preserves significant perceptions unchanged because it is an activation of a potentiality. The storage of memory does not become an issue because memory is not something acquired, and memory retrieval is simply the reasoning faculty accessing forms already activated.

¹⁵⁷ King, 2009; Emilsson, 1988; Chiaradonna, 2015

Having established the mechanism by which the reasoning power judges and remembers its experiences, it is now pertinent to clarify how Plotinus interprets the freedom of the individual *soul*.

8.3 The Freedom of the Individual Soul

The concept of freedom as ‘ἐφ’ ἡμῖν’, or ‘that which is in our power’, ‘that which is in our control’, or ‘that which depends on us’, as explained in respect of the *World Soul*, is also important for understanding human freedom. Plotinus refers to it in: ‘On Well-Being’ (*Ennead* I.4), ‘On Destiny’ (*Ennead* III.1), ‘On Providence (I)’ (*Ennead* III.2), ‘On Numbers’ (*Ennead* VI.6) and ‘On Free Will and the Will of the One’ (*Ennead* VI.8). It is a subject analysed in depth by several commentators who tend to agree in their interpretations.¹⁵⁸ Of particular interest is that of Eliasson, who has placed it within its historical context and conducted a helpful review of the various interpretations of its use in the *Enneads*, classifying them under the headings of ‘Freedom’, ‘Free Choice’, ‘Free Will’, ‘Free Action’, and ‘Self Determination’ (Eliasson, 2008, pp.27-42). The most detailed account of ἐφ’ ἡμῖν in the context of human life given in *Ennead* VI.8, ‘On Free Will and the Will of the One’, which is also highly relevant for understanding its relationship to knowledge:

Everything is a voluntary act which we do without being forced to and with knowledge [of what we are doing], and in our power which we are also competent to do. (*Ennead* VI.8.1, 33-34)

¹⁵⁸ Eliasson, 2008; Leroux, 1996; Ousager, 2005; Remes, 2007; Westra, 1990; Westra, 2002

If one of these attributes is missing an act is not within our power. For action to be voluntary it happens because we wish it and with nothing opposing our wishes; it cannot arise from “opposing chances . . . , compulsions and strong assaults of passions possessing our soul” (*Ennead* VI.8.1, 28-30). Plotinus states, while the body receives many incidental impressions from its physical environment, the *soul* only becomes conscious of those to which its attention is directed (*Ennead* IV.4.8, 1-17). Remes, referring to *Ennead* IV.4.8, 17-20, comments in this respect there is a “voluntary element”, an element of choice in that the *soul* selects the forms that will ultimately form an image on the basis that they are significant for us (Remes, 2007, p. 113); however for Plotinus, the ability to choose sense objects does not make the *soul* free if the motive of action is an unreasoned need or compulsion arising from an exterior source. In his account of sense perception, action based on unreasoned images is merely opinion resulting in the enslavement of living beings to the sense world. Opinion is: “What we call thinking falsities . . . making of mind pictures which has not waited for the judgement of the reasoning faculty” (*Ennead* I.1.9, 8-9), and therefore has not taken the intelligible truths into account. Warren explains:

It is precisely the possession of and knowing through images that distinguishes human knowledge from the knowledge of Nous; for the human being possesses images rather than the objects themselves and, consequently, can never have truth but only opinion. (Warren, 1966, p. 279)

Plotinus suggests that action based on mistaken belief or ignorance is not considered voluntary; the knowledge accompanying a particular act must “apply in particular circumstances” and “generally”; “generally” here meaning what we ‘ought’ to do in the situation. “Not knowing that one ought to have learnt it is not voluntary, nor is what leads one away from learning” (*Ennead* VI.8.1, 39-45).

In *Ennead* VI.8.2, Plotinus suggests calculation and impulses, or desires not driven by ‘lust’ or ‘passion’, are also not in our power if the calculation accompanying the desire is wrong, for example, the desires and impulses of children, wild animals, individuals with mental illness, and those under the influence of drugs. If the calculation is right we cannot say whether the motivating force was the calculation or the desire; and if the desire is of the composite living being, that is, *soul* with body in accordance with nature, “the soul followed the necessity of nature”; and if it is purely a desire of the *soul*, “many of the things which are now said to be in our power will be outside it”. Similarly, if we feel compelled by the imagination, or if desire pulls or leads us, and whenever the motivating force does not originate from ourselves. Plotinus then proceeds to examine the question of knowledge, dismissing knowledge from sense perception alone because it is merely based on a bodily affection. Knowledge of a situation does not itself lead to action and ἐφ’ ἡμῶν does not mean action effected by rationally overcoming desires with another desire.

Ennead VI.8.3 continues the examination of knowledge in terms of its rationality. Action based on opinion, even if that opinion is right, is not founded on right reasoning if the person does not know why his opinion is right; this is pure chance. Opinions resulting in action based on chance and imagination arising from bodily experiences are not within our power. He only defines voluntary or truly free action as that derived from the activity of *Intellect* (*Ennead* VI.8.3, 19-23).

Ennead VI.8.5 addresses freedom of the *soul* in its two aspects, the first of which contemplates *Intellect*, and the second, its engagement in practical action and virtue. What does Plotinus mean by virtue? He proposes two kinds of virtue; the first are civic virtues which “give limit and measure to our desires, and putting measure into all our experience, hence they abolish false opinion”; and these depend on the second type,

which he refers to as “greater virtues” being “a measure which forms the matter of the soul” (*Ennead* I.2.2, 14-19). The matter of the *soul* must be understood as its ‘intelligibles’, substantial number and form as an imitation of *Intellect*, and which act as measures for reason when deciding on practical action.

Virtue is a kind of other intellect, a state which in a way intellectualises the soul, ... being in our power does not belong to the realm of action but in intellect at rest from action. (*Ennead* VI.8.5, 34-37)

He claims virtuous action is dependent on external situations, for example, brave action in war depends on there being a war; however, if the action arises from will or reason that compels us to certain action, we can say that freedom resides in virtue prior to action. Virtue is wishing and choosing the good. In *Ennead* VI.8.6 and 7, Plotinus asserts being in our power rests within the province of virtue and *Intellect* because they “have no master”. While *Intellect* is independent in itself, “virtue wishes to be independent by supervising the soul to make it good”. When things happen that have not been wished for by the *soul*, it will not respond emotionally to what is occurring outside, but will refer to virtue to guide its action:

The soul ... becomes free when it presses on without hindrance to the Good by means of Intellect, and what it does through this is in its power. (*Ennead* VI.8.7, 1-3)

Reason in its highest form is then, for Plotinus, ascending to *Intellect* and contemplating *Intellect* by becoming one with it and remaining there, and this is ultimately what is in our power. This cannot be achieved in practical life, because the *soul* does not remain in *Intellect*; it must act, and the succeeding action, even one arising from reason, “cannot have being in our power in a pure state” because it is

“mixed”, where ‘mixed’ means a combination of internal and external action (*Ennead* VI.8.2, 37-38).

In summary, from the formation of the image in sense perception that gives conscious awareness of external objects or events, the succeeding action is based on different types of knowledge: opinion; the greater virtues in the *soul* that form the basis of civic virtues; and true knowledge, formed when the *soul* takes its knowledge directly from *Intellect*. The third type of knowledge is only available to the wise, who contemplate the forms there while living a corporeal life, but not allowing the external world to influence their action.

In *Ennead* III.6.2, Plotinus presents his arguments for the notions of virtue and vice, a view that “accords with the view of the ancients”. Armstrong provides a footnote clarifying his reference to “the ancients” as “the Pythagoreans; cp. Plato, *Phaedo* 93c”.¹⁵⁹ Plotinus explains that for the ancients, virtue was considered to be a harmony of the *soul*’s powers which bring nothing in from the outside; whereas vice is disharmony, which is evil when reason may not function to its full potential because it may be overridden by another faculty such as desire.

Conclusion

This chapter examined Plotinus’ concept of time, the life of the *soul*, as *kairos*, both in its application to the *World Soul* in the making of the external world, and to the individual *soul* in its interaction with its corporeal environment. In both instances *kairos* is contemplation, a contemplation that is paradoxical because it is at once a

¹⁵⁹ *Ennead* III.6.2, Armstrong’s fn. p.214

necessary process and an act of freedom or ἐφ' ἡμῖν, as Plotinus defines it. The *World Soul* fulfils the requirements for ἐφ' ἡμῖν because it is not under outside influence, what it makes is within its power and its knowledge is right knowledge or wisdom because it contemplates the forms in *Intellect*, the *Beings* of eternal truth. We find the same definition of freedom in the individual *soul* for whom the goal is the *Good*.

In analysing Plotinus' psychology, the key concepts implicated in *kairos* include sense perception, memory, reason, and freedom. Plotinus appropriates the concept from its Pythagorean origins and is rational-ethical. *Kairos* is not a static moment for Plotinus because deciding action appropriate to the circumstances involves a movement from the material world to contemplation of the forms that the individual *soul* possesses in itself, or ideally those in *Intellect*. The function of sense perception, memory and reasoning all depend on Providence because it endows the human *soul* with everything it needs to become free because virtuous actions are “not done by providence but according to providence: for it is in tune with the rational principle” (*Ennead* III.3.5, 47-49). Providence enables us, with the appropriate training, to think like *Intellect*, that is, to think substantial numbers and forms, or as has been argued, to think and act according to the laws of harmonics.

The model of harmonics once again has the potential to resolve ambiguities in the text and overcome two important difficulties experienced by commentators; his theory of sense perception as *sympathia* and the role of λογιζόμενον and διανοητικόν in the activities of the reasoning *soul*; however, both warrant further investigation due to the limited scope of the analysis presented here.

The concept of *kairos* in the *Enneads* is ultimately dependent on the model of harmonics that has the ability to unite Plotinus' cosmology and psychology, thus transforming our understanding by making sense of Plotinus' philosophy as a complete

system. It also suggests that the Pythagorean influence is more important than previously recognised.

The next Chapter will continue to examine the concept of *kairos* in the context of Bergson's psychological duration.

Chapter 9

Bergson and *Kairos*

*

Introduction

J.M. Gabaude, in his article, *Éclairage Sur Le Kairos A Partir De La Philosophie De Bergson*, suggests: "... by appealing to *kairicity*, it is possible to shed light on certain features of Bergson and, conversely, he enables clarification of *kairos*." He refers to Vladimir Jankélévitch who considered *kairos* as "implicit in marrying the key elements" of Bergson's philosophy (Gebaude, 1991, p.349). Bergson has therefore been recognised as a philosopher of *kairicity* in French language articles, and while it has been discussed in very general terms, it has been relatively unacknowledged in the English language secondary literature.

This Chapter aims to provide a deeper understanding of the relevance of *kairos* to Bergson's philosophy and will explain how he utilises this ancient concept as one that is dynamic and generative in his theories of perception and memory as proposed in *Matter and Memory*, and how it is intimately connected to his understanding of individual freedom as proposed in the *Two Sources of Morality and Religion*. Finally, it will be proposed that *kairos* in Bergson's philosophical method may have been inspired by ancient Greek rhetoric under the influence of the Pythagorean tradition.

9.1 Perception, Memory, and *Kairos*

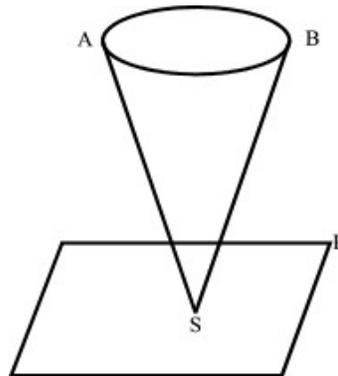
Gebaude refers to *kairos* as “a highlight” in psychological life, “a critical threshold, a nodal point of fact, a significant note of the ‘continuous melody of our inner life’; melody which does not differentiate between before and after, and without having a punctual present” (Gebaude, 1991, p.356), which means it must not be considered a mathematical point in time because it is a moment in which the past, present and future coincide. In *Mind-Energy* Bergson describes consciousness in terms that capture the essence of the mythological depiction of *Kairos* in ancient Greece.¹⁶⁰

To retain what no longer is, to anticipate what as yet is not, - these are the primary functions of consciousness. For consciousness there is no present, if the present be a mathematical instant. An instant is the purely theoretical limit which separates the past from the future. It may, in the strict sense, be conceived, it is never perceived. When we think we have seized hold of it, it is already far away. What we actually perceive is a certain span of duration composed of two parts – our immediate past and our immediate future. We lean on the past, we bend forward on the future: leaning and bending forward is the characteristic attitude of a conscious being. Consciousness is then, as it were, the hyphen which joins what has been to what will be, the bridge which spans the past and the future. (‘Life and Consciousness’, in M.E., p.8-9)

Kairos is exemplified in Bergson’s illustration of the cone (Figure 21) in *Matter and Memory* (M.M., p.197, Figure 4).

¹⁶⁰ Chapter 7.1, p.212.

Bergson's Cone Illustration (Figure 21)



In the above illustration, S represents the “nodal point of fact” or “significant note of the continuous melody of our inner life”, as referred to by Gebaude. It represents perception, or what Bergson refers to as “both a perception of the immediate past [memory] and a determination of the immediate future [matter]” (M.M., p.177), and a synthesis or coincidence of opposites defined by Bergson as pure perception (P) and pure memory (AB) that act as limits representing differences in kind. Each of these concepts will be examined in turn; however it is important to note that once again Bergson employs the generative structure of Pythagorean cosmology’ differentiation and integration, where integration or *harmonia* generates novelty, a harmonic, and represents the moment of *kairos*.

9.1.1 Pure Perception

In Chapter 1 of *Matter and Memory* Bergson begins his account of perception by proposing a theory of ‘pure perception’ that he defines as:

a perception that exists in principle rather than in fact, and would be possessed by a being placed where I am, living as I live, but absorbed in the present, and which is capable, through the elimination of memory in all its forms, of obtaining a vision of matter both immediate and instantaneous. (M.M., p.26)

Pure perception is therefore a hypothetical construct that eliminates the influence of memory, even though this never happens in fact. Bergson denounces realism and idealism for failing to capture the nature of matter as we experience it, and proposes a compromise, a theory based on common sense, that matter is constituted by what he calls an “aggregate of images”:

And by ‘image’ we mean a certain existence which is more than that which the idealist calls a *representation*, but less than that which the realist calls a *thing*, - an existence placed half-way between the ‘thing’ and the ‘representation’.
(M.M., p.vii-viii)

Bergson suggests extended matter exists as images that are present merely as a picture; a surface that does not have determined outlines, but which emits light consisting of colours that blend into each other, like a work of art that has depth or a reflection in a mirror. The images are not inert and spatially extended because at its fundamental level matter is nothing more than a “pervading concrete extensity, modifications, perturbations, changes of tension or energy and nothing else” (M.M., p.266), an unlimited field of energy in which varying vibrations or durations coexist and reciprocally interact with each other in a dynamic and undivided continuity. He regards the dynamic nature of matter as *extensive* such that matter is these vibrations rather than vibrations extended in a spatial medium. There is no perceiving subject or mechanism that translates the vibrations into qualities because the vibrational aspect of matter is present in the colours, just as red light is a specific wavelength on the electromagnetic spectrum, or, as Lawlor comments, ‘just as when we strike a key of the

piano at the low end of the scale, we hear the note and can see the vibrations of the string' (Lawlor, 2004, p.7). As was explained in Chapter 5 consciousness and matter develop in succession as two individual *élans*,¹⁶¹ hence matter generates harmonics within itself that represent qualitative differences external to the perceiving subject. Guerlac explains that images are not produced by us, but they are images of things (Guerlac, 2006, p.117). Bergson therefore follows Plotinus in rejecting any notion of subjective idealism because matter has an existence independent of the consciously perceiving subject.¹⁶²

Bergson claims the body is an image amongst images that interacts with its environment according to mathematically determined laws and which apply to physics in its “remotest aspirations” (M.M., p.260). It was argued in Chapters 5 and 6 that Bergson understood the mathematics underpinning the physics of waves as studied in acoustics and optics, and to which the concepts of harmonics, sympathetic resonance, interference, both constructive and destructive, as well as reflection and refraction were considered basic.¹⁶³ In his account of pure perception, it was these laws that Bergson appropriated to matter long before the notion that matter behaves like a wave was proposed by Louis de Broglie in 1924, as he notes later in *The Creative Mind* (C.M., p.71). Bergson claims in pure perception the body isolates an object by suppressing other objects that have no interest for it (M.M., pp.28-29). It does this by *reflecting* other images so that “pure perception stands towards matter in the relation of part to whole” (M.M., p.78); hence there can only be a difference in degree, and not a difference in kind, between matter and pure perception (M.M., p.19; p.24). Bodies

¹⁶¹ Chapter 5.3, pp.159-160.

¹⁶² Chapter 8.2.1, p.232.

¹⁶³ For references, see: Chapter 5.3 p.164; Chapter 6.6, p.207-208.

“allow to pass through them... those external influences which are indifferent to them; the others become ‘perceptions’ by their very isolation” (M.M., pp.28-29). He states:

everything thus happens for us as though we reflected back to the surfaces the light which emanates from them, the light which, had it passed on unopposed, would never have been revealed” (M.M., p.29).

Bergson suggests that when light passes from one medium to another the light is refracted; however, the densities of the media may be such that there is total reflection, in which case an outlined image is formed indicating possible or virtual actions of the body in space. He is drawing on the physics of light and the law of ‘reflection’ that occurs when objects stand out because the frequencies of light waves of the object *do not* match the natural frequencies of light shining on it. For Bergson, a body is an image itself and therefore vibrational, so for example, if the object is emitting all the colours of the spectrum and the body lacks red light, red light will be reflected onto the object while the other colours will pass through the body or be absorbed because the body would vibrate in sympathetic resonance with them and they will not stand out. Bergson appears to interpret the body’s ‘lack’ as a condition of need or interest that isolates objects because our needs are “so many search-lights which, directed upon the continuity of sensible qualities, single out in it distinct bodies” because the need is reflected in the object (M.M., p.262). Behind the object there is a virtual world of matter that remains unperceived. Unlike Plotinus who employs *sympathia* in terms of sound vibrations to reveal similarities, Bergson applies it to light vibrations to reveal differences in the continuity of matter thus accounting for individuation and the creation of the other.¹⁶⁴ Either way, resonance is the principle that explains the

¹⁶⁴ See: Mullarkey, 2004, p.478

perception of an external object and the law of reflection enables Bergson to claim, as does Plotinus, that the pure perception of an object occurs in the object itself; not in us, because we do not project unextended sensations outside ourselves:

... my perception is outside my body, and my affection within it. Just as external objects are perceived by me where they are, in themselves and not in me, so my affective states are experienced there where they occur, that is, at a given point in my body. (M.M., p.59)¹⁶⁵

Let us now consider the mechanics of the body in pure perception. He suggests that the body does not only reflect external images:

It struggles and thus absorbs some part of this action. Here is the source of affection. We might therefore say, metaphorically, that while perception measures the reflecting power of the body, affection measures its power to absorb. (M.M., p.57)

Having isolated an object by reflecting on it, Bergson proposes that each of the qualities perceived in an object by the different sense organs are determined by a particular need or direction of activity (M.M., p.46). He refers to the sense organ as analogous to:

An immense keyboard, on which the external object executes at once its harmony of a thousand notes, thus calling forth in a definite order, and at a single moment, a great multitude of elementary sensations corresponding to all the points of the sensory centre that are concerned. (M.M., p.165)

The vibrations received are separated according to the frequencies that each sense organ can receive and then travel via the nerves to the brain, which analyses and

¹⁶⁵ On this point, see: Lacey, 2008, p.84.

chooses the appropriate motor response of the body and sends the appropriate vibrations through the spinal cord to stimulate physical movement. The function of the brain is to allow communication or delay it (M.M., p.30), hence it merely receives and transmits vibrations; it does not make representations or speculate, because it is only a material image amongst others. For Bergson the brain is not an instrument of knowledge, but an instrument of choice, and, like Plotinus, he considers the body, a centre of action and sensation (M.M., p.178). He describes sensation as: “in its essence, extended and localized” (M.M., p.180) and “that which must be subtracted from perception to get the image in its purity” (M.M., p.60). In pure perception, the object, the sense organ and the nerves that stimulate action form a continuous whole, and while the body is the point of contact with the rest of matter, sensation admits a distinction between the body and external objects because it is internal to the body while perceptions are external (M.M., p.42; p.63). Sensation is the real action of matter and represents the immediate past, while perception reflects possible action and represents anticipation of the immediate future. Pure perception is wholly in the present, not as a mathematical instant, but is simultaneously the immediate past and immediate future, which he describes as consisting in an impending action, in an energy not yet spent (M.M., p.185) or unused; however, he suggests “we have no grasp of the future without an equal and corresponding outlook over the past” (M.M., pp.69-70). Bergson claims the choice of possible actions and continuity of perception requires past experience and therefore memory, and since he thinks of it as a melody, he concurs with Aristoxenus who proposed that the “understanding (*xynesis*) of music arises from two sources, perception and memory; for one must perceive what is coming

into being, and remember what has come into being” (Aristoxenus, *Elements of Harmonics*, 38.27-39.3).¹⁶⁶

9.1.2 The Preservation of Memories

Bergson argued that the physics of Kelvin and Faraday can only lead to the hypothesis that matter is ontologically dynamic (M.M., pp.265-266) and he suggested that the internal nature of matter is vibrational and therefore repetitive. While matter simply repeats the past, a being that evolves creates something new at every moment (M.M., p.297) and memory is vital for continuity in the creative process as well as implementing choice and freedom of movement (M.M., p.69-70). He states: “With the immediate and present data of our senses we mingle a thousand details out of our past experience” (M.M., p.24); hence “the reaction does not take place without an appeal to the memories which analogous situations may have left behind them” (M.M., p.69). So how are memories preserved and recollected?

In Chapter 6 it was noted that *élan vital* is generated as a supra-conscious memory that possesses all degrees of consciousness, including intellect, instinct, intuition, as well as the latent consciousness of unorganised matter and the sleeping consciousness of immobile vegetable matter. According to the model of the generation of harmonics “the past is preserved by itself, automatically” (C.E., p.5), and we find that the same model accounts for the preservation and recollection of our individual memories. Bergson said that his aim in *Matter and Memory* was to overcome the Cartesian dualism of extended matter and unextended mind by establishing the

¹⁶⁶ Chapter 2.4, p.53.

distinction between them in terms of time, not space (M.M., p.294), and he achieves this by integrating them under the concept of consciousness that has a durational or vibrational nature. This is an ontological claim rather than an interpretive description because he believes that since the physics of his day considered matter as vibrational, the same concept must explain the durational and substantial nature of consciousness. Only the notion of tension or vibration can reconcile matter and memory, or physics and metaphysics. This reconciliation occurs in perception to facilitate the integration of individual consciousnesses or mind with a material body and other material objects when the individual consciousness condenses the vibrations of matter within its own vibration, a condensation that occurs on the basis of attunement, or “correspondence” between them.¹⁶⁷ Underlying the concept of “correspondence” is the notion that there are differences in number behind our distinctions of quality” (‘Introduction II’, in C.M., p.58-59); hence Bergson’s assertion that consciousness “stores up the past by the necessity of its own nature” (M.M., p.92). The past is retained as two types of memory; the first is a “quasi-instantaneous memory” (M.M., p.197) or habit that tends to be non-representational, unconscious, and consists in the mechanical repetition of bodily movements or cue reactions to objects perceived in the present. It is directed to action and therefore the future; hence it does not conserve images of the past but “prolongs their useful effect into the present moment” (M.M., p.93) by acting them.

Bergson refers to the second type of memory as “spontaneous” memory or “true memory” (M.M., p.195) that is represented by the cone in his illustration. While he refutes the notion that memories are stored in the brain, he reluctantly acknowledges that they are in the mind (‘Soul and Body’, in M.E., p.68). Perceptions are duplicated once in memory as a virtual mirror image or reflection of actual perception (M.M.,

¹⁶⁷ See Chapter 6.1, p.175.

p.165) and he appears to suggest that true memory records present perceptions as memory-images:

[It] records, in the form of memory-images, all the events of our daily life as they occur in time; it neglects no detail; it leaves to each fact, to each gesture, its place and date. (M.M., p.92)

For Bergson a memory-image is a mixture of memory and the image of pure perception because neither exists alone; perception always consists of both; however, just as in pure perception where images are vibrational without clearly defined outlines in space, memory-images are also vibrational but without limits in time. So, while memories are recorded as memory-images, they are not stored as isolated images in pure memory because they are always attached to what preceded and what followed them; they are “a succession of states each one of which announces what follows and contains what precedes” (‘Introduction to Metaphysics’, in C.M., p.163). Pure memory is “coextensive with consciousness” and is the survival of the past as a totality of life experience. Bergson claims pure memory contains virtual memories that are powerless and unchanged (M.M., p.163), and is a memory that is revealed in our character (M.M., p.191), becoming larger as life advances:

[it] retains and ranges alongside of each other all our states in the order in which they occur, leaving to each fact its place and, consequently, marking its date, truly moving in the past and not, like the first, in an ever renewed present. (M.M., p.195)

Therefore, at the other extreme of pure perception and habit memory, which is sensori-motor and aimed at action in space, pure memory is the past, detached from life, and like unperceived matter has a virtual, powerless or unconscious existence because it no longer acts. Deleuze remarks:

We have great difficulty in understanding the survival of the past in itself because we believe that the past is no longer, that it has ceased to be. We have thus confused Being with being present. Nevertheless, the present *is not*; rather, it is pure becoming, always outside itself. It *is not*, but acts. Its proper element is not being but the active or useful. The past, on the other hand, has ceased to act or to be useful. But it has not ceased to be. Useless and inactive, impassive, it IS in the full sense of the word. It is identical with being in itself. (Deleuze, 1991, p.55)

It is important to clarify that in the above quotation Deleuze is referring to “being present” in terms of “the present “, i.e. “now” as a point in time, which he rightly refers to as “becoming” not “being”. If, as Bergson claims, that pure memory is revealed in our character, it has ontological presence in the present, the moment of *kairos*, which is a synthesis of pure perception and pure memory. Deleuze refers to the unchanging existence of memories as an “ontological memory” and “a pure being of the past” (Deleuze, 1991, p. 59). While each individual consciousness has its own personal pure memory, pure memory extends beyond the individual in the form of the *élan vital*; an impersonal supra-consciousness that contains all individual histories or memories, as well as matter in itself. Bergson can therefore claim it to be supra-conscious because is constituted from all degrees of consciousness. It therefore possesses the presence of its past in its entirety, thus replicating the unchanging nature of Plotinus’ *Intellect*, a similarity noted by several commentators.¹⁶⁸ From the perspective of Plotinus, this is accurate for most of the individual *souls* who are unconscious of *Intellect*, and it must also be acknowledged that while Plotinus does not refer to *Intellect* as memory, he

¹⁶⁸ See, for example: Gale, 1973-1974; Lovejoy, 1912; Maritain, 1968, p.236; Taylor, 1911, pp.101-107

states: “intellect has the memory of its products in itself” (*Ennead* V. 3. 8, 53).

Intellect is not a memory that evolves in time as Bergson’s does:

the whole of history might be contained in a very short time for a consciousness at a higher degree of tension than our own, which should watch the development of humanity while contracting it, so to speak, into the great phases of its evolution. (M.M., p.275)

For Bergson memory-images are only actualised in perception through a process of recognition and recollection.

9.1.3 The Recognition and Recollection of Memories

Bergson applies the principles of gestalt to his theory of perception. These principles describe how the human mind fills in gaps between elements to perceive a complete image so that the whole is perceived first. The object is constructed by the mind not seen by the eye. For Bergson, pure perception perceives matter in its most simplistic form that excludes familiarity, while the mind or memory fills in the details and creates a sense of familiarity and meaning from what is perceived. Perception is therefore an act of creation or invention.

In the fourth Chapter of *Matter and Memory* Bergson states that “it is from the present that comes the appeal to which memory responds” (M.M., p.197); however, he suggests “in most cases recollection emerges only after the perception is recognised” (M.M., p.107):

the ordinary feeling of recognition has its root in the consciousness of the organisation of motor accompaniments. We act our recognition before we think it. (M.M., p.93)

Recognition therefore has two aspects: Bergson defines the first as recognition by inattention that produces a feeling of familiarity arising from the consciousness of sensations and impending automatic bodily reactions; the second is attentive recognition that “requires the regular intervention of memory images”, which seem to repeat the present perception (M.M., p.118). The two types of memory are complementary and mutually supportive (M.M., p.112-113). While habit memory associated with the attitude of the body can inhibit the realisation of spontaneous memory, it is also encourages recognition within spontaneous memory because any relaxation of the inhibition will encourage pure memories that fit into this attitude (M.M., p.114); hence it is the sensory-motor apparatus that effectively materialises memories. In perception there is a moment of delay or hesitation between the brain receiving and transmitting vibrations, thus providing an opportunity for the transmission of automatic movements to be overridden, and for consciousness to choose how to react; a choice that is made actual by the brain under the influence of memory. This requires an effort of consciousness to suppress immediate action and to venture into the past in general to facilitate the recognition of memory images that could fit into the present attitude of the body (M.M., p.114). While Bergson refers to the process of attentive recognition as an intellectual act of interpretation or reasoning accompanied by a feeling of effort, it is helpful to remember, as Lawlor remarks, that attentive recognition is Bergson’s method of intuition which he only develops in later work (Lawlor, 2004, p.50). Intuition is an act of sympathy that provides knowledge of its object in terms of its internal vibration and which produces an affective disposition or sense of meaning that facilitates the determination of differences in kind. We find an example of attentive recognition in *Mind-Energy* where he describes how some chess players are able to play several games at once without looking at the boards.

Bergson suggests that they mentally retain the power of the pieces as a “composition of forces” and “remake the history of the game from the beginning” as “a reciprocal penetration of all the elements” such that it is grasped “as a musician grasps a chord” (‘Intellectual Effort’, in M.E., p.198). Attentive recognition takes memory as a heterogeneous composite of vibrations over time, which Bergson describes as a “dynamic scheme” that is generated prior to the formation of the image (‘Intellectual Effort’, in M.E., p.196), hence it is a formative idea that lacks extension or direction, being only an “expectation of images” (‘Intellectual Effort’, in M.E., p.227). While inattentive recognition operates according to the law of similarity or sympathetic resonance, attentive recognition operates according to the laws of similarity and contiguity because its function is to consider the circumstances that preceded, accompanied and followed a past situation in order to “understand the present and anticipate the future”. Bergson refers to association by similarity as the “means” of achieving this while association by contiguity is the “end” (‘False Recognition’, in M.E., p.176-177). Therefore, as McNamara points out, we must not consider attentive recognition to be purely the sympathetic resonance of individual qualities (McNamara, 1999, p.37), though this may occur. While the memory must be acted by the body and thought by the mind concurrently, the dynamic scheme must ‘harmonise’ with the perception, rather than resonating with it in a precise form, though harmonisation is ultimately dependent on resonance. In ‘Dreams’, Bergson provides the example of rapid reading, and suggests that we only perceive a few letters or words of a sentence while the remainder is produced by the externalisation of memories, the meaning of which appears to harmonise with the letters or words perceived (‘Dreams’, in M.E., pp.119-120). Bergson proposes that pure memory consists of different “tones” or planes of consciousness, such that in his illustration of the cone, those further down at

the point are closest to action while those at the base are more distant in the past, having the nature of dream states (M.M., p.221). Attentive recognition traverses the different tones of consciousness and makes a series of attempts at synthesising different memory images with the present perception. While some are identical to the present image and others resemble it, having a vague similarity, they all come forward to meet it, one behind the other; however only images able to interpret the actual perception insert themselves into it (M.M., p.125). So, for example in the sentence "...cat ... on ... mat", attentive recognition will fill in the words to complete the sentence: "The cat sat on the mat." Alternatives such as "The cat ate on the mat" or "The cat slept on the mat" simply feel wrong and will be rejected.

Bergson claims the process of interpretation or reasoning is effectively a contraction of memory and a "reconstruction" of the perception that occurs through "reflexion" or "the projection, outside ourselves, of an actively created image, identical with, or similar to, the object on which it comes to mould itself" (M.M., p.124). The memory image is therefore projected into the object rendering the whole process of perception a circuit that starts and ends with the perceived object (M.M., p.127). The detail of the outlined object is filled in by capriciously selected repetitions through deeper levels of memory of which each creates a new circuit that envelops the first. This continues until memory "follows regularly, in all their details, the movements of the body" (M.M., p.130). Hence:

to act is just to induce this memory to shrink, or rather to become thinned and sharpened, so that it presents nothing thicker than the edge of a blade to actual experience, into which it will thus be able to penetrate. (M.M., p.130)

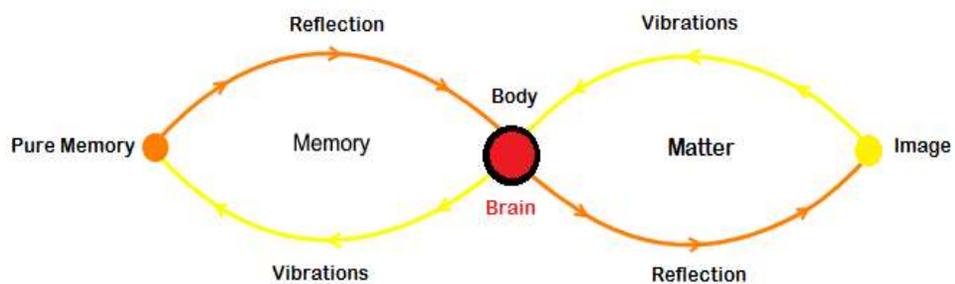
Bergson states that the brain “serves to recall the recollection” and is “contrived” to secure “adjustment to the situation” (‘The Soul and Body’, in M.E., p.65) using organs of virtual perception:

there are ... in that substance [of the brain], organs of virtual perception, influenced by the intention of memory, as there are at the periphery organs of real perception, influenced by the action of the object. (M.M., p.164)

He refers to these organs as an internal keyboard analogous to the external keyboard of real perception; however, they both share the same set of strings or nervous system which instigates movement of the body. The stimulation of the internal keyboard is therefore a prelude to a motor reaction.

As noted by Moulard-Leonard, Bergson’s account of reflexion in perception is a further example of the pendulum or harmonic motion referred to in the *Two Sources of Morality and Religion*, and which is implicit in his philosophical method of intuition and cosmology of *Creative Evolution* (Moulard-Leonard, 2008, pp.41-42). While his philosophical method of intuition in the generation of multiplicity in life was explained in Chapter 5, its relevance to perception and *kairos* will be examined in more detail later. Figure 22 illustrates one circuit of the harmonic motion implicit in his account of perception where the body occupies the centre.

Perception (Figure 22)



Following the movement by starting with the body, the body isolates a material image by reflecting on it, and in return the sense organs (the external keyboard) receive its vibrations which travel via the nervous system to the brain. Before sending the appropriate vibrations through the spinal cord to stimulate physical movement of the body as an impending action that outlines the object in space, memory condenses the vibrations within its own duration and projects the whole of its content towards the internal keyboard stimulating the process of reasoning or interpretation. The brain only allows a memory image (vibrations) through if it resonates or harmonises with the present perception and is projected in an act of reflection onto the material image, providing detail to the image. The material image initially perceived is transformed as the process is repeated as a series of hypotheses until the image is provided with sufficient detail to integrate the memory thought with the memory acted. Bergson describes the process of intellectual effort as playing our thoughts externally, such that the “play of ideas” receives a response from the “play of sensations...which is an echo of it ...in another tone”, and he states that: “these mental oscillations have their sensory harmonics” (‘Intellectual Effort’, in M.E., p.222) which is illustrated in Figure 22 above. The body or brain acts as a node in the harmonic motion of perception, a node being a harmonic; the intersection of matter and memory is *kairos* in his theory of perception.

Despite Bergson’s assertion that memory or consciousness implies freedom, one may however question how much freedom an individual really has when operating within a mechanistic model of harmonics. This subject will therefore be addressed in the following section.

9.2 Bergson and Freedom

The aim of *Time and Free Will* was to establish that when we conceive things as static in space we think of free will as providing a choice between pre-existing alternatives; however, the inner life is durational, and the future is invented as it progresses, hence a self-determined future. Bergson claims that freedom is a fact of experience and is not a concept demanding an explanation because defining it gives rise to a paradox; freedom becomes determined (T.F.W., p.220). Lutzow comments:

Freedom offers Bergson the ground from which he can explain the existence of other realities and at the same time criticize the scientific theories of his day. Freedom and duration are facts of immediate experience. If these facts are inadmissible to science, science must be faulted, not human experience. "We cannot sacrifice experience to the requirements of a system" (CE 45). (Lutzow, 1977)

Bergson claims freedom is indefinable because it is an act and not a thing, and he defines a free act as an outward manifestation of an inner state or a "relation between the self and its action" (T.F.W., p.165); his theory of perception in *Matter and Memory* establishes how this is achieved.

In *Creative Evolution* Bergson refers to the creativity of God as unceasing life, action, and freedom, and that we also are free when we create (C.E., p.245). For Bergson, freedom is associated with the creation of novelty in space and time, and the durational process defines him as a philosopher of *kairos*:

The living being chooses or tends to choose. Its role is to create. In a world where everything else is determined, a zone of indetermination surrounds it. To create the future requires preparatory action in the present, to prepare what will be is to utilize what has been: life therefore is employed from its start in conserving the past and anticipating the future in a duration in which past,

present and future tread one on another, forming an indivisible continuity.
(‘Life and Consciousness’, in M.E., p.17)

While *kairos* is understood as perception, the synthesis of past, present and future, for Bergson, it is also the moment when the brain actualises the freedom of the perceiving subject by allowing the spontaneous memory to override the automatic memory, and he concludes *Matter and Memory* with the following statement:

Whether we consider it in time or in space, freedom always seems to have its roots deep in necessity and to be intimately organised with it. Spirit borrows from matter the perceptions on which it feeds, and restores them to matter in the form of movements which it has stamped with its own freedom. (M.M., p.332)

Bergson links freedom with necessity and Plotinus describes *Intellect* as the “principle of necessity” (*Ennead* V.3.6, 10-11) operating as a “law of being” (*Ennead* V.9.5, 26-29). The *One* is the source of the substantial numbers in *Being* and *Intellect* (*Ennead* V.1.5, 15-17) that arise from its radiation, and since these numbers are necessary for freedom or ‘that which depends on us’, it is the means by which the *One* providentially confers its freedom. Similarly, Bergson’s God is essentially autonomous and confers freedom onto us providentially, therefore overcoming the challenge that if we do what God wills then we are not free.

Bergson claims that necessity in the process of evolution is intended to produce the ultimate goal of freedom of action; however, this is determined by the degree of consciousness of the organism. It was explained in Chapter 6 that Bergson’s partial finalism rests on the notion of the *élan vital* as a supra-consciousness that is essentially mind-like because it lacks consciousness in some of its manifestations. It contains all degrees of consciousness, including that pertaining to intellect, instinct and intuition, as well as the sleeping consciousness of immobile vegetable matter and the latent

consciousness of unorganised matter. For Bergson “consciousness is essentially free; it is freedom itself” (C.E., p.270) because “to be awake means to will” (‘Memory of the Present and False Recognition’, in M.E., p.155); however, he contends that the degree of consciousness and freedom in organised matter varies with the complexity of the nervous system:

Equally they measure, the one by the complexity of its structure and the other by the intensity of its awareness, the quantity of choice that the living being has at its disposal. (C.E., p 286)

Freedom to choose is also limited to a certain “order of greatness for condensation” (‘Introduction II’, in C.M. p.59); hence Bergson contends “the body extracts from the material environment whatever has been able to influence it” (‘Introduction II’, in C.M. p.55) and this is determined by attunement:

Nothing would prevent other worlds, corresponding to another choice, from existing with it, in the same place and the same time: in this way twenty different broadcasting stations throw out simultaneously twenty different concerts which coexist without any one of them mingling its sounds with the music of another, each one being heard, complete and alone, in the apparatus which has chosen for its reception the wavelength of that particular station. (C.M., p.60)

Barnard refers to this as “Bergson’s radio reception theory of consciousness” (Barnard, 2011, p.237). We only pick up on those durations or vibrations of matter to which we are attuned; hence our perceptions are generally limited. An insect and a human perceive the world very differently because an insect perceives the colour spectrum at a higher frequency than human perception, for example red light is invisible to insects; however, they see ultraviolet light which is invisible to us; hence different worlds simultaneously existing in the same place and time. Because the body is limited by

what it can consciously extract from the material environment Bergson claims that freedom is not in nature an “imperium in imperio” (M.M., p.331), that is, it is not an independent feature or tendency that exists as an order within the whole.

Despite the natural limitations of freedom imposed on unorganised matter, Bergson refers to living bodies as privileged “zones of indetermination” (M.M., p.23) because they do not always react instantly to external influences in a determined way; they are capable of novel actions in the surrounding matter. Also, by placing matter under the auspices of consciousness he can argue that matter is not necessarily determined in the way science conceives it; hence the ability to account for spontaneities in the evolution of life.

In *Time and Free Will* Bergson claims man is free to the extent that he throws off the shackles of the intellect that spatializes things and acknowledges:

It is the whole soul, in fact, which gives rise to the free decision, and the act will be so much the freer the more the dynamic series with which it is connected tends to be the fundamental self. (T.F.W., p.167)

We understand the fundamental self to be the durational spontaneous memory that shapes our character, and which gives rise to the *free decision*, while the body gives rise to the *free act*. Bergson’s focus on the integration of mind and body in his notion of freedom therefore differs from Plotinus who interprets freedom as “that which depends on us”, which is “free from bodily affections” and dependent on the activities of *Intellect* (*Ennead* VI.8.3, 19-23). For Plotinus the goal is to be in *Intellect* at rest from action because from here contemplation of the *One* is possible, and hence Bergson’s criticism of Plotinus’ “incomplete” mysticism in *The Two Sources of Morality and Religion* where he states that Plotinus:

...did not get beyond this last stage, he did not reach the point where, as contemplation is engulfed in action, the human will becomes one with the divine will. (T.S.M.R., p.221)

For Bergson, it is action in the world that is paramount, action that transforms it and furthers its evolution by participating in the creative freedom of God. From his perspective not only does Plotinus lack this goal because the body becomes insignificant, but ascension to the *One* is not realised. This leads us to an examination of how *kairos* fits into Bergson's account of freedom in *The Two Sources of Morality and Religion*.

In *The Two Sources of Morality and Religion* Bergson continues his philosophic method of differentiation and integration by establishing two sources of morality and their associated types of religion; closed morality and static religion is counterbalanced by open morality and dynamic religion respectively. Closed morality is dominated by feelings of moral duty established within individual closed societies, and Bergson refers to these feelings as customs or habits of social obligation that he likens to a quasi-biological instinctive social necessity implicit in nature that resists change and stifles individual freedom. Despite this, Bergson claims that individuals feel contentment, well-being and pleasure from their social obligations. At the other extreme is morality practised by Christian mystics who are open to humanity and the world in general. Both types of morality are driven by emotion; however, while closed morality is infra-intellectual because its ideas generate emotions that "spur us on to acts answering to needs", open morality is supra-intellectual; it is emotion, and specifically the emotion of love that produces ideas considered as "real inventions" (T.S.M.R., p.41). The mystic acts as a role model for others and encourages transformation of self and society in general, thus inducing a feeling of joy. Bergson claims mystics are the pinnacle of the evolutionary process of humanity because they are "capable of

transcending the limitations imposed on the species by its material nature” (T.S.M.R., p.220). They can directly align themselves with the will of God or the *élan vital*, participating in its absolute creative freedom, thus being “capable of transposing human life into another tone” through their actions (T.S.M.R., p.99). Bergson proposes that the mystic possess a supra-intellectual quality of “supreme good sense”:

...there is an exceptional, deep-rooted mental healthiness, which is readily recognizable. It is expressed in a bent for action, the faculty of adapting and re-adapting oneself to circumstances, in firmness combined with suppleness, in the prophetic discernment of what is possible and what is not, in a spirit of simplicity which triumphs over complications. (T.S.M.R., p.228)

Compare this with what Bergson says about good sense in *Matter and Memory* where he refers to a man of impulse who lives in the present, responding to a stimulus by the immediate reaction which prolongs it, while a dreamer lives in the past and his memories become conscious without benefit to the present situation. Neither of these individuals is geared for action, whereas the man maintaining equilibrium between these extremes is action-focused, possessing a “well-balanced mind” that employs “good sense” in that he makes the right use of spontaneous memory:

Between these two extremes lies the happy disposition of a memory docile enough to follow with precision all the outlines of the present situation, but energetic enough to resist all other appeal. (M.M., p.198)

The notion of equilibrium is therefore important at the moment of *kairos* where Bergson’s metaphor of the ‘blade’ mentioned in the quotation on p.269 marks the distinction between memory and the movements of the body (M.M., p.130). These

features are also found in the depiction of the mythical Kairos who holds scales balanced on a razor.¹⁶⁹

So, while the man of good sense in *Matter and Memory* appeals to personal memories to choose his action, the mystic appeals to the supra-conscious memory that is the *élan vital*. Both however engage harmonic motion in returning to the perceived image and instigating action. While in the moment of *kairos* the well-balanced mind generates harmonics that are sensations, the supreme good sense of the mystic operates in the moral domain where “Creation signifies, above all, emotion” (T.S.M.R., p.45), and therefore generates harmonics as emotions when he reintegrates with closed morality and static religion, effectively transforming it and facilitating the evolution of humanity. Bergson acknowledges that pure mysticism is rare (T.S.M.R., p.213) and the freedom of ordinary individuals is limited; in fact, in *Time and Free Will* he states: “Many ...live and die without having known true freedom” (T.F.W., p166).

Bergson does not refer to *kairos* explicitly and possible reasons for this will be discussed in the Conclusion.¹⁷⁰ He does however appear to follow the ancient Greeks in adopting it as a generative and dynamic principle within his cosmology, theory of perception, ethics, and it is implicit in his philosophical method of intuition. While it is commonly accepted that he used the mathematical calculus for its model, the following section will examine how Bergson’s method of intuition may also have been inspired by *kairos* in ancient Greek rhetoric under the influence of the Pythagorean tradition.

¹⁶⁹ Chapter 7.1, p.212.

¹⁷⁰ Conclusion, pp.307-308.

9.3 *Kairos* in Bergson's Philosophical Method

In the 'Introduction to Metaphysics' Bergson argues most of the unresolved philosophical problems remain unresolved because metaphysics has adopted the intellectual method used by science studying nature systematically and analytically, and that views reality as absolutely mechanistic; hence he proposes metaphysics requires a method of intuition to capture reality as duration in its indivisible dynamic creative activity. Deleuze describes Bergson's method of intuition as follows:

Intuition is neither a feeling, an inspiration, nor a disorderly sympathy, but a fully developed method, one of the most developed methods in Philosophy. (Deleuze, 1991, p.13)

It is commonly accepted that Bergson refers to mathematics as a model of his philosophic method and it was suggested in Chapter 6 that the 3-stage generative structure of Pythagorean cosmology is more appropriate; however, it is also implicated in the notion of *kairos* in the rhetoric of ancient Greece. It is a model with which Bergson was well acquainted, as his friend, Jacques Chevalier, informs us that Bergson "was also a finished humanist, to whom was awarded, at the *Concours Général*, the "Honors Prize" in rhetoric as well as in mathematics" (Chevalier, 1928, p.43). The influence of rhetoric and *kairos* appears to be a subject that has been neglected by Bergson scholars; however, it will be proposed that Bergson's philosophical method, and hence his cosmology, is a rhetorical operation that connects Bergson with *kairos* and the Pythagorean tradition, as was explained in Chapter 7.

Bergson's skill in the art of rhetoric implies that he would have been familiar with the five canons of the *Rhetorica ad Herennium* (86-82 B.C.) that include Invention, Arrangement, Style, Memory and Delivery, and which still form the basis of

method in modern rhetoric, the purpose of which is to resolve conflicts of knowledge. While its author is unknown, Enos refers to it as “the earliest and most complete manual of Roman rhetoric” that “synthesizes Greek rhetoric into Roman education” (Enos, 2005, p.336); the *Rhetorica ad Herennium* therefore has its roots in ancient Greek rhetoric.

Carter argues that the earlier concept of *kairos*, the principle employed by Gorgias and the earlier Sophists, became immersed in the concept of *stasis*, a formal theory proposed by Hermagoras around 150 B.C., and which later became central to the notion of *invention* in the *Rhetorica* (Carter, 1988, pp.97-112). He notes striking similarities between *kairos* and *stasis*, the key points of which are summarised and compared to Bergson’s method.

Kairos and stasis adopt the role of “opposing forces” or arguments.

As explained in Chapter 7, the Sophists, under the influence of a Pythagorean philosophy based on *harmonia* or the integration of opposites, aimed to resolve the intransigence arising from opposing concepts or arguments (*dissoi logoi*), considered foundational for the art of rhetoric. We only have to consider the titles of Bergson’s books and subjects he examined to find a similar point of departure: space/time, determinism/freedom, matter/memory, intellect/intuition, static/dynamic religion and morality, realism/idealism, possible/real, order/disorder, and being/nothing.

Kairos and stasis “act as an invitation to, and indeed even allow for, rhetorical action.”

Rhetorical action must be understood as a generative or transformational act of resolving the conflict between opposites and providing a sound decision. This is

achieved by the first canon of the *Rhetorica*, ‘Invention’, the function of which is described by Lauer as “supplying ideas, subject matter, and arguments to flesh out the introduction, the statement of facts and the proof or the refutation for judicial, deliberative, and epideictic discourse.” (Lauer & Pender, 2003, p.52). Sloane comments in his *Encyclopedia of Rhetoric*:

...while English distinguishes between *invention*, which brings into existence something new, and *discovery*, which finds what is already there, both Latin and Greek use the same word, *inventio* or *heurein*, for both. (Sloane, 2001, p.389)

‘Invention’ in rhetoric therefore includes both the creation of something new and discovery of what already exists in terms of providing evidence on which to form an argument. ‘Invention’ is a dynamic concept starting with commonly accepted facts and moving to a new perspective; it therefore encompasses the whole of the rhetorical argument from start to finish. For Bergson, invention is the key aim of his philosophical method, the first rule of which Deleuze defines as, “Apply the test of true and false to problems themselves. Condemn false problems and reconcile truth and creation at the level of problems” (Deleuze, 1991, p.15). This is because Bergson claims philosophical problems remain unresolved due to an intractable contradiction of opposites caused by a lack of precision in specifying them (‘Introduction II’ in, C.M., p.77), and that the solution for any philosophical problem will always be found providing the problem is precisely specified; “it is a question of *finding* the problem and hence of *posing* it even more than of solving it. For a speculative problem is solved as soon as it is well posed” (‘Introduction II’, in C.M., p.51). In a letter to Floris Delattre, (1935) he writes:

...philosophizing for real should mean at once *creating* the position of a problem and *creating* the solution. ... I consider an *amateur* the one who chooses between ready-made solutions, as one decides to register as a member of this or that political party. But I consider a *philosopher* the one who creates the necessarily unique solution of the problem which he has posed anew by the very effort of trying to solve it. (*Melanges*, p.1528)

While Bergson rejects the notion of discovery in favour of invention in his method, he suggests this work of discovery or preparatory study is essential for analysing a problem in its elements. The method he proposes “demands that [a philosopher] be ready, no matter what his age, to become a student once more” (‘Introduction II’ in, C.M., pp.67-68). Thus, he conducts analyses of philosophical, scientific, and other empirical evidence to support his arguments, which is, on his terms, an act of discovery of what already exists (‘Introduction II’, in C.M., p.51). The philosophical method that Bergson employs therefore includes discovery and invention, the constituents of ‘invention’ in rhetoric.

Kairos and stasis both “serve as guides to resolving the initiating conflict through a judgment.

The formation of a judgement occurs in the act of invention, and Carter notes that judgements were "non-rational" in the case of *kairos* and “rational” in the case of *stasis*, where decisions were based on a formal four-part invention process in which questions were asked to determine the facts, nature and seriousness of an issue, and a plan of action. Bergson adopts a method of questioning in his texts; however, a much deeper analysis would be necessary to discover whether his questioning follows the systematic character of *stasis*. The emphasis Bergson places on intuition in his philosophical method suggests it more closely resembles the non-rational method employed by Gorgias who adopted the notion of *kairos*. Gorgias, a rhetorician and

philosopher, held the view that rhetoric could rarely provide objective truth through reasoning because words distort reality. Heidlebaugh suggests that for the Sophists, and for Gorgias in particular, *kairos* promotes active artistic judgement through an act of intuition:

In attempting to teach Rhetoric ... Gorgias suggested a *technê* in which subject and object merge in response to the dictates of a powerful moment. The power and novelty of the moment are such that habitual thinking like that in the methods useful to everyday craftsmanship are inadequate for meeting the moment. A *technê* grounded in “radical occasionality” must assist in disrupting the methods of routine production, in muting or concealing the habitual, and thus allow for the craftsman to respond directly to the moment, to see it freshly. (Heidlebaugh, 2001, p.47)

It is suggested that Gorgias considered reality as a Heraclitean *becoming* in which the moment of *kairos* was grasped by intuition (White, 1987, pp.16,34) and succeeded by rational reflection. White refers to Gorgianic *kairos* as the “irrational novelty of the moment that escapes formalisation” (White, 1987, p.20); however it was a method of intuition that originated with the senses, thus having an aesthetic component (Untersteiner, 1954, pp.185-194), leading commentators to classify him as an empiricist (Consigny, 2001, p.27). Rhetoric was therefore intuitive in the sense that the rhetorician had to read the energy of the time, place, the audience, and be aware of the assumptions they make, the present and historical arguments as well as understanding the relevant facts. Once again, we find echoes of this interpretation of Gorgias in Bergson who proposed a “true empiricism” and for whom judgement formed by intuition is the source of philosophical knowledge (‘Introduction to Metaphysics’ in, C.M., p.175). Like Gorgias, he proposes in *Creative Evolution*:

The duty of philosophy should be to examine ... the living without any reservation as to practical utility, by freeing itself from forms and habits that are strictly intellectual. Its own special object is to speculate, that is to see. (C.E., p.196)

For Bergson, intuition is an intellectual act that chooses to observe itself internally, that is to think in duration, an act that requires us to reverse the direction of habitual patterns of thought, i.e. to the external world. It is an act that relies on the concept of *sympathy* in which the act of perception or sensing (*sentir*) provides immediate knowledge of its object in terms of its rhythms, vibrations or power, by becoming one with it; hence an example of good sense. As a conscious act that produces knowledge from internal observation, intuition is the experience of self-sympathy, because, as Bergson proposes, we can ‘sympathise with ourselves’ and nothing else (‘Introduction to Metaphysics’, in C.M., p.162-3). Lawlor explains that human intuition ‘is a particularly difficult way of sensing’ which means harmonising the senses. He notes that Bergson considers intuition in terms of sense of touch and hearing, as well as vision. There is ‘contact’ or ‘coincidence’ as well as ‘spiritual auscultation’:

In the *Introduction to Metaphysics* Bergson describes intuition:to penetrate the self, and through a kind of spiritual auscultation, to sense its soul palpitate. Auscultation is a technical term in medicine meaning to listen attentively to organs either by the ear directly or by means of an artifice like a stethoscope ...when one auscultates, one must really listen ... The image of the auscultator tells us that Bergsonian intuition is like a doctor’s intuition, an intense intuition in which one recognises differences and continuities. (Lawlor, 2004, p.65)

Intuition is therefore not pure thinking or idea; it is an immediate experience that implies sensibility arising within consciousness that facilitates the determination of differences in kind. Intuition enables us to become aware that false problems arise because of badly analysed composites; we fail to distinguish differences in kind,

mistaking them for differences of degree, hence the second rule of method that Deleuze attributes to Bergson is “Struggle against illusion, rediscover the true differences in kind or articulations of the real” (Deleuze, 1991, p.21). This is achieved by making qualitative distinctions between opposites that Bergson considers in terms of static and dynamic tendencies.

Thinking for Bergson is:

essentially a continuous change of internal direction, with a tendency to translate itself into changes of external directions, I mean to say, into actions or gestures able to draw in space and express metaphorically the comings and goings of mind. (‘The Soul and the Body’, in M.E., p.56)

Therefore, as Frédéric Worms notes, thinking “is a process of mediation between pure intuition and pure intelligence ... We have to live and think in the double movement of concentrating and expressing” (Worms, 2005, p.1233). While the intellect expresses itself externally and spatially, for Bergson the intuition of duration “fits none of our categories of thought” (‘Introduction II’, in C.M., p.34) because the intuition can only be communicated or expressed by means of the intelligence, whose language fails to capture its dynamic nature (‘Introduction II’, in C.M., p.42):

We call intuition the sympathy by which one is transported into the interior of an object in order to coincide with what there is unique and consequently inexpressible in it. (‘Introduction to Metaphysics’, in C.M., p.161)

While their underlying arguments differ, Bergson follows Gorgias in proposing a theory of intuition in which judgements formed by sensibility only produce knowledge considered as approximate when expressed in language. This brings us to Carter’s fourth similarity between *kairos* and *stasis*.

Both offered systems of questioning which generated probable knowledge from a synthesis of the opposing arguments.

As noted above, the earlier Sophists synthesised the opposites in a *kairic* act of intuition, as does Bergson, who endeavours to overcome the contradiction of his static and dynamic concepts with an ontological shift that refers to them as tendencies rather than discrete objects or states, as shown in the table below.

<u>Static</u>	<u>Dynamic</u>
Intellect	Instinct/Intuition
Space	Time
Matter	Memory
Closed Morality	Open Morality
Closed Religion	Open Religion

In each case he integrates the opposites by an act of intuition that enables a question to be posed in terms of duration or consciousness; hence, as revealed by the harmonics model, the differences in kind become differences of degree; the dualism becomes a monism.

While the generative process for both Plotinus and Bergson begins with an undifferentiated First Principle whose radiation or *élan vital* respectively, takes the form of an undifferentiated dualism as potentialities, it could be argued that Plotinus' dualisms of motion and rest, same and other, and Bergson's dualism of matter and memory, take the form of unlimited and limiting, thus following the lead of the Pythagorean Philolaus.¹⁷¹

For the earlier Sophists employing *kairos*, and with the later concept of *stasis*, knowledge was not considered absolute but probable. Rhetoric did not aim at absolute

¹⁷¹ Chapter 2.1, p.33; Chapter 2.1.2, p.35.

knowledge; rhetorical *kairos* especially, was regarded as process, that is, a forward and backward movement between the intuition of the rhetorician and its expression in language, and which encompassed the process of asking questions, considering evidence, creating ideas and building arguments, with the aim of deciding the right action and in the right measure appropriate to the circumstance. Sometimes it resulted in a choice between the opposite arguments posed, and sometimes a synthesis of both. Similarly, we find that for Bergson, his method of philosophy is an act, a dynamic movement between intuition and intelligence which progresses towards knowledge, thus leaving scope for further progress. Philosophy does not find immediate certainty; it is:

...a gradual ascent into light. Borne along in an experience growing ever wider and wider, rising to ever higher and higher probabilities, it would strive towards final certainty as to a limit. (M.E., p.6)

But as with everything durational, his philosophical method was essentially open-ended because the whole is constantly changing. Closely linked to the probability of knowledge is Carter's final comparison of *kairos* and *stasis*.

Both are concerned with the rhetorical situation in terms of opportune moment and appropriateness of speech.

This concerns the rhetorical context and arguments that are appropriate to a rhetorical issue that is situation specific. Similarly, Bergson insists that we cannot reason mathematically about problems; they cannot be constructed hypothetically from general notions stored up in language, and each new problem demands a new effort of intuition that considers all the relevant facts available at the time. Gorgias in his 'On Nature' or 'On Not-Being', and Bergson (C.M., p.162) refer to language as only providing a

symbolic representation of reality; however both require that invention employs creativity in using language. The notion of creativity encompasses invention, or what is said, as well as the style, or how it is said. ‘Style’ is the subject of the third canon of the *Rhetorica ad Herennium*. Gorgias is described as:

...using a language enriched by the exuberance of a poetical imagination. He was much addicted to the substitution of rare expressions—*γλωτται*, as the Greek critics called them—for the ordinary forms of speech. His language abounded in archaic and poetical words, striking metaphors and unusual compounds. (Dobson, 1919)

Bergson’s use of language is described by Gunn in similar terms:

Bergson’s style of writing merits high praise. ...he is highly imaginative and picturesque... at times he rises to a high pitch of feeling and oratory. ... There is in his works a beauty of style and a comparative absence of technical terms which have contributed much to his popularity. The criticism directed against his poetic style accuses him of hypnotising us by his fine language, of employing metaphors where we expect facts, and of substituting illustrations for proofs. (Gunn, 1920, pp.103-104)

The analysis of the principles of *kairos* and *stasis* in rhetoric and in Bergson’s philosophical method suggests that while it is uncertain whether Bergson employs the act of systematic questioning used in *stasis*, he appears to adopt the intuitive notion of *kairos* and the style of Gorgias. The similarities between them can be summarised as follows: a reality informed by opposites; an opportune moment of intuition that must but cannot be adequately expressed in language; the acts of invention, discovery of facts, and judgment that provides probable knowledge that progressively approaches certainty or resolution of a conflict using highly creative language and imaginative metaphors described as ‘poetic’; and the commitment to appropriate action.

The link between rhetoric and *kairos* therefore appears to be more compatible with Bergson's philosophy than the mathematical model that he suggests. Once again, the Pythagorean connection is apparent because Bergson's philosophical method closely follows the rhetoric of Gorgias who was influenced by the Pythagorean understanding of *kairos* through his teacher Empedocles.

Conclusion

Bergson has been argued to be a philosopher of *kairicity* and the examination of its application to his theories of perception, ethics, freedom and his philosophical method of intuition has revealed that it is implicit within his philosophy founded on the model of the generation of harmonics. The integration of the static and dynamic opposites is only possible because the *élan vital* generated matter and consciousness as a series of harmonics, and the creative process is continued as more harmonics are generated at the moment of *kairos*, the point at which they coincide. The *kairos* of perception, the coincidence of matter and memory, is a node of sensation; the *kairos* of morality, the coincidence of the closed and open, is a node of emotion; and the *kairos* of philosophical intuition, the coincidence of intelligence and intuition, is a node of knowledge or understanding. Each moment of *kairos* presents the opportunity for the expression of freedom. While this freedom is not absolute other than in the rare case of the mystic, freedom exists in degrees, leaving it open to evolve as the harmonic motion continues its course. Bergson alludes to the mythological depiction of Kairos in ancient Greece in his description of duration as the hyphen or bridge that connects the past and future, and he appears to have adopted *kairos* as employed in the rhetoric of ancient Greece in his philosophical method. The link that connects a philosophy of

harmonics with a philosophy of *kairicity* is the Pythagorean tradition, an influence that appears more than coincidental in Bergson's work.

Conclusion

*

Mossé-Bastide's *Bergson et Plotin* surprisingly, remains the only work that comprehensively studies the key concepts shared by Plotinus and Bergson, as well as their differences. She notes that the significant resemblances between them include: a presentation of metaphysics as psychological experience that requires a special kind of consciousness that dispenses with images, and is one in which subject and object are united; secondly, a shared conception of causality in which multiplicity emerges from a prior cause and which is a continual process of change; and thirdly, the way in which salvation is offered to man by the dialectic of love and the inner experience of freedom. However, she points out that the shared concept of *logos* that is implicit in the generation of multiplicity is of prime significance (Mossé-Bastide, pp.397-402). This study has aimed to build on these shared concepts and to add another dimension to the relationship, by arguing that they both present a philosophy modelled on the dual and interlinked concepts of harmonics and *kairos* that have their roots in the Pythagorean tradition. Apart from the French literature linking *kairos* to Bergson and Plotinus in very general terms, the subject of harmonics and its related Pythagorean influence has not previously been addressed, therefore there is little secondary literature to either support or refute the arguments presented. The following summary reviews each of the chapters, focusing on aspects of the texts scholars have found challenging, and how the new interpretation resolves the perceived difficulties. In addition, it will highlight important new revelations and opportunities for further work.

To provide context for the following chapters, Chapter One examined how Bergson and Plotinus could have been influenced by Pythagoreanism in their respective

eras, and it was found that both philosophers lived in eras when Pythagoreanism was experiencing a revival. Plotinus was subject to the influence of Pythagoreanism through Plato, the Neo-Pythagoreans of his era, his teacher Ammonius Saccas, his own study of ancient philosophy, as well as its prevalence in the wider culture. He adopted an ascetic lifestyle, and like the Pythagoreans, treated philosophy as an initiation into higher knowledge.

It was more important to establish the Pythagorean background for Bergson as neither he nor anyone else has acknowledged their influence on him; however, it was shown that in Bergson's era scientific and mathematical developments coincided with a revival of Pythagoreanism in the wider culture, and these developments, as well as the philosophy of Plotinus, complemented his interest in French Spiritualism as advocated by Maine de Biran and Ravaisson. It was proposed that Bergson encountered Pythagoreanism through his family, his study of mathematics and rhetoric, the influence of Theosophy, and through his lectures on Greek philosophy, including the Pythagoreans and Plotinus, influences that possibly contributed to his interest in esotericism and psychical research. It was noted that while Bergson did not adopt an ascetic lifestyle, it appears that he intentionally continued the ancient tradition of regarding philosophy as an initiation; hence there are noticeable similarities with Plotinus and the Pythagorean approach to philosophy in terms of content and style.

The aim of Chapter Two was to examine the generation of multiplicity from the perspective of Pythagorean cosmogony and cosmology and to introduce key concepts Plotinus and Bergson employ in their respective philosophies: nature, the principles of limiting and the unlimited, *harmonia* (ἁρμονία), and the function of the Pythagorean *Monad* in their number theory. This was followed by a brief history of Pythagorean harmonics and number theory, and a basic introduction to the Pythagorean science of

harmonics. It was proposed that Plotinus and Bergson would have conceived Pythagorean numbers as powers.

The generation of multiplicity in *Intellect* has proved challenging for scholars of the *Enneads*, and Chapter Three argued that the model of the generation of harmonics is buried in the text, thus suggesting the Pythagorean influence on Plotinus is greater than previously realised. It is significant that the model of harmonics and the Pythagorean influence explain several concepts not fully understood by Plotinian scholars, for example, why procession and reversion is necessary for the generation of *Intellect* and the multiplicity within it; the nature and shape of the forms; the nature of *logos* as substantial number and form; how number relates to the primary kinds and generates the *Beings* in *Intellect*; and finally, it explains the nature of the Plotinian decad. While it could be objected that the physics of standing waves and harmonics were not understood in Plotinus' day, it was noted that the Stoics, Vitruvius (1st century B.C.), as well as Boethius (A.D. 480-524) considered sound a transverse wave and that Nichomachus (c. 60-120 A.D.) specifically refers to the inverse proportion obtaining between the length of string on a canon and its vibration when the string is plucked. It suggests that Plotinus understood that the correspondence of physical distance and musical ratios could be determined in terms of vibrations, a theory he applied non-spatially to *Intellect*. If this interpretation is correct it is an important and previously unrecognised development of Pythagorean philosophy.

Chapter Four examined Plotinus' account of the generation of *Soul* and the origin and nature of matter, suggesting that the harmonics model and Pythagorean influence is operational at every stage in the procession from the *One*. Once again it was argued that the harmonics model resolves difficulties perceived by commentators. It clarifies the various levels of *Soul*, challenges the view that the *Hypostasis Soul* is a rational

form, explains how Plotinus could conceive of the *World Soul* as the eldest, and how each primary *Soul* form generates its own offspring as an infinite series, one after another in temporal succession as in a musical scale or melody.

Plotinus' account of the generation of the world and its contents by the *World Soul* employs the concepts of attunement, correspondence and conflict, which it was argued can be understood as constructive or destructive interference in physics; hence new 'nodes' and forms are generated that do not receive their rational forming principles from *Intellect*. Individual *souls* are fitted into bodies according to providence facilitating attunement and sympathy, which is akin to the Pythagorean concept of *harmonia*. While Pythagorean harmonics underpins the ontological structure that facilitates sympathy in Plotinus' metaphysics, it was speculated that Aristoxenus influenced his epistemology with the concept of *synesis*, an *a priori* innate musical intuition. The harmonics model is more obvious in Plotinus' account of *Soul*, and it was argued that the commonly held view that Plotinus' concept of *sympathia* has Stoic origins requires re-evaluation because the Pythagorean influence is more compatible with his account.

It was suggested that disagreement amongst scholars concerning the role of music and musical metaphors in the *Enneads* arise because they have not grasped how harmonics are generated in *Intellect*. It was therefore proposed that the Pythagorean influence on Plotinus has been misunderstood and underemphasised in his theory of *Soul*.

The ambiguity concerning the nature and origin of physical matter in the *Enneads* has again resulted in differences of interpretation among commentators. It was argued that the harmonics model accounts for why physical matter does not exist in *Being* but is necessary for the making of the universe and conforms to Plotinus' assertion that

matter is “a sort of form” and must therefore have its origin in *Intellect*. It was suggested that matter is a form in as much as it is generated as a flat line, formed when the distance between the nodes or harmonics generated from the fundamental as an infinite series approaches zero. It therefore acts as a powerless but reflective surface for the forms, just as matter acts as a reflective surface onto which sound waves are projected to produce sound that is perceived.

The model of harmonics it is not completely hidden in the *Enneads*, neither is it obvious, and it was noted that Plotinus is more explicit about harmonic principles when describing the nature of *Soul*, but never explicitly refers to it in the generation and nature of *Being*, *Intellect* and matter. It was concluded that Plotinus’ account of *Soul* supports the argument that the harmonics model applies to *Intellect* and matter, because aporias remain in his philosophy without it.

Plotinus’ lack of clarity has been the cause of vagueness, misunderstanding and debate amongst those attempting to understand various concepts in the *Enneads*, and it all appears to originate from the ambiguity linked to the generation of multiplicity in *Intellect*; in particular the lack of explanation about the mechanism of procession and reversion and the nature of *logos*. An appreciation of the importance of the science of harmonics and the Pythagorean influence on Plotinus could transform our understanding of the *Enneads*.

Chapter Five commenced the exploration of the Pythagorean influence on Bergson with an examination of the role of God and the *élan vital* in his cosmology as described in *Creative Evolution*. It was concluded that while Bergson strongly rejected the notion of pantheism he followed the Pythagoreans and Plotinus who could be more accurately placed in the category of *panentheism*, because, in the latter theory, God remains distinct from its products but is active within them.

It was noted that commentators have failed to grasp the significance of the impulsion and inversion of the *élan vital* in Bergson's cosmology as proposed in *Creative Evolution*. This is surprising because Bergson always considered duration as vibrations of energy, and one plausible interpretation is that vibrations are formed by harmonic motion. It was therefore argued that Bergson followed Plotinus in adopting harmonic motion as the mechanism of his method of philosophical intuition and therefore the *élan vital*. The *élan vital* generates itself 'fanwise', firstly as a single vibration or 'fundamental', and matter and consciousness as harmonics, or two separate tendencies that each generate their own harmonics, forming a supra-conscious memory analogous to Plotinus' *Intellect*, while Plotinus's *Soul* becomes Bergson's intellect whose function is to spatialize matter. Despite the similarities, Plotinus hypostasises *Intellect* as eternity and *Soul* as its temporal expression, whereas Bergson synthesises them, so his ontological and epistemological structure is a wholly temporal process. It was therefore concluded that the model of harmonics solves the 'mystery' of Bergson's cosmology and explains the durational nature of consciousness and matter.

In Chapter Six the examination of Bergson's arguments for partial finalism, his theory of number, the influence of mathematics, and his sympathy with a Pythagorean philosophy of transformation supported the arguments made in Chapter Five and developed the argument for a Pythagorean influence on him. It was proposed that Bergson's arguments for partial finalism revealed that he followed Plotinus in adopting the 3-stage generative structure of Pythagorean cosmology. Furthermore, he adopts key Pythagorean themes with his analogy of microcosm and macrocosm, his theory of attunement between and intellect and matter, the sympathy of instinct and intuition with matter, as well as his notion of conflict and war, which can be understood as destructive interference. All these concepts are consistent with the model of harmonics. It was

argued that the harmonics model is compatible with his account of how consciousness and matter are integrated in the whole to create organic life, and how he includes spontaneity and freedom within his account of partial finalism. It also accounts for similarities in structure in the evolutionary process due to the proportional existence of tendencies within matter and organic life and is consistent with the *musical theme* Bergson proposes.

While Bergson does not discuss number as having a specific role in the generation of multiplicity, in *Creative Evolution* he acknowledges that he is following Plotinus' theory of *logos*, thus distinguishing between monadic number or quantitative multiplicity and substantial number or qualitative multiplicity, the latter being generated with the generation of multiplicity as nodes and vibrations.

Bergson makes a clear distinction between the geometrical order and the vital order and insists that mathematics cannot account for duration because it does not concern itself with the intervals between the static points on which it bases its calculations. It was argued that Deleuze was mistaken to have considered Riemann's conceptual spatial mathematics to have influenced Bergson to the degree that he suggests due to the temporal nature of duration. Furthermore, it was proposed that the influence of modern calculus on his philosophical method has been understandably overemphasised. It was suggested that the calculus Bergson had in mind produced a "fan-wise" generation of multiplicity in the form of the Pythagorean *tetractys*, which was also adopted by Plotinus; hence the mathematics underpinning Bergson's qualitative differentiations and integrations is not the mathematics of science, but music; the significance of which is that it takes account of the intervals in which *kairos* represents a harmonic, as explained in Chapter 9.

The argument for a Pythagorean influence on Bergson was supported by an examination of his lectures, which revealed his sympathy for their number theory and philosophy of transformation, which is not surprising since his own philosophy is an open system of dynamic transformation.

It was therefore proposed that while commentators have noted a similarity of Bergson's 'creative evolution' with Pythagorean cosmology, it was a mistake to have dismissed it, as was dismissing his musical references as mere metaphor. It was noted that Bergson specifically links the generation of novelty to harmonics in several places in his work and that he replicates arguments made by Aristoxenus, an ancient Greek theorist of experiential harmonics who was linked to the Pythagoreans. It was also noted that Bergson makes several references to Pythagoras or Pythagoreanism that indicate a possible influence.

This new interpretation of Bergson's metaphysics not only clarifies his cosmology but potentially touches many aspects of his philosophy that may be read in a new light from the perspective of the influence of Plotinus and the Pythagoreans.

Chapter Seven introduced the concept of *kairos* that has already been acknowledged as significant to the philosophy of Plotinus and Bergson, though it has been largely neglected in the English language literature. In ancient Greece *kairos* differed from *chronos* or chronological time in that it was understood as time considered to be dynamic and purely subjective, hence not measurable, uniform, or absolutely predictable. It was understood as the interval that links the past to the future, requiring human participation in the act of creation and signifying the emergence of qualitative change that is situation specific. *Kairos* was prevalent in Greek drama, medicine, as well as being important in Pythagorean cosmology and ethics, which in turn influenced the rhetoric of Gorgias and Isocrates. It was proposed that Plotinus and

Bergson adopt *kairos* as a poietic moment, applying the Pythagorean notions of opposites and *harmonia* to their concepts of mind and matter, freedom and determinacy, concepts that integrate to facilitate action.

Chapter Eight examined the concept of *kairos* in the *Enneads*, with reference to the *World Soul* in its making of the world, and individual *souls* in their interaction with the world, clarifying how it is linked to the model of harmonics. It was explained how the *World Soul* makes the world as an act of contemplation that is paradoxical because it is an act that is concurrently necessary as an act of providence and free. While the *World Soul* contemplates the harmonics or substantial numbers and forms in *Intellect*, analysis of Plotinus' definition of freedom or ἐφ' ἡμῶν, meaning 'that which depends on us', revealed that the *World Soul* fulfils one of the requirements for freedom because it is not under outside influence, what it makes is within its power, and its knowledge is right knowledge or wisdom because it contemplates the forms in *Intellect*, which are *Beings* of eternal truth.

An examination of Plotinus' account of the psychology of individual *souls* included his theories of sense perception, memory, reason, and freedom. In sense perception, Plotinus considers sensation arising from the stimulation of sense organs of the body and perception as conscious awareness of external objects as other than itself. It was noted that commentators have experienced difficulties in comprehending Plotinus' concepts of 'impressions', 'assimilation' and 'resemblance' and how they are related to *sympathia*. It was argued that once again difficulties arise because they assume Plotinus' *sympathia* to have a Stoic origin, and that they are resolved if *sympathia* is understood from a Pythagorean perspective because the harmonics model underpins Plotinus' theory that facilitates the interaction between body and *soul*. This is important because *sympathia* is also relevant in his theory of memory, reason and

ultimately human freedom. It was explained that in sense perception the *soul* is able to receive the impressions of sense objects through the body because there is a correspondence or attunement between them, made possible because each *soul* possesses all the *logoi* in itself, but only as an imitation of those in *Intellect*, as are those in sense objects and the sense organs. It was proposed that ‘impressions’ can be understood as forms or vibrations, where one form resonates to the vibrations of another; ‘assimilation’ arises when two bodies possess the same *harmonic* linked to the frequency of the vibrations; and *sympathia* can be understood as sympathetic resonance, in which the passive affection of an object by another object at a distance from it leaves the passive recipient unchanged. It was suggested that this interpretation is consistent with an alternative form of perceptual realism in which external objects are forms in matter considered as imitations, not ‘images’, of the forms in *Intellect*. This new interpretation of the role of *sympathia* in sense perception warrants further investigation due to the limited scope of the analysis presented here.

While Plotinus’ account of memory presents less difficulty in the secondary literature, commentators have debated the role of λογιζόμενον and διανοητικόν, two terms that Plotinus uses for the activities of the reasoning soul. While commentators usually interpret them as both meaning ‘discursive reasoning’ as thinking in words or images produced by the imaging power of the soul, it was argued, based on the new interpretation of *logos* in Chapter 3 as substantial number and form, that Plotinus is referring to two different activities of the reasoning *soul*. λογιζόμενον uses sympathetic resonance and accounts for the ability of the reasoning power to make its judgement about the perceived object in terms of harmonics (substantial numbers) and forms (vibrations), that act as measures used in the judgement. This is followed by διανοητικόν interpreted as ‘discursive reasoning’ or thinking in words or spatial

images. It was noted that λογιζόμενον is also highly relevant to Plotinus' account of virtue that he acknowledges to originate with "the ancients", and who are understood to be the Pythagoreans, for whom *logismos* is a rational calculation where opposites are fitted together (*harmonia*) using ratios to provide knowledge and understanding about the world, as well as forming the basis of ethical action. While the examination of these two terms was limited in scope and the interpretation speculative, further in-depth analysis of how Plotinus uses διανοητικόν and λογιζόμενον in the *Enneads* is warranted as it could be important for those commenting on Plotinus' psychology, or for anyone undertaking a translation of the *Enneads*.

The examination of human freedom revealed it to function as it does for the *World Soul*. 'ἐφ' ἡμῖν', or 'that which depends on us' ultimately comes from the individual *soul* contemplating the forms in *Intellect*, by becoming one with it and remaining there. Freedom cannot be achieved in a pure state in practical life, because the *soul* does not remain in *Intellect*; it must act; however, freedom is enhanced if the *soul* does not allow the external world to influence its action.

Plotinus appropriates the concept of *kairos* from its Pythagorean origins, and because *kairos* is contemplation it is not a static moment; the *soul* requires continual interaction with the outside world, becoming conscious of it in its perception and memory of those perceptions, aided by the power of reason that provides knowledge and the ability to think discursively for deciding action appropriate to the circumstances. Providence provides the human *soul* with everything it needs to become free and enables it, with the appropriate training, to think like *Intellect*, that is, to contemplate substantial numbers and forms, or as has been argued, to think and act according to the laws of Pythagorean harmonics.

Why should we accept that Pythagorean harmonics underpin Plotinus' philosophy? In the absence of any other interpretation that potentially resolves so many perceived ambiguities, and unites Plotinus' cosmology and psychology, it is a speculative theory that offers, for the first time, a plausible explanation of Plotinus' concepts of procession and reversion, and clarification of the nature of *logos*, a concept of supreme importance, in that its interpretation determines whether Plotinus' philosophy makes sense as a complete system. While it is not explicitly explained in the text, the evidence suggesting a strong Pythagorean influence on him appears to support it and develops recent scholarship that has recognised the importance of musical entities in the *Enneads*.¹⁷² An appreciation of the importance of the science of harmonics and the Pythagorean influence on Plotinus has the potential to resolve the acknowledged obscurities perceived by scholars in many areas of Plotinus' metaphysics, and therefore provides a fresh perspective and basis for further work of analysis and review of the secondary literature.

Chapter Nine explained how Bergson utilises *kairos* and the model of harmonics in his theories of perception, ethics, freedom and his philosophical method of intuition. The task was easier to achieve with Bergson than it was for Plotinus because his account of matter and consciousness is integrated in the concept of duration that he describes as vibrational. He also makes several specific references to harmonics and captures the essence of the mythical Kairos of ancient Greece.

It was argued that Bergson's account of pure perception draws on the physics of light waves, and hence the law of resonance, to reveal differences in the continuity of matter and to account for the isolation of an object. It was noted that he differed from Plotinus who employed *sympathia* in terms of sound vibrations to reveal similarities.

¹⁷² Gersh, 2005; Panaiotidi, 2014

Either way, resonance is the principle that explains the perception of an external object, and the law of reflection enables Bergson to claim, as does Plotinus, that the pure perception of an object occurs in the object itself.

The examination of his account of memory clarified that memories are preserved in the body and the mind as pure memory through correspondence or attunement, only because of the vibrational quality of matter and consciousness. The condensation of pure perception in consciousness triggers a response from inattentive recognition or habitual body movements that resonate with the present image, and from attentive recognition as it traverses the different tones or levels of consciousness, making a series of attempts at reasoning, or synthesising different memory images with the present perception; an act that is completed when there is either resonance or a harmonisation of the memory with the present image. The attempts at synthesis are achieved by harmonic motion that transforms the present in the moment of hesitation or delay, between the brain receiving vibrations from the external keyboard or sense organs and its resonance or harmonisation with the internal keyboard located in the brain, and which is influenced by the intention of memory. The body or brain acts as a node in the harmonic motion of perception, a node being a harmonic or *kairos*, the prelude to action at the intersection of matter and memory.

While Bergson suggests that at the moment of *kairos* the brain actualises the freedom of the perceiving subject by allowing the spontaneous memory to override the automatic memory, it was questioned how much freedom an individual really has when operating within a mechanistic model of harmonics. Like Plotinus, Bergson argues that freedom is intimately linked with necessity, that God is essentially autonomous and confers freedom onto us providentially; however, the examination of the theory of freedom in *Time and Free Will* and *The Two Sources of Morality and Religion*

confirms that freedom is rarely realised. It is ultimately linked to becoming one with the *élan vital* itself, a task only achieved by the supra-intellectual mystics who possess supreme good sense. For ordinary individuals *kairos* is linked to freedom to the degree that they possess good sense, where *kairos* is a harmonic linked to sensations, and in their moral life it is linked to emotion at the intersection of the attitude of closed and open morality.

The examination of the role of harmonics and *kairos* in Bergson's texts not only resolves the mystery associated with his cosmology, it helps to clarify the relevance of his pendulum or harmonic motion that is present in all his texts and which explains the generation of novelty. The integration of the static and dynamic opposites he proposes is only possible because the *élan vital* generated matter and consciousness as a series of harmonics, and the creative process is continued as more harmonics are generated at the moment of *kairos*, the point at which they coincide. *Matter and Memory*, the text Bergson scholars find the most challenging, becomes much easier to understand.

The Pythagorean tradition connects a philosophy of harmonics with a philosophy of *kairicity* and it was argued that Bergson was trained in rhetoric and appears to have employed the principles of *kairos* in his philosophical method as they applied to the ancient Greek art of rhetoric, thus questioning the influence of mathematics as is commonly accepted by Bergson scholars.

The philosophy of Plotinus and Bergson therefore embodies four key features of Pythagorean cosmology: firstly, they all have an original source; for the Pythagoreans it is the 'central fire', for Plotinus it is the *One*, and for Bergson it is God. Secondly, the original source emits an energy that is an undifferentiated unity with immense potentiality; for the Pythagoreans it is the theory of opposites, for Plotinus it is the indefinite dyad that actualises itself as *Being*, and for Bergson it is the *élan vital* as an

undifferentiated unity of matter and consciousness. Thirdly, the undifferentiated unity divides itself into opposite tendencies by a movement that is consistent with the generation of a fundamental and its harmonics, and the unlimited becomes limited in the process. For the Pythagoreans we have a table of opposites that divides according to numbers in the *tetractys*; for Plotinus, *Intellect* divides itself, generating substantial numbers as a base for the forms; and for Bergson, the tendencies within the *élan vital* differentiate, generating the rhythms of duration and the differences in numbers behind our distinctions of quality, making the proportional nature of the tendencies in life possible. It is the differences in number that are expressed as ratios, and it has been argued that not only do Plotinus and Bergson imply that they are *musical* ratios, but their philosophies make more sense if they are considered as such. Fourthly, at the moment of *kairos* the opposites coincide, either harmoniously or disharmoniously, generating new nodes or harmonics. For the Pythagoreans this is *harmonia* underpinned by an analogy between microcosm and macrocosm, and cosmic sympathy or resonance, features also found in Plotinus and Bergson. Finally, Bergson and Plotinus replicate the Pythagorean tradition by proposing a philosophy that is an open system of dynamic transformation. The primary difference that separates the Pythagoreans from Plotinus and Bergson is that the latter develop Pythagorean philosophy by utilising the mechanism of harmonic motion by which harmonics are generated, a mechanism that only became apparent with advances in the field of acoustics that were evident in their respective eras.

The proposition that the harmonics model underpins the philosophy of Plotinus and Bergson raises an important question: *Why did they not make their intentions clear?* In respect of Plotinus, the most probable answer is that he followed Plato and the ancient philosophical tradition for whom an ascetic lifestyle, concealment, secrecy

and silence is the norm. Plato, in his *Seventh Letter* also suggests that not everything was written down:

Every serious man in dealing with really serious subjects carefully avoids writing, lest thereby he may possibly cast them as a prey to the envy and stupidity of the public. In one word, then, our conclusion must be that whenever one sees a man's written compositions—whether they be the laws of a legislator or anything else in any other form, - these are not his most serious works (*VIIth Letter*, 344c).

Similarly, Aristotle writes about the *Timeaus* and Plato:

It is true, indeed, that the account he gives there of the participant is different from what he says in his so-called unwritten teaching. (*Physics* 209b 12-14)

Cornford notes that the doctrines of mysticism are secret because they cannot be taught by intellectual processes; they must be experienced in an emotional or non-rational state, and the initiate undergoes purification so that he is most receptive to the experience; however, while the Pythagoreans attempted to intellectualise Orphism, it retained much of its spiritual nature (Cornford, 1912, pp.198-199).

In Chapter 1 it was explained that Plotinus followed the Pythagorean tradition by upholding the view that certain information should not be disclosed to the uninitiated, and in the Preface to *Plotinus: Myth, Metaphor, and Philosophical Practice*, Stephen Clark refers to the propensity of Plotinus to encourage guesswork (Clark, 2016, p. xiii). It is likely that Plotinus remained faithful to his teacher by not openly revealing the elements of Ammonius' teaching that he included in the *Enneads*, and while Plotinus did not follow Plato in using allegory to hide the Pythagorean teachings, he made copious use of metaphors and analogies. It is also important to consider that Porphyry tells us that Plotinus opened his classes to anyone who wanted to be there; it could be

that many of his students had no training in music theory and hence the mathematical aspect of harmonic theory; so, while Plotinus encouraged education in these subjects he may not have considered it appropriate for his audience. On making the statement that “no one ever writes down everything he or she believes”, Clark also provides valuable insight about the nature of an oral tradition: “Plotinus’ seminars took their start from texts and textual commentaries, and that the discipline of philosophy is learned in a long apprenticeship to some master, not just “from books”. Furthermore, that the “living voice” was to be preferred to any written text, as it was only - or at least principally - from such a voice, such a living presence, that we could hope to pick up the things that cannot be said but only shown” (Clark, 2016, p.xiv).

As with Plotinus we find that the model of musical harmonics in Bergson’s texts is not completely hidden and also not that obvious. The mystery of his cosmology in *Creative Evolution* arises from his use of metaphors to explain the mechanism of the impulsion and inversion of the *élan vital* that generates consciousness and matter as independent tendencies, rather than explaining it as a literal process of harmonic generation; however, several other links to the field of harmonics and the Pythagorean tradition have been revealed, though they are speculative. Can it be mere coincidence that Bergson applies a number of Aristoxenus’ arguments to his theories of duration, perception and memory, or that concealed inferences to Pythagoras or Pythagoreanism appear in his work? His references to the *élan vital* as the ‘breath of life’ and ‘earth’s hidden fire’; his example of an ‘anvil and hammer’ and the ‘humming of life’s depths’ as well as his comment on ‘vegetarianism’ are comments that seem to suddenly emerge from nowhere. One or two could be nothing more than coincidence, with no Pythagorean link intended; however, *five*, and there could be more that have gone unnoticed, raise suspicion, especially when considered with the Pythagorean

connection to the harmonics model and *kairos*. Similarly, Bergson's failure to explain that Plotinus' *logos* is substantial number and form *could* imply that like Plotinus he followed the tradition in deliberately adopting an attitude of concealment or secrecy; a further example of 'silentium philosophorum' (Casel, 1919). This may have been prompted by philosophical influences alone; however, it is very likely that it was reinforced by the revival of Pythagoreanism in his era that impacted on his personal life and the wider culture as discussed in Chapter 1. We cannot ignore the fact that Bergson would have been subject to these influences, even if only subconsciously; however subconscious awareness does not appear to be the case because the Pythagorean influence together with the mechanism of harmonics in his work is too precise to be mere coincidence. It is also conceivable that following the praise he received in his day for the novelty of his philosophy, it would have been uncomfortable to acknowledge the Pythagorean influence as it would mean admitting that his philosophy was not as novel as it was assumed to be.

The question of why the harmonics model and Pythagorean influence has not been acknowledged by commentators on Bergson needs to be addressed. It is possible the assumption that Bergson's musical analogies are merely metaphors may have been a distraction, as could a reliance on what is explicit in the text; however, the most likely reason is a lack of understanding of Pythagoreanism and/or the science of harmonics, from both a scientific and musical perspective. Bergson's continual reference to duration as a melody veils the fact that harmonics are also produced temporally and have a geometrical and dynamic aspect that is consistent with his theory of duration. A contributory factor in the lack of understanding about Pythagoreanism could be, as Huffman remarks, that Pythagoreanism is a subject that been ignored by most scholars of ancient history. Bergson does not explicitly refer to Pythagoreanism as having an

influence on him while he does acknowledge Plotinus as his favourite philosopher. The argument presented in Chapters 3 and 4, that Plotinus also employs the harmonics model under a strong Pythagorean influence, has not previously been considered by Plotinian scholars; however the similarities between the philosophies of Bergson, as presented in Chapters 5 and 6, and the new interpretation of Plotinus suggest that Bergson had a much deeper understanding of Plotinus than previously realised; that he was aware of the harmonics model in the *Enneads*, and that Plotinus acted as a catalyst for an additional Pythagorean influence on him. This builds upon the work of Mossé-Bastide who has already examined the similarities in their philosophies.

The nature of secrecy and concealment presents scholars of Bergson and Plotinus with difficult challenges because there is much more buried within the texts than they state explicitly. The method of study employed has therefore necessitated an examination of what they specifically say and speculation on what they do not say; and what has emerged is a new interpretation of both philosophers that makes sense of their philosophies and reinforces the influence of Plotinus on Bergson.

Bibliography

*

Aesop. *Aesop's Fables*, L. Gibbs, trans. Oxford: Oxford University Press (World's Classics), 2008.

Albertson D., 2014. *Mathematical Theologies: Nicholas of Cusa and the Legacy of Thierry of Chartres*. New York: OUP

Alexander of Aphrodisias. *On Aristotle Metaphysics I*, E.W. Dooley, trans. London: Bloomsbury Academic, 1989.

Alexandrakis, A., 2002. The Notion of Beauty in the Structure of the Universe: Pythagorean Influences on Plotinus. In: M. Wagner, ed. *Neoplatonism and Nature. Studies in Plotinus' Enneads*. Albany: SUNY Press, pp. 149 - 156.

Allen, D., 2003. The Flux of Time in Ancient Greece. *Daedalus*, 132(2), pp. 62-73.

Ansell-Pearson, K., 2002. *Philosophy and the Adventure of the Virtual: Bergson and the Time of Life*. London, NY: Routledge.

Ansell-Pearson, K., 2006. Bergson and Creative Evolution/Involution: Exposing the Transcendental Illusion of Organismic Life. In: J. Mullarkey, ed. *The New Bergson*. Manchester:New York: Angelaki Humanities, MUP.

Aquinas. *The "Summa Theologica" of St. Thomas Aquinas. Part I QQ I.-XXVI*. Translated by Fathers of the English Dominican Province. Second and revised edition (London: Burns Oates and Washbourne, 1920).
Available from: http://www.documentacatholicaomnia.eu/03d/1225-1274,_Thomas_Aquinas,_Summa_Theologiae_%5B1%5D,_EN.pdf
[Accessed 19th March 2018]

Ariotti, P.E., 1975. The Concept of Time in Western Antiquity, in *The Study of Time II*, pp. 69–82), J.T.Fraser and N. Lawrence (eds.). New York: Springer-Verlag.

Aristotle. *De anima*. C. Shields, trans. Oxford: Clarendon Press, 2016.

Aristotle. *Eudemian Ethics*. A. Kenny, trans. Oxford: Oxford University Press, 2011.

Aristotle. *Metaphysics*. C.D.C. Reeve, trans. Indianapolis: Hackett Publishing Company. 2016

Aristotle. *On the Heavens*. W. K. C. Guthrie, trans. (Loeb Classical Library No. 338). Cambridge, MA: Harvard University Press, 1939.

Aristotle. *Physics*. R.P. Hardie and R.K. Gaye, trans. Mineola, NY: Dover Publications, 2017.

Aristotle. 'Poetics', in *Aristotle: Poetics; Longinus: On the Sublime; Demetrius: On Style*, S. Halliwell trans. Loeb Classical Library 199. Cambridge, MA: Harvard University Press, 1995.

Aristoxenus. *Elements of Harmonics*. H. S. Macran, trans. Oxford: Clarendon Press, 1902.

Armstrong, A. H., 1966. *Plotinus I*. Cambridge, MA: Harvard University Press.

Armstrong, A. H., 2013. *The Architecture of the Intelligible Universe in the Philosophy of Plotinus*. New York: Cambridge University Press.

Arp, 2004. Plotinus, Mysticism, and Mediation, in *Religious Studies*, (40), 2, pp. 145-163

Audi, R., 2005. *The Cambridge Dictionary of Philosophy*. 2nd revised ed. Cambridge: Cambridge University Press.

Babrius & Phaedrus. B. E. Perry, trans., (Loeb Classical Library No. 436). Cambridge, MA: Harvard University Press, 1989.

Barker, A., 1989. *Greek Musical Writings: Volume 2, Harmonic and Acoustic Theory*. Cambridge: Cambridge University Press.

Barker, A., 2007. *The Science of Harmonics in Classical Greece*. Cambridge: Cambridge University Press.

Barnard, G. W., 2011. *Living Consciousness: The Metaphysical Vision of Henri Bergson*. New York: SUNY.

Barnes, J., 1979. *The Presocratic Philosophers*. London: Routledge and Kegan Paul.

Bergson, H., 1889. *Quid Aristoteles de loco senserit*. Lutetiae Parisiorum, F. Alcan.

Bergson, H., 1889. *Time and Free Will: An Essay on the Immediate Data of Consciousness*. F. L. Pogson, trans. Mineola, New York: Dover, 2001

Bergson, H., 1896. *Matter and Memory*. N.M. Paul and W.S. Palmer, (trans.). Mineola, New York: Dover, 2004.

Bergson, H., 1907. *Creative Evolution*. A. Mitchell, (trans.). Mineola, New York: Dover, 1998.

Bergson, H., 1911. *Laughter: An Essay on the Meaning of the Comic*. C. Brereton and F. Rothwell, (trans.). Mineola, New York: Dover, 2005.

Bergson, H., 1919. *Mind-Energy, Lectures and Essays*. H.W. Carr, (trans.). NY: Henry Holt and Company, 1920.

Bergson, H., 1922. *Duration and Simultaneity*. R. Durie (ed.), L. Jacobson (trans.). Manchester: Clinamen Press, 1999.

Bergson, H., 1932. *The Two Sources of Morality and Religion*. R. A. Audra and C. Brereton, (trans.). Notre Dame, Indiana: University of Notre Dame Press, 2010.

Bergson, H., 1934. *The Creative Mind*. M. L. Andison, (trans.). NY: Citadel Press, 2003.

Bergson, H., 1972. *Mélanges*. Paris: P.U.F.

Bergson, H., 2002. *Correspondances*. Paris: P.U.F

Berkeley, G., 1734. *The Analyst: or, A Discourse Addressed to an Infidel Mathematician*. [Online] Available from: <https://archive.org/details/theanalystoradis00berkuoft> [Accessed 19th October 2017].

Blake, J., 1913-1914. Bergson's Philosophical Position. *Theosophical Quarterly*, Volume XI, pp. 328-339.

Blake, J., 1914. Bergson's Philosophical Position. *Theosophical Quarterly*, Volume XII, pp. 17-28.

Blumenthal, H., 1971. *Plotinus and his Psychology. His Doctrines of the Embodied Soul*. The Hague: Martinus Nijhoff.

Boeckh, A., 1819. *Philolaos des Pythagoreers Lehren nebst den Bruchstücken seines Werkes*. Berlin: Voss.

Bowers, B., 2001. *Sir Charles Wheatstone FRS: 1802-1875*. London: IEE and The Science Museum.

Bréhier, É., 1949. 'Images plotiniennes, images bergsoniennes'. *Études, Les, Bergsoniennes*. Vol. 2. pp.105-128. Paris: Albin Michel.

- Bréhier, É., 1958. *The Philosophy of Plotinus*. Chicago: University of Chicago Press.
- Burkert, W., 1972. *Lore and Science in Ancient Pythagoreanism*. Cambridge: Harvard University Press.
- Burkert, W., 1987. *Ancient Mystery Cults (Carl Newell Jackson Lectures)*. Cambridge, Massachusetts; London: Harvard University Press.
- Bussanich, J. R., 1988. *The One and its Relation to Intellect in Plotinus*. Leiden: E. J. Brill.
- Campbell, E., 2014. *Boulez, Music and Philosophy*. New York: Cambridge University Press.
- Čapek, M., 1971. *Bergson and Modern Physics: A Reinterpretation and Re-evaluation*. Dordrecht: D. Reidel Publishing Company.
- Carbonara, C., 1954. *La Filosofia di Plotino*. Naples: Liberia Scientifica Editrice.
- Carroll, W., 2002. Plotinus on the Origin of Matter. In: M.F.Wagner, ed. *Neoplatonism and Nature. Studies in Plotinus' Enneads*. Albany: SUNY Press, pp. 179-207.
- Carter, M., 1988. Stasis and Kairos: Principles of Social Construction in Classical Rhetoric. *Rhetoric Review*, 7(1), pp. 97 - 112.
- Casel, O., 1919. *De philosophorum graecorum silentio mystico*. Giessen: A. Toepelmann.
- Centrone, B., 2014. The Pseudo-Pythagorean Writings. In: C. Huffman, ed. *A History of Pythagoreanism*. Cambridge: Cambridge University Press, pp. 315-340.
- Chevalier, J., 1926. *Henri Bergson*. L. A. Clare, trans. New York: Macmillan, 1928.
- Chiaradonna, R., 2012. Plotinus' Account of the Cognitive Powers of the Soul: Sense Perception and Discursive Thought. *Topoi*, Issue 31, pp. 191-207.
- Chiaradonna, R., 2015. *Plotinus on Memory, Recollection and Discursive Thought*. Available from: https://www.academia.edu/9578509/_Plotinus_on_Memory_Recollection_and_Discursive_Thought_. In_In_L._Castagnoli_and_P._Ceccarelli_eds._Greek_Memories_Theories_and_Practices_2015_. Penultimate_Draft [Accessed 17th October 2017].
- Clark, G. H., 1944. The Theory of Time in Plotinus. *The Philosophical Review*, Issue 53, pp. 337-358.

Clark, S., 2016. *Plotinus: Myth, Metaphor, and Philosophical Practice*. Chicago, London: The University of Chicago Press.

Clement of Alexandria. *Stromata, or Miscellanies*, Book V, A. Roberts and J Donaldson, trans.
Available from: <http://www.earlychristianwritings.com/text/clement-stromata-book5.html>
[Accessed 17th April 2018].

Consigny, S., 2001. *Gorgias, Sophist and Artist*. Columbia, SC: The University of South Carolina Press.

Cooper, J.W., 2007. *Panentheism: The Other God of the Philosophers: From Plato to the Present*. Grand Rapids, MI: Baker Academic.

Copleston, F., 1993. *History of Philosophy Volume 1: Greece and Rome*. New York: Image.

Cornford, F.M., 1912. *From Religion to Philosophy: A Study in the Origins of Western Speculation*. Princeton University Press (1991)

Cornford, F. M., 1922. Mysticism and Science in the Pythagorean Tradition. *Classical Quarterly*, 16(3/4), pp. 137-150.

Cornford, F. M., 1923. Mysticism and Science in the Pythagorean Tradition (Continued). *The Classical Quarterly*, 17(1), pp. 1-12.

Cornford, F.M., 1935. *Plato's Cosmology: The Timaeus of Plato*. Indianapolis, Indiana: Hackett Publishing Company.

Corrigan, K., 2005. *Reading Plotinus: A Practical Introduction to Neoplatonism*. West Lafayette, IN: Purdue University Press.

Creese, D., 2010. *The Monochord in Ancient Greek Harmonic Science*. Cambridge: Cambridge University Press.

Crickmore, L., 2006. The Musicality of Plato, in *Hermathena*, No. 180, pp. 19-43.

Cymatics Experiment: Singing Into a Tonoscope - Mozart Una Donna a Quindici Anni. 2013. Available from: <https://www.youtube.com/watch?v=mStMS7Qcf1s>.
[Accessed 12 October 2017].

Davis, E. & Taylor, J., 2017. Golden States of Mind: A Geography of California Consciousness. In: S. Brunn, ed. *The Changing World Religion Map: Sacred Places, Identities, Practices and Politics*. Dordrecht: Springer, pp. 1,385-1,404.

- De Vogel, C., 1966. *Pythagoras and Early Pythagoreanism: An Interpretation of Neglected Evidence on the Philosopher Pythagoras*. Assen: Van Gorcum.
- Deck, J. N., 1991. *Nature, Contemplation and the One*. New York: Larson.
- Deleuze, G., 1991. *Bergsonism*. New York: Zone Books.
- Deleuze, 2004. Bergson's Conception of Difference. In: D. Lapoujade & M. Taormina (Trans), eds. *Desert Islands: and Other Texts, 1953--1974*. New York: Semiotext(e), pp. 32-51.
- Deleuze, G. & Guattari, F., 2004. *A Thousand Plateaus: Capitalism and Schizophrenia*. London;New York: Continuum.
- Diels, W. & Kranz, H., 1951. *Fragmente der Vorsokratiker*. 6th ed. Berlin: Weidmann.
- Dillon, J., 2014. Pythagoreanism in the Academic tradition: The Early Academy to Numenius. In: C. A. Huffman, ed. *A History of Pythagoreanism*. Cambridge: Cambridge University Press, pp. 250-273.
- Dobson, J. F., 1919. *The Greek Orators*.
Available from:
<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0075%3Achapter%3D1%3Asection%3D6>
[Accessed 19th February 2016].
- Dodds, E.R., 1928. The Parmenides of Plato and the Origin of the Neoplatonic 'One'. *The Classical Quarterly*, 22 (3/4), pp. 129-142.
- Dodds, E. R., 1960, Numenius and Ammonius, in in E.R Dodds et al, eds., *Les sources de Plotin: dix exposés et discussions. Entretiens Fondation Hardt 5: Vandoeuvres-Genève* , pp. 3-32.
- Duffy, S., 2013. *Deleuze and the History of Mathematics: In Defense of the 'New'*. London:New York: Bloomsbury Academic.
- Durie, R., 2004. The Mathematical Basis of Bergson's Philosophy. *Journal of the British Society for Phenomenology*, 35(1), pp. 54-67.
- Eliasson, E., 2008. *The Notion of That Which Depends On Us in Plotinus and Its Background*. Leiden. Boston: Brill.
- Emilsson, E., 2007. *Plotinus on Intellect*. Oxford: Oxford University Press.
- Emilsson, E. K., 1988. *Plotinus on Sense Perception: A Philosophical Study*. New York: Cambridge University Press.

- Enos, R. L., 1976. The Epistemology of Gorgias' Rhetoric: A Re-examination. *Southern Speech Communication Journal*, 42(1), pp. 35-61.
- Enos, R. L., 2005. Rhetorica ad Herennium. In: M. Ballif & M. Moran, eds. *Classical Rhetorics and Rhetoricians: Critical Studies and Sources*. Westport: Greenwood Press, pp. 331-338.
- Eskin, C., 2002. Hippocrates, Kairos, and Writing in the Sciences. In: P. Sipiora & J. Baumlin, eds. *Rhetoric and Kairos: Essays in History, Theory, and Praxis*. New York: State University of New York Press, pp. 97-113.
- Eunapius. *Eunapius of Sardis. Lives of the Sophists and Philosophers*, W.C. Wright, trans., Loeb Classical Library 134. Cambridge, MA: Harvard University Press, 1921.
- Fourier, J., 1808. Mémoire sur la propagation de la chaleur dans les corps solides. *Nouveau Bulletin des Sciences par la Société philomathique de Paris*, Volume 1, pp. 112-116.
- Fourier, J., 1822. *Théorie analytique de la chaleur*. Paris: Chez Firmin Didot, père et fils
- Foxhall, L., 1995. Women's Ritual and Men's Work in Ancient Athens. In: R. Hawley & B. Levick, eds. *Women in Antiquity: New Assessments*. London, New York: Routledge, pp. 97-110.
- Freely, J., 2012. *The Flame of Miletus: The Birth of Science in Ancient Greece (and How it Changed the World)*. London: New York: I.B Tauris
- Gale, R. M., 1973-1974. Bergson's Analysis of the Concept of Nothing. *The Modern Schoolman*, Volume LI, pp. 269-300.
- Garber, E., 1999. *The Language of Physics: The Calculus and the Development of Theoretical Physics in Europe, 1750-1914*. Boston: Birkhäuser.
- Gebaude, J., 1991. Éclairage sur le kairos à partir de la philosophie de Bergson. *Philosophia (Athens)*, Volume 21-22, pp. 349-357.
- Gersh, S., 2005. Plotinus on Harmonia. Musical Metaphors and their Use in the Enneads. In: J. Dillon & M. Dixsaut, eds. *Agonistes: Essays in Honour of Denis O'Brien*. Aldershot: Ashgate, pp. 195-207.
- Gerson, L. P., 1994. *Plotinus*. London:New York: Routledge.
- Gerson, L., 2012. Plotinus on Logos. In: C. Horn & J. Wilberding, eds. *Neoplatonism and the Philosophy of Nature*. Oxford: OUP, pp. 17-29.

- Goethe, J. W., 1817. *Schriften zur Morphologie*. Berlin: Hofenberg, 2016
- Gouhier, H., 1948. Maine de Biran et Bergson. In: *Les Etudes Bergsoniennes, Vol. I*. Paris: Albin Michel, pp. 129-173.
- Gouk, P., 2006. The Role of Harmonics in the Scientific Revolution. In: T. Christensen, ed. *The Cambridge History of Western Music Theory*. Cambridge: Cambridge University Press, pp. 223-245.
- Green, B. & Butler, D., 2006. From Acoustics to Tonpsychologie. In: T. Christensen, ed. *The Cambridge History of Western Music Theory*. Cambridge: Cambridge University Press, pp. 246-271.
- Greer, M. K., 1996. *Women of the Golden Dawn: Rebels and Priestesses*. Vermont: Inner Traditions Bear and Company.
- Grogin, R., 1988. *The Bergsonian Controversy in France: 1900-1914*. Calgary, Alta: University of Calgary Press.
- Guerlac, S., 2006. *Thinking in Time: An Introduction to Henri Bergson*. London, New York: Cornell University Press.
- Gunn, J. A., 1920 . *Bergson and His Philosophy*. London: Aeterna Press, 2015.
- Gunter, P., 1999. Bergson, Mathematics, and Creativity. *Process Studies*, 28(3/4), pp. 268-288.
Available from: <https://www.religion-online.org/article/bergson-mathematics-and-creativity/>
[Accessed 19th October 2017]
- Gunther, L., 2012. *The Physics of Music and Colour*. New York: Springer.
- Gurtler, G., 2002. Sympathy: Stoic Materialism and the Platonic Soul. In: M.F.Wagner, ed. *Neoplatonism and Nature. Studies in Plotinus' Enneads*. Albany: SUNY Press, pp. 241-276.
- Guthrie, K., 1988. *The Pythagorean Sourcebook and Library*. Michigan: Phanes Press.
- Guthrie, W., 1962. *A History of Greek Philosophy: The earlier Presocratics and the Pythagoreans Volume 1*. Cambridge: Cambridge University Press.
- Hackforth, R., 1972. *Plato's Phaedo*. Cambridge: Cambridge University Press.
- Hadot, P., 1986. Neoplatonist Spirituality, in A.H. Armstrong ed., *Classical Mediterranean Spirituality*. NY: Macmillian

Hadot, P., 1988. *Plotinus or the Simplicity of Vision*. Chicago:London: University of Chicago Press.

Hancock, C. L., 2001. The Influence of Plotinus on Bergson's Critique of Empirical Science. In: R. B. Harris, ed. *Neoplatonism and Contemporary Thought: Part One*. New York: State University of New York Press, pp. 139-159.

Hannah, R., 2005. *Greek and Roman Calendars*. London: Gerald Duckworth & Co Ltd.

Harris, P., 2004. Diagramming Duration: Bergsonian Multiplicity and Chaos Theory. *Intermedialités*. Volume 3, pp. 97-117.

Hatab, L., 1982. Plotinus and the Upanishads, in R. Baine Harris, ed., *Neoplatonism and Indian Thought*. Norfolk, Virginia: State University of New York, pp.5-26.

Heidlebaugh, N., 2001. Judgment, Rhetoric and the Problem of Incommensurability: Recalling Practical Wisdom. Columbia: University of South Carolina Press.

Heinze, 1892. *Xenokrates: Darstellung der Lehre und Sammlung der Fragmente*. Leipzig: B. G. Teubner.

Heisenberg Society, 2017

Available from: <http://www.heisenberg-gesellschaft.de/3-the-development-of-quantum-mechanics-1925-ndash-1927.html>

[Accessed 18th October 2017]

Henry, P., 1960. Discussion of Dorrie's, Die Frage nach dem Transzendenten im Mittelplatonismus, in E.R Dodds et al, eds., *Les sources de Plotin: dix exposés et discussions*. Entretiens Fondation Hardt 5: Vandoeuvres-Genève, pp.236-237.

Hermann, A., 2004. *To Think Like God: Pythagoras and Parmenides, the Origins of Philosophy*. Las Vegas: Parmenides Publishing.

Hermetic Order of the Golden Dawn, 2017

Available from: <https://www.golden-dawn.com/eu/displaycontent.aspx?pageid=144-biography-moina-mathers>

[Accessed 11 October 2017].

Hesiod, *Theogony*. Trans. Hugh G. Evelyn-White, 1914. [Online]

Available from:<http://www.sacred-texts.com/cla/hesiod/theogony.htm>

[Accessed 18th March 2018]

Hesiod, 2008. *Works and Days*. Trans. Hugh G. Evelyn-White, 1914. [Online]

Available from: <http://www.sacred-texts.com/cla/hesiod/works.htm>
[Accessed 17th October 2017]

Higham, T., et al., 2012. Testing models for the beginnings of the Aurignacian and the advent of figurative art and music: the radiocarbon chronology of Geißenklösterle. *Journal of Human Evolution*, June, 62(6), pp. 664-76.

Holwerda, D., 1955. *Commentatio de vocis quae est φύσις vi atque usu praesertim in graecitate Aristotele anteriore*, (Diss). Groningen.

Hude, H., 2000. *Bergson Cours IV: Cours sur la philosophie grecque*. Paris: Presses Universitaires De France.

Huffman, C., 1993. *Philolaus of Croton: Pythagorean and Presocratic*. Cambridge: Cambridge University Press.

Huffman, C., 2005. *Archytas of Tarentum: Pythagorean, Philosopher and Mathematician King*. Cambridge: Cambridge University Press.

Huffman, C., 2014. *A History of Pythagoreanism*. Cambridge: Cambridge University Press.

Huffman, C., 2014. *Pythagoreanism (Stanford Encyclopedia of Philosophy)*. Available from: <https://plato.stanford.edu/entries/pythagoreanism/#fourth>
[Accessed 12th October 2017].

Hunt, J., 1884. *Pantheism and Christianity*. London: Wm. Isbister Ltd.

Hussey, E., 1997. Pythagoreans and Eleatics. In: C. C. W. Taylor, ed. *From the Beginning to Plato*. London: Routledge, pp. 88-128.

Ierodiakonou, K., 2006. The Greek Concept of Sympatheia and Its Byzantine Appropriation in Michael Psellos. In: *The Occult Sciences in Byzantium*. Geneva: La Pomme d'or, pp. 97-117.

Inge, R., 1929. *The Philosophy of Plotinus*, 2 vols. London:, Green and Co.

Irwin, T., 1989. *Classical Thought*. Oxford: Oxford University Press.

Jankélévitch, V., 1959. *Henri Bergson*. Paris: PUF.

Johnstone, C., 2009. *Listening to the Logos*. Columbia, S.C: University of South Carolina Press.

- Joost-Gaugier, C. L., 2007. *Measuring Heaven: Pythagoras and His Influence on Thought and Art in Antiquity and the Middle Ages*. Ithaca, NY: Cornell University Press.
- Kahn, C., 2001. *Pythagoras and the Pythagoreans: A Brief History*. Indianapolis and Cambridge: Hackett Publishing Ltd.
- Katz, J., 1950. *Plotinus' Search for the Good: A Study of the Moral Motivation of His Metaphysics*. NY: Kings Crown Press.
- Katz, S. T., 1978. Language, Epistemology and Mysticism', in S. T. Katz, ed., *Mysticism and Philosophical Analysis*. NY: Oxford University Press, pp. 22-74.
- Kennedy, J. B., 2011 *The Musical Structure of Plato's Dialogues*. Durham: Acumen.
- Kilgour, F., 1963. Vitruvius and the Early History of Wave Theory. *Technology and Culture*, 4(3), pp. 282-286.
- King James Bible, 1611. *GENESIS CHAPTER 1 KJV*
Available from: https://www.kingjamesbibleonline.org/1611_Genesis-Chapter-1/
[Accessed 13 October 2017].
- King, R., 2009. *Aristotle and Plotinus on Memory*. Berlin: Walter de Gruyter.
- Kinneavy, J., 2002. Kairos in Classical and Modern Rhetorical Theory. In: P. Sipiora & J. Baumlin, eds. *Rhetoric and Kairos: Essays in History, Theory, and Praxis*. New York: State University of New York Press, pp. 58-76.
- Kirk, G., Raven, J. & Schofield, M., 1983. *The Presocratic Philosophers*. Cambridge: Cambridge University Press.
- Kosman, A., 2014. *Virtues of Thought: Essays on Plato and Aristotle*. Cambridge, MA: Harvard University Press
- Lacey, A. R., 2008. *Bergson. The Arguments of the Philosophers*. London, NY: Routledge.
- Laloy, L., 1904. *Aristoxène de Tarente et la musique de l'antiquité*. Paris: Société française d'Imprimerie et de Librairie.
- Landels, J., 1979. Water-Clocks and Time Measurement in Classical Antiquity. *Endeavour*, 3(1), pp. 32-37.
- Lauer, J. & Pender, K., 2003. *Invention in Rhetoric and Composition*. Indiana: Parlor Press.

Lawlor, L., 2004. *The Challenge of Bergsonism*. Second ed. NY: London: Continuum.

Le Roy, E., 2005. *A New Philosophy: Henri Bergson*. NY: Cosimo Classics.

Lefebvre, A. & White, M., 2012. *Bergson, Politics, and Religion*. Durham, NC: Duke University Press.

Leroux, G., 1996. Human freedom in the thought of Plotinus. In: L. P. Gerson, ed. *The Cambridge Companion to Plotinus*. Cambridge: Cambridge University Press, pp. 292-314.

Levi, D., 1923. Il kairos attraverso la letteratura greca. *Rendiconti della Reale Accademia Nazionale dei lincei classe di scienza morali*, Issue RV 32, pp. 260-281.

Levi, D., 1924. Il concetto di kairos e la filosofia di Platone. *Rendiconti della Reale Accademia Nazionale dei lincei classe di scienza morali*, Issue RV 33, pp. 93-118.

Levin, F. R., 1972. Synesis in Aristoxenian Theory, Vol. 103. *Transactions and Proceedings of the American Philological Association*, Volume 103, pp. 211-234.

Levin, F.R., 1994. *The Manual of Harmonics of Nicomachus The Pythagorean*. Grand Rapids, Michigan Phanes Press.

Levin, F. R., 2009. *Greek Reflections on the Nature of Music*. Cambridge, New York: Cambridge University Press.

Liddell, H. G. & R. Scott, *A Greek-English Lexicon*.

λόγος - Available from:

<http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.04.0057:entry=lo/gos>
[Accessed 13 October 2017].

Liddell H. G., Robert Scott, *A Greek-English Lexicon*.

καιρός - Available at:

http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.04.0057:entry=kairo/s_1
[Accessed 16th October 2017].

Lloyd, A., 1987. Plotinus on the Genesis of Thought and Existence. *Oxford Studies in Ancient Philosophy*, Volume 5, pp. 155-86.

Locke, J., 1689. *An Essay Concerning Human Understanding*. R. Woolhouse, ed. London: Penguin, 1997.

Lorend, R., 1992. Bergson's Concept of Order. *Journal of the History of Philosophy*, 30(4), pp. 579-595.

- Lovejoy, A., 1912. The Problems of Time in Recent French Philosophy. *The Philosophical Review*, Volume XXI, pp. 328-329.
- Lovejoy, A., 1913. The Practical Tendencies of Bergsonism. *International Journal of Ethics*, 23(3), pp. 254-255.
- Lutzow, T., 1977. The Structure of the Free Act in Bergson. *Process Studies*, 7(2), pp. 73-89.
Available from: <https://www.religion-online.org/article/the-structure-of-the-free-act-in-bergson/>
[Accessed 14th October 2017]
- MacKenna, S., 1992. *Plotinus: The Enneads*. Burdett, NY: Larson Publications.
- Maconie, R., 1997. *The Science of Music*. Oxford: OUP.
- Majumdar, D., 2007. *Plotinus on the Appearance of Time and the World of Sense: A Pantomime*. Aldershot and Burlington, VT: Ashgate.
- Mamo, P., 1976. Is Plotinian Mysticism Monistic? In R. Baine Harris, ed., *The Significance of Neoplatonism*. Norfolk, Virginia: State University of New York, pp. 199-215.
- Marcel, G, 2005. *Music and Philosophy*, S. Maddux and R.E. Wood (trans.). Milwaukee, WI: Marquette University Press.
- Maritain, J., 1968. *Bergsonian Philosophy and Thomism*. New York: Greenwood Press.
- Marušič, J., 2008. *PLATO AND THE POETS. Epistemological, Ethical and Ontological Arguments in the Dialogues*, PhD thesis, Edinburgh University.
Available at:
<https://www.era.lib.ed.ac.uk/bitstream/handle/1842/3306/Marusic2008.pdf?sequence=1&isAllowed=y>
[Accessed 19th March 2018]
- Maxwell, J.C., 1865. A Dynamical Theory of the Electromagnetic Field, *Philosophical Transactions of the Royal Society of London*. 1865 vol. 155 459-512.
- May, W. E. 1970. The Reality of Matter in the Metaphysics of Bergson. *International Philosophical Quarterly*, Volume X, pp. 611-42.
- McClain, E. G., 1978. *Pythagorean Plato: Prelude to the Song Itself*. Maine: Nicolas-Hays.
- McNamara, P., 1999. *Mind and Variability: Mental Darwinism, Memory, and Self*. Westport: Praeger.

Merlan, P., 1963. *Monopsychism, Mysticism, Metaconsciousness: Problems of the Soul in the Neoaristotelian and Neoplatonic Tradition*. The Hague: Martinus Nijhoff.

Merleau-Ponty, M., 1964. *Signs*. Illinois: Northwestern University Press.

Mersenne, M., 1627. *Traité de l'harmonie universelle*. Paris: Fayard, 2003.

Millet, J., 1974. *Bergson et le calcul infinitésimal, ou La raison et le temps*. Paris: P.U.F.

Millet, J., 1987. Bergsonian Epistemology and its Origins in Mathematical Thought. In: A. Papanicolaou & P. Gunter, eds. *Bergson and Modern Thought: Towards a Unified Science*. New York: Harwood Academic, pp. 29-37.

Moro Tornese, S.F., 2010. *Philosophy of Music in the Neoplatonic Tradition: Theories of Music and Harmony in Proclus' Commentaries on Plato's "Timaeus" and "Republic"*. (Doctoral Thesis)

Available from:

https://pure.royalholloway.ac.uk/portal/files/17238362/sebastian_moro_thesis_final_version.pdf

[Accessed 19th October 2017]

Moro Tornese, S.F., 2017. The Metaphysical Meaning of the Musical Scale of Plato's Timaeus in Proclus, in *Reason and No-reason from Ancient Philosophy to Neurosciences. Old parameters, new perspectives*. Academia Verlag, pp.79-104.

Mossé-Bastide, R.-M., 1959. *Bergson et Plotin*. Paris: P.U.F.

Moulard-Leonard, V., 2008. *Bergson-Deleuze Encounters: Transcendental Experience and the Thought of the Virtual*. Albany, NY: State University of New York Press.

Mourelatos, A.P.D., 2006. The Concept of the Universal in Some Later Pre-Platonic Cosmologists. In: M. L. Gill & P. Pellegrin, eds. *A Companion to Ancient Philosophy*. Oxford: Blackwell, pp. 56-76.

Moutsopoulos, É., 1984. Kairos et activité kairique chez Plotin. *Estudios Clasicos*, 26(87), pp. 443-447.

Moutsopoulos, É., 1991. *Kairos: la mise et l'enjeu*. Paris: J. Vrin.

Mullarkey, J., 2000. *Bergson and Philosophy*. London:New York: Routledge.

Mullarkey, J., 2004. Forget the Virtual: Bergson, Actualism, and the Refraction of Reality. *Continental Philosophy Review*, Issue 37, p. 469–493.

Murchie, G., 1961. *Music of the Spheres*. Cambridge, Mass.: Houghton Mifflin.

- Murry, J., 1951. The Ascent of Plotinus to God, in *Gregorianum* 32, pp. 223-246.
- Naddaf, G., 2005. *The Greek Concept of Nature*. New York: State University of New York Press.
- Narbonne, J.-M., 2011. *Plotinus in Dialogue with the Gnostics*. Leiden, Boston: Brill.
- Nikulin, D., 2002. *Matter, Imagination and Geometry: Ontology, Natural Philosophy and Mathematics in Plotinus, Proclus and Descartes*. Aldershot: Ashgate.
- O'Meara, D. J., 1999. The Hierarchical Ordering of Reality in Plotinus. In: L. P. Gerson, ed. *The Cambridge Companion to Plotinus*. Cambridge: Cambridge University Press, pp. 66-81.
- O'Meara, D. J., 2014. Iamblichus' *On the Pythagorean Life* in context. In: C. A. Huffman, ed. *A History of Pythagoreanism*. Cambridge: Cambridge University Press, pp. 399-415.
- Ousager, A., 2005. *Plotinus: On Selfhood, Freedom and Politics*. Aarhus, Denmark: Aarhus University Press.
- Owen, A., 2004. *The Place of Enchantment: British Occultism and the Culture of the Modern*. Chicago and London: University of Chicago Press.
- Panaiotidi, E., 2014. 'The Same Thing in Another Medium' Plotinus' Notion of Music. *Ancient Philosophy*, 43(2), pp. 393-414.
- Pelosi, F., 2010. *Plato on Music, Soul and Body*. Cambridge: Cambridge University Press.
- Pesic, P., 2014. *Music and the Making of Modern Science*. Massachusetts: MIT Press.
- Pistorius, P.V., 1952. *Plotinus and Neoplatonism: An Introductory Study*. Cambridge: Bowes & Bowes.
- Plato. *Euthyphro. Apology. Crito. Phaedo. Phaedrus*. H. N. Fowler, trans. Loeb Classical Library 36. Cambridge, MA: Harvard University Press, 1914.
- Plato, 'Ion', in *Statesman, Philebus, Ion*, trans. H.N.Fowler and W. R. M. Lamb. Loeb Classical Library 164. Cambridge, MA: Harvard University Press, 1925.
- Plato. Letters, Letter 7, section 344c
Available from:
<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0164%3Aletter%3D7%3Asection%3D344c>
[Accessed 14th October 2017]

- Plato, *The Republic*, trans.D.Lee. London: Penquin Books. 2003
- Plato. *Timaeus*. Donald J. Zeyl, trans. Indianapolis: Hackett Publishing. 2000
- Plotinus. *Ennead, Volume I: Porphyry on the Life of Plotinus. Ennead I*. A. H. Armstrong, trans. Loeb Classical Library 440. Cambridge, MA: Harvard University Press, 1969.
- Plotinus. *Ennead, Volume II*. A. H. Armstrong, trans. Loeb Classical Library 441. Cambridge, MA: Harvard University Press, 1966.
- Plotinus. *Ennead, Volume III*. A. H. Armstrong, trans. Loeb Classical Library 442. Cambridge, MA: Harvard University Press, 1984.
- Plotinus. *Ennead, Volume IV*. A. H. Armstrong, trans. Loeb Classical Library 443. Cambridge, MA: Harvard University Press, 1966.
- Plotinus. *Ennead, Volume V*. A. H. Armstrong, trans. Loeb Classical Library 444. Cambridge, MA: Harvard University Press, 1984.
- Plotinus. *Ennead, Volume VI: 1-5*. A. H. Armstrong, trans. Loeb Classical Library 445. Cambridge, MA: Harvard University Press, 1988.
- Plotinus. *Ennead, Volume VI: 6-9*. A. H. Armstrong, trans. Loeb Classical Library 468. Cambridge, MA: Harvard University Press, 1988.
- Plotnitsky, A., 2009. Bernhard Riemann's Conceptual mathematics and the Idea of Space. *Configurations*, 17(1-2), pp. 105-130.
- Pollitt, J., 1986. *Art in the Hellenistic Age*. Cambridge: Cambridge University Press.
- Preus, A., 2007. *Historical Dictionary of Ancient Greek Philosophy*. Lanham, MD: Scarecrow Press.
- Race, W., 1981. The Word *καίρός* in Greek Drama. *Transactions and Proceedings of the American Philological Association*. 111, pp. 197-214
- Rao, S., 2007. *Vibration of Continuous Systems*. Hoboken, NJ: John Wiley & Sons.
- Rault, L., 2000. *Musical Instruments: A Worldwide Survey of Traditional Music-making*. London: Thames & Hudson Ltd.
- Raven, J. E., 1981. *Pythagoreans and Eleatics*. Chicago: Ares Publishing.
- Remes, P., 2007. *Plotinus on Self: The Philosophy of the 'We'*. New York: Cambridge University Press.

- David G. Rice, D.G., & Stambaugh, J.E., 2009. *Sources for the Study of Greek Religion*. Society of Biblical Literature
- Riedweg, C., 2008. *Pythagoras: His Life, Teaching, and Influence*. Ithaca and London: Cornell University Press.
- Rist, J.M., 1962. The Indefinite Dyad and Intelligible Matter in Plotinus. *The Classical Quarterly*, 12 (1), pp.99-107.
- Rist, J.M. 1962. The Neoplatonic One and Plato's Parmenides. *Transactions and Proceedings of the American Philological Association*, 93, pp. 389-401
- Rist, J.M., 1963. Forms of Individuals in Plotinus. *The Classical Quarterly*, 13 (2), pp.223-231.
- Rist, J. M., 1965. Monism: Plotinus and Some Predecessors, in, *Harvard Studies in Classical Philology*, Issue 69, pp. 329-344.
- Rist, J. M., 1977. *The Road to Reality*. Cambridge: Cambridge University Press.
- Rist, J. M., 1989. Back to the Mysticism of Plotinus: Some More Specifics, in *Journal of the History of Philosophy*, (27), 2, pp.183-197.
- Roederer, J., 2008. *The Physics and Psychophysics of Music: An Introduction*. 4th ed. New York: Springer.
- Root-Bernstein, R. & Root-Bernstein, M., 1999. *Sparks of Genius: The Thirteen Thinking Tools of the World's Most Creative People*. New York: Houghton Mifflin.
- Rossing, T. D., 1982. *The Science of Sound*. Reading, Massachusetts: Addison-Wesley Publishing Co.
- Rostagni, A., 1922. Un nouvo capitolo nella storia retorica e della sofistica. *Studi italiani di filologica classica*, Issue 2, pp. 148-201.
- Sachs, C., 1940. *The History of Musical Instruments*. New York: Dover Publications.
- Samuel, A. E., 1972. *Greek and Roman Chronology: Calendars and Years in Classical Antiquity*. Munich: C.H. Beck
- Schibli, H. S., 1996. On 'The One' in Philolaus, Fragment 7. *The Classical Quarterly, New Series*, 46(1), pp. 114-130.
- Schrenk, L.P., 1994. World as Structure: The Ontology of Philolaus of Croton. *Apeiron* 27 (3), pp. 171-190

Schürmann, R., 2002. The One: Substance or Function. In: M. Wagner, ed. *Neoplatonism and Nature: Studies in Plotinus' Enneads*. Albany: State University of New York Press, pp. 157-177.

Sextus Empiricus. *Against the Professors*, R. G. Bury trans. Loeb Classical Library 382. Cambridge, MA: Harvard University Press, 1949.

Sipiora, P., 2002. Introduction: The Ancient Concept of Kairos. In: P. Sipiora & J. Baumlin, eds. *Rhetoric and Kairos: Essays in History, Theory, and Praxis*. New York: State University of New York Press, pp. 1-22.

Slaveva-Griffin, S., 2009. *Plotinus on Number*. New York: Oxford University Press.

Sleeman J. H. & Pollet G., 1980. *Lexicon Plotinianum*. Leuven: Leuven University Press.

Sloane, T., 2001. *Encyclopedia of Rhetoric: Volume 1*. New York: Oxford University Press.

Smith, A., 1996. Eternity and Time. In: L. P. Gerson, ed. *The Cambridge Companion to Plotinus*. Cambridge: Cambridge University Press, pp. 196-216.

Smith, J., 2002. Time and Qualitative Time. In: P. Sipiora & J. Baumlin, eds. *Rhetoric and Kairos: Essays in History, Theory and Praxis*. New York: State University of New York Press.

Stamatellos, G., 2007. *Plotinus and the Presocratics*. Albany, NY: State University of New York Press.

Taylor, A. E., 1911. Review of Matter and Memory by Henri Bergson. *International Journal of Ethics*, Volume XXII, pp. 101-107.

Taylor, T., 1986. *Iamblichus' Life of Pythagoras*. Rochester, Vermont: Inner Traditions Bear and Company.

Tonquédec, P., 1912. M. Bergson est-il moniste? *Etudes religieuses, historiques et littéraires, par des pères de la Compagnie de Jésus*, 130(1), pp.505-516.

Trehub, S. E., 2014. The Music Listening Skills of Infants and Young Children. In: T. J. Tighe & W. Jay Dowling, eds. *Psychology and Music: The Understanding of Melody and Rhythm*. NY: Psychology Press, pp. 161-176.

Trouillard, J., 1955. *La procession Plotinienne*. Paris: PUF

Untersteiner, M., 1948. *The Sophists*. K. Freeman, trans. Oxford: Basil Blackwell, 1954.

- Viltanioti, I.-F., 2012. Powers as the Fundamental Entities in Philolaus' Ontology. *Journal of Ancient Philosophy*, VI(2), pp.1-31.
- Vitruvius. *Ten Books on Architecture*. Cambridge: Harvard University Press, 1914.
- Von Helmholtz, H. L. F., 1863. *On the Sensations of Tone*. A. J. Ellis, trans. (1885). New York: Cosimo Classics, 2007.
- Wagner, M. F., 2008. *The Enigmatic Reality of Time. Aristotle, Plotinus, and Today*. Leiden. Boston: Brill.
- Walden, D., 2014. Frozen Music: Music and Architecture in Vitruvius' 'De Architectura'. *Greek and Roman Musical Studies*, Volume 2, pp. 124-145.
- Warren, E., 1965. Memory in Plotinus. *The Classical Quarterly, New Series*, 15(2), pp. 252-260.
- Warren, E., 1966. Imagination in Plotinus. *The Classical Quarterly, New Series*, 16(2), pp. 277-285.
- Wehrli, F., 1967. *Die Schule des Aristoteles, vol. 2: Aristoxenos, 2nd. ed.* Basel/Stuttgart: Schwabe.
- Werner, C. H., 1938. *La Philosophie Greque*. Paris: Payot.
- Westra, L., 1990. *Plotinus and Freedom: A Meditation on Enneads 6:8*. New York: Edwin Mellen Press.
- Westra, L., 2002. Freedom and Providence in Plotinus. In: M. F. Wagner, ed. *Neoplatonism and Nature: Studies in Plotinus' Enneads*. New York: SUNY, pp. 125-148.
- White, E. C., 1987. *Kaironomia: On the Will-to-Invent*. Ithaca: Cornell University Press.
- Wilson, J., 1981. Kairos as Profit. *The Classical Quarterly, New Series*, 31(2), pp. 418-420.
- Witt, R. E., 1931. The Plotinian Logos and Its Stoic Basis. *The Classical Quarterly*, 25(2), pp. 103-111.
- Wollenberg, S., 2006. Music and Mathematics: an Overview. In: J. Fauvel, R. Flood & R. J. Wilson, eds. *Music and Mathematics: From Pythagoras to Fractals*. Oxford: OUP, pp. 1-9.

Worms, F., 2005. Time Thinking: Bergson's Double Philosophy of Mind. *MLN*, 120 (5), pp. 1226-1234.

Zeller, E., 1881. *A History of Greek Philosophy : from the earliest period to the time of Socrates, with a general introduction*, Trans. S.F Alleyne. [Online]
Available from: <http://archive.org/details/cu31924032290920>
[Accessed 12 October 2017].

Zhmud, L., 1994. *Pythagoras and the Early Pythagoreans*. 2012 ed. Oxford: OUP.

Zhmud, L., 1998. Some Notes on Philolaus and the Pythagoreans. *Hyperboreus*, 4 (2), pp. 243-270.

Bergson, Plotinus and the Harmonics of Evolution

Appendix 1

*

BERGSON

COURS IV

Cours sur la philosophie grecque

Henri Hude, 2000. Presses Universitaires de France

Introduction - IV – The Black Notebook (Université de Clermont-Ferrand, 1884-1885)

Translated by Lynn Hubbard

Notes on Translation

1. Presses Universitaires de France have kindly granted permission for this translation to be included in the thesis on the condition that it is neither reproduced nor marketed commercially.
2. Page numbers in brackets relate to the page numbers in the book.
3. Footnote numbers have been changed from original publication for ease of use and the associated notes appear at the end of the Introduction.

[p.11] If a document of great historical-philosophical interest exists within the corpus of Bergson's Lectures, it is the Black Notebook¹. This course was recorded by anonymous students, in a notebook with a black cover. André Ombredane² was in possession of this book for a time and he donated it to Jean Guitton³, who passed it on to us. It is not known when and how Ombredane had come to own it, but the style is quite clear, brief, serious and direct, so that there is no doubt that it is attributed to Bergson. The writing is not Bergson's. It is also not unique. Many scribes have succeeded each other, with each one making approximately ten pages of notes. We are presented with a notebook of the class, on the model imposed by Émile Boutroux at the École Normale Supérieure. One student has the responsibility for taking notes for each lecture, and they are all reread by the teacher/professor. The text can be stored in the class library where it can be referred to by the students. However, this is not a lecture course that Bergson would have received from Boutroux, because he quotes a work of Évellin that was published in 1881, after Bergson had left the École normale. Moreover, it is neither the style nor the general philosophy of Boutroux. The main influence exerted here is that of Zeller⁴, who [p.12] Boutroux had translated at the time when Bergson was a pupil of the latter at the École Normale.

As regards the form, in the Black Notebook we find the manner of Professor Bergson's inner rhythm, his mode of explanation. As for its substance, firstly we find many of his familiar references. For example, Bergson made reference to Évellin's *Infinity and Quantity*, 1881, which he quoted in *Time and Free Will*⁵. His course on Socrates draws heavily upon that of Boutroux on the same subject, as do his strong references to Zeller⁶. Furthermore, we find the core interests, the problems and theories of Bergson's *Essai*. The Ionians are presented as physicists and most of the Presocratics are studied from the standpoint of the philosophy of science. The Eleatics are the subject of special attention (two lessons). Zeno's arguments are detailed and examined with the greatest care.

In the Black Notebook at the end of the lecture on Zeno of Elea is the following: "In any event, you should always accept, in the presence of motion, that reality is absurd or an illusion" (vol. IV p.179), which is a hollowing, or an inversion, of the germinal Bergsonian intuition. Here we have the main philosophical document on which Bergsonism was born, or rather about to be born. Without being overly romantic, it is possible to imagine Bergson walking in the main square of Clermont, turning this amazing formula over in his mind, until the intuition of duration emerges,

the formula of which was only indicated by the presence of the paradox⁷. It also demonstrates the date of the course, the oldest that we have of Bergson. But let us return to the subject of its date.

Henri Gouhier once said to me: While it is obviously after 1881, the date of Évellin's book, this course is no less obviously prior to 1896, the date of the publication of *Matter and Memory*. In fact you will notice that in the Black Notebook, Bergson explicitly rejects the fourth argument of Zeno of Elea, the stadium, and is only interested in the first three, since in his eyes only they are worthy of consideration. However, in *Matter and Memory*, p.328 a significant note [p.13] rehabilitates the stadium argument and concludes: "The fourth argument is exactly the same as the other three." The notes in the Black Notebook have therefore been taken between 1881 and 1896. Could we narrow it down?

Both the level and type of education given in the Black Notebook make it unsuitable for pupils in the Baccalauréat class, and for pupils in the second year preparatory class for literary studies [at the Écoles Normales Supérieures], for whom it would be far too scholarly and meticulous. Rather, it seems to be intended for philosophy students. But additionally, it is difficult to compare it with the unconventional style, the brilliance of expression and the masterful authority in the course on Plotinus taught at the École Normale. It therefore could not have been delivered there or at the Collège de France. Bergson's only university teaching that can match the characteristics of the Black Notebook was during the years when he was teaching at the University of Clermont, between February 1884 and June 1888. We can therefore date the Black Notebook to that period.

Let us reconsider the list of courses for which Bergson was responsible over several years at this university⁸. Bergson, among others, was responsible for a comprehensive education in the history of Greek philosophy. The Black Notebook is probably the first of the courses; the final one is lost, or currently misplaced. Since he chose to teach Greek philosophy in chronological order, can we say that common sense tells us that the Black Notebook relates Bergson's first ever academic teaching at Clermont? In our opinion, the reading makes it extremely likely. We conclude that the Black Notebook dates from 1884 or 1885 at the latest.

It contains the first third of a course Bergson devoted to the history of Greek philosophy from Thales to Plato. The book is full. The presentation of Plato begins in

the last few pages and had to continue in another book, because there is no trace of any conclusion whatsoever in the last page of the book.

There are therefore four texts and courses presented in this fourth and final volume.

These courses are edited with the accompaniment of notes, the addition of which obeys the following rules: 1. To indicate when necessary, or suggest, parallels within the *Course* or to locations in Bergson's works. 2. To clarify the main references and identify the main quotations, especially when it may support better reading, without breaking it up more than is reasonable. 3. Indicate places where the Course permits, or where we are required, to clarify the interpretation of the works. 4. Not to smother Bergson's text in an extravagance or a wealth of Hellenistic scholarship, claiming to clarify it, which would risk distorting Bergson's undertaking. Bergson remains a bold and creative thinker [p.14] for whom knowledge of opinions and doctrines is never a means towards the knowledge of things.

This volume, like the previous three, is content with providing texts to feed reflection on philosophers and hopes to contribute to the revival of Bergson studies.

The Introduction is not the place to present the conclusions for which we have grounds, particularly concerning the origin and the deep logical sequencing of the various works published by Bergson. Let's just say that he draws extensively upon the Stoics; that with Plotinus he leaves aside everything Platonic (in the sense he intends, that is to say, the theory of ideas and the interpretation given to it) and brings a Jewish or Christian influence to his thinking of the One. The universe is a sympathetic whole and a double process of materialization/spiritualisation, as we see in *Matter and Memory*. It is also a process of pluralisation. But Bergson reverses the Plotinian system. Pluralisation goes in the direction of spiritualisation. The future is not a deprivation of the Absolute but a glory for God. Above all, the system of necessity must leave scope for the narrative of a universal history where the free personality is the unsurpassable term of all change, and which expresses itself as an act of divine freedom: hence, *Creative Evolution*. But from the outset ecstasy is always seen as a summit to discover, hence *The Two Sources of Morality and Religion*.

If it does not present in detail the image of the history of Greek philosophy that emerges from Bergson's courses, it cannot avoid saying a word about it, brief and to the point. Bergson is primarily interested in the Ionians, and Heraclitus, as physicists. He opposed the Eleatics from the outset. He appreciates Socrates as a mystic and that

he was concerned with moral existence. He retains very little of Plato and bypasses the philosophy of Ideas; also Zenoism. He appreciates Aristotle, whose realism and intuitions are an approximation of his own thought. He returns however to the Ionians, via the Stoics, but goes further than Plotinus. He is Plotinian a little like Marx was Hegelian. Bergson seems to have thought that the system of Plotinus was upside down, and he was putting it back on his feet. The fall of the soul becomes the ascendancy of the soul. Action is not a diminution but a fulfilment in which even ecstasy has to develop so that mysticism is complete. The ineffable One is also as personal as possible. The point of view of the culture of the free personality undoubtedly takes it on to that of reabsorption within the whole⁹. The general spirit is unmistakably mystic, but a mysticism that he would like to make as positive as possible.

These courses of Bergson help us to know his specific thinking on a large number of subjects, on the condition that a precise [p.15] method of appropriate interpretation has been developed. The principle of such a method lies initially in the precise comprehension of the conceptions/ impressions Bergson had from studying the philosophical doctrines.

Take a doctrine studied (e.g., that of Plotinus, the Stoics, etc.). Bergson always presented it as a doctrine in itself, impersonal and scientific in the broad sense, that is to say, based on experience that is theoretically renewable and the arguments critically analysable¹⁰. This is not an object of history, in the sense that it would be a lifeless object: it is a thought that is always possible, always possibly living, provided that one can revive it¹¹; and considered as always possibly true of a rational truth. Bergson's outlines are mostly "objective", but when he takes the point of view of the author studied (e.g., Plotinus), it is not as if it were a question of him coinciding with a process of thought which would be constitutive of its object. Bergson is indeed realistic. Rather, he thus adopts in his reading the conduct of a friend of the author, who would like to coincide with the view and the certainty which the author himself had of certain things existing in them, and which the friend would like to be able to see as the author himself says to have seen them. In the end, it may therefore be an agreement and understanding of the community view. The interpretation is thus an effort to review what has been seen and critically to ensure an effective identity between what was seen by the friend and what had been seen by the author.

The interpretation of what has been said is only possible with a view of the thing about which it is spoken, and the interpretation of ideas cannot be separated from a judgment about the truth or falsity of the ideas. Historical objectivity is thus possible only by philosophical judgment, provided that the latter is not the effect of a reconstruction *a priori*¹².

There is often disagreement; the friend (e.g. Bergson) including well what appeared to the author (e.g., Plotinus), but also including how and why the author could say that he had seen this or that, when he had not seen it accurately. However, the unwritten law of the explanation of the doctrine is that a friend of the author does not always express his own judgment, rather disappearing behind the thought of the author. And yet, if a presentation is lively, the friend has his judgement but does not allow it to penetrate in the same way as when he presents the thought of the author. As friends of Bergson, our problem consists in discovering his thoughts about certain things; finding his unspoken judgment wrapped up in the way he explains another author's words about [p.16] certain things in question. Undoubtedly this is a very general rule of hermeneutics, but it is particularly challenging in the case of the study of Bergson. The comprehension of Bergsonian realism requires hermeneutics that is itself realistic. Sometimes, when making notes, we engage in exercises of this kind in order to illustrate a possible method and make suggestions.

Such a method naturally presupposes that we have a personal course and it is good that Bergson speaks while engaging personally, albeit discreetly, with his thinker's authority. However, such is generally the case.

It would be surprising if we only wanted to judge the Course of Professor Bergson by subsuming these "Bergson's lectures on philosophy" under the general idea of "philosophy lectures" and that of "Bergson's lectures" under that of "lectures in general". These are only general ideas, while they are a summary of a set of experiences of a collection of individuals whose average level is, by definition, average. But we must judge things on the basis of their most complete copies.

Having claimed to deduce that a Bergson lecture would necessarily be impersonal because a lecture tends to be rather impersonal, and that a teacher would not think much because otherwise he would not be teaching, he must be resolved to state a fact, always being strong enough to work through what we imagine to be a principle: with Bergson we have a thinker who teaches as a thinker teaching, freely sovereign, admirable and gushing creativity, armed with the undivided fullness of his power to

see and judge. The commonplace parts of his lectures are there to heighten the most relevant; just as one needs wood to make the strings resonate. The radiance of his teaching has no explanation other than the manifestation of his genius. Bergson reminds us that a civil servant who helps a student to acquire a diploma can also be a master who helps a disciple to walk towards the truth. He reminds all teachers of the nobility of their profession. Everything one says is forgotten, the dust settles, only the sacred fire and Life remain.

This Volume IV concludes the publication of Bergson's Lectures, an undertaking of 15 years. My gratitude goes first to Annie Neuberger, niece of the philosopher, his worthy successor; then to Jean Guilton and to the memory of Henri Gouhier, two unforgettable masters; to Françoise Vinel and Remi Brague, whose collaboration was so valuable; to Jean-Louis Dumas, Catherine Brisson, Thibaud Collin, always faithful; to Peter Magnard, generous friend; to Jean-Luc Marion, who hosts this prestigious work in the "Epimetheus" collection; to Claire.

Notes

1. This whole section is a reproduction of that found under the title *The Black Notebook* in the second volume of Henri Hude, *Bergson, I*, Paris, Editions Universitaires, 1990, p.108 sq.
2. This philosopher entered the *École normale* in 1919, in the class of demobilized soldiers, André Ombredane died prematurely in 1934. Jean Guilton knew him during their schooling at rue d'Ulm. He should not be confused with his distant relative, Dr. A. Ombredane, celebrated author of a thesis on aphasia.
3. We know that in his will Bergson appointed Jean Guilton and several others, including J. Wahl and W. Jankélévitch, to preserve his memory.
4. E. Zeller, *Die Philosophie der Griechen in ihrer geschichtlichen Entwicklung*, 3 t., 1869-1881, trans. E. Boutroux, *La philosophie des Grecs*, t. 1, 1877; Boutroux translated t.2 in 1884. Bergson uses Zeller as a template and builds his bibliographic information on it; that does not mean that he simply repeats Zeller and works second-hand. See notes on *le Cours sur Plotin*, n^{os} 73, 89, 90, etc. Our references to the work of Zeller are given according to the 7th ed., 1963, reprint, for t.1, 6th ed. leipzig, 1919, and for the t.2, the 6th ed. Leipzig, 1922.
5. *Essai sur les données immédiates de la conscience*, p.76. Other references in the course of metaphysics at Lycée de Clermont-Ferrand, *Cours*, vol.1, p.336, and subsequently in *L'évolution créatrice*, p.758, in a note.

6. See above n.32 and the last in the notes of the Cours sur Plotin, n.76; in the notes of The Black Notebook, n.1, 8, 24,79 etc.
7. *La pensée et le mouvant*, p.1254 sq.
8. *Melanges*, p.332
9. Henri Hude, *Bergson*, 11, Paris, Éditions Universitaires, 1990, p.83
10. What is said here of Bergson does not contradict what he wrote in *La pensée et le mouvant*, p.1431. See for example, Cahier Noir, vol IV, p.2-3.
11. *La pensée et le mouvant*, p.1351
12. See for example in the Cours sur Plotin, manuscript, p.28, vol.IV, p.28, the critique of Kirchner's book, *Die philosophie des Plotin*, 1854.

Henri Hude
15th August 2000

Bergson, Plotinus and the Harmonics of Evolution

Appendix 2

BERGSON

COURS IV

Cours sur la philosophie grecque

Henri Hude, 2000. Presses Universitaires de France

IV – The Black Notebook

(Université de Clermont- Ferrand, 1884-1885)

Translated by Lynn Hubbard

XI – The Pythagoreans

Notes on Translation

1. Presses Universitaires de France have kindly granted permission for this translation to be included in the thesis on the condition that it is neither reproduced nor marketed commercially.
2. Page numbers in brackets relate to the page numbers in the book.
3. This translation only refers to part of Chapter 4. Hude's footnote numbers are as printed in the book and the corresponding notes are given at the end of the lecture, as in the book.

[p.180] Sources currently available are numerous. One finds a wealth of alleged references in Diogenes, Proclus, Stobaeus. We even have texts claimed to be written by Pythagoras; [p. 181] but there is evidence that the texts are not authentic. Furthermore, it has pretty much been shown that there was no disclosure of Pythagoreanism before Philolaus the Pythagorean. It is therefore possible that the fragments of Philolaus are genuine, but those attributed to earlier philosophers may be regarded as dubious.

Intermediary sources are considerable but most unreliable. During the third and second centuries, a kind of Pythagorean legend develops, and at the time of neo-Pythagoreanism, a host of texts appear that have the effect of Pythagoreanism, but these writings only resemble theories of Pythagoras to a small degree. It is true to say that by way of authentic documents, we only have Aristotle's texts, and the most accurate and reliable information comes from commentators of Aristotle who merely repeat him. We shall therefore refer to him.

In summary, the authentic immediate sources are meagre: the pieces of information are few, but probably accurate. As for the later sources, since they only repeat Aristotle they have no value. It is therefore difficult to study the doctrine of each particular Pythagorean, so we shall study Pythagoreanism in general.

Pythagoras, born in Samos between 584 and 581 BC, came to Italy between 544 and 542. He undertook several journeys. He founded a kind of moral and political religious society at Croton, in Magna Graecia. The tendency of this association was aristocratic. Nevertheless, there he preached to the community about well-being. An initiation was a prerequisite for entering the Society. Silence was imposed on novices. They recognised each other by using mysterious signs. Perhaps this information is not authentic, but it is interesting because it confirms the opinion that we have of Pythagoreanism: that this doctrine probably is of foreign oriental origin. In any event, its political character proved fatal. Pythagoras, driven out of Croton, died in Metapontum.

Other Pythagoreans lived outside Italy: Philolaus, Lysis, Timaeus of Locri, Eurytus, etc.

Others lived in Italy: Clinias, Archytas of Tarentum, the latter in about 375.

[p.182] 1. Exposition of the System

The principle of Pythagoreanism is clear in Aristotle (*Metaphysics*, I, 5). Mathematical principles are the principles of things, and the elements of numbers are the elements of all beings. Everything is explained. Before interpreting this principle, it is necessary to indicate the reasons which could have led the Pythagoreans to pose it.

1. According to Aristotle, the Pythagoreans remarkably believed that things bore more resemblance to numbers than to fire, earth or water.

2. Numbers appeared prior to anything else, which probably means that things are understandable, intelligible only by means of numbers. Philolaus says in a fragment: "It is number that makes things knowable, nothing is knowable without number, and all that is known is number"⁴⁸. It is impossible to conceive anything without it. The Pythagoreans are therefore mathematicians who, struck by the relationship between things and the constructions of mathematics, imagined that the principles of mathematics were the principles of things. But in what sense have they considered numbers as the principles of things?

What is the nature of number as understood by the Pythagoreans? Does it exist by itself or is it an attribute? Is number a substance or is it only a quality of things? A text of Aristotle gets us out of an embarrassing situation on this point (*Physics*, III, 4). Aristotle says that, according to the Pythagoreans, the principle of things, infinity, exists by itself and not as an attribute. However, we will see that according to the Pythagoreans the infinite is only part of number. But if number exists by itself, is it able to exist separately? In other words, is the world considered as pure number something real or is it a simple abstraction of the mind? The texts seem to indicate that the Pythagoreans considered numbers as bound to sensible things in such a way that it cannot be detached by an effort of abstraction. The number in the thing is [p.183] the principle of the thing. However, discussions have been raised on this point. In fact, Aristotle tells us that, according to the Pythagoreans, things are numbers. He also tells us that the Pythagoreans make number the material cause of things; and on the other hand, in a passage of *Metaphysics*, I.6, Aristotle tells us: "Plato professes participation, and in that respect, he only changes the word used by the Pythagoreans. The Pythagoreans say that things exist by imitation of numbers and Plato only replaces the word imitation with the word participation, μίμησις becomes μέθεξις". Moreover, the

text of Stobaeus (1-302) could confirm Aristotle's testimony. "I know, he said, that many consider Pythagoras as having said that things arise from number, but in reality, Pythagoras did not say that things come from number, but that they are according to number, κατ'ἀριθμόν".⁴⁹ It seems difficult to reconcile the opposing texts. According to some critics, and Brandis⁵⁰ in particular, there would be two opposing tendencies among the Pythagoreans. According to one, number would have been the immanent principle of things; and, according to the other, number would be an ideal, of which things would be made as an imitation. But none of Aristotle's texts gives us the right to distinguish between these two tendencies. On the other hand, in *Metaphysics*, I.5, we find a phrase which perhaps allows us to reconcile seemingly contradictory texts: "Because the Pythagoreans found a resemblance between numbers and things, they accepted that number is the principle of things". It seems likely that, among the Pythagoreans, confusion occurred between simple resemblance and identity. Such confusion now seems strange, because later philosophical doctrines have clearly fixed and distinguished both notions. But it seems unlikely that the Pythagoreans made a difference between resemblance and constant conformity, and absolute identity. Perceiving that things are subject to precise mathematical relationships that had the character of number, they concluded that they were numbers. It was only several centuries later that we came to distinguish between the two conceptions. Some fixed their attention on the reason given by the Pythagoreans: simple resemblance; others on the conclusion they drew: identity or immanence. What it is necessary [p.184] to say, is that for the Pythagoreans, as Aristotle clearly said, number is the principle of things because things resemble numbers.

In summary, we will singularly clarify the dominant thought of Pythagoreanism if one is transported to the fragment of Philolaus where it says: "If we want to explain the harmonious arrangement of things, it is necessary to put harmony inside things." The Pythagoreans, mathematicians above all, perceiving that things are intelligible when they are reduced to numbers, conceived the idea of putting number inside things like matter, moreover matter that is immanent. Aristotle's expression is extremely accurate⁵¹. In fact, the Pythagoreans, having not yet distinguished a metaphysical principle from a material principle, had not realised that the reality of things and their intelligibility are two separate things; perceiving that number is the condition for the intelligibility of things, they concluded that number constituted the substance, the

matter of things. Number is a metaphysical principle used as material principle by philosophers who did not make the distinction.

One last question remains to be resolved, concerning the nature of Pythagorean number. This issue is raised in a text of Aristotle, *Metaphysics*, XIII, 6. It says that the Pythagoreans make sensible things consist in numbers. They therefore consider units, says Aristotle, as having magnitude, but, how the first One, the first unit was able to acquire magnitude, is a problem for them. From this text it seems that Pythagorean number is something corporeal, material, and this theory was in fact supported by several historians. Number would be regarded by the Pythagoreans as matter from where things emerge, as they would emerge from water, air, fire, etc., according to other philosophers. This opinion seems inconsistent with Aristotle's other, more accurate texts, where it is said that number is subject and not an attribute; it is substance itself, without the need of any natural quality. Furthermore, Aristotle called Pythagorean number μαθηματικός [mathematical]. Therefore, it is not material. Elsewhere Aristotle [p.185] criticizes the Pythagoreans in that it is a contradiction to have regarded material bodies as forms of mathematical number. So, the materialist interpretation of German historians Reinhold and Brandis cannot be accepted. But another historian, Retter⁵², suggested a fine, even though, in our opinion, just as inaccurate interpretation. According to him Pythagorean number, without itself being material, would be a geometric entity: the unit would be the point and the numbers relationships of magnitudes in space. Thus, the Pythagoreans would have reduced all bodies to their geometric properties and it would be these geometrical properties which they would have represented by numbers. Note that a theory of this kind is hardly possible before Democritus. This way, the point would be identified with the atom. However, the atom is a direct product of the eclecticism after Pythagoreanism. In reality, the challenge is to explain the text we quoted at the beginning. But note the historical process of Aristotle: his interpretation of his predecessors is based on his ideas. According to him likeness only explains its likeness. Consequently, extended elements are needed to explain extended things. So, for Aristotle, if the Pythagoreans reduced things to numbers it is because they granted extension to numbers. But the Pythagoreans never expressed this opinion, and if Aristotle makes them say it, it seems absurd, contradictory, to assume that an extended thing is formed with un-extended elements. The evidence that they have not said it comes from words in the phrase from Aristotle: "how the first One, the first unit was able to acquire magnitude, is a problem

for them”⁵³. Indeed, they would have a problem with giving material magnitude to the units if they considered number as purely mathematical.

Knowing the nature of number in general, we ask, how did the Pythagoreans apply number to make it the general explanation of things?

The numbers are divided into even and odd. There is even a third category, odd-even numbers.

They identify the odd with the unlimited, infinity, because it puts an end to the division by two. Alternatively, even is considered [p.186] finished, perfect. Thus, even numbers, odd numbers and even-odd numbers, whose nature is very obscure, are the various categories of numbers used by them.

The Opposites. The even and odd constitute two opposing determinations. Presumably, the oppositions between the qualities of things are reducible to the fundamental opposition of unlimited and limited. The Pythagoreans compiled a table of opposites. They are ten in number:

1. Limited and Unlimited
2. Odd and Even
3. Unity and Multiplicity
4. Right and Left
5. Masculine and Feminine
6. Rest and Movement
7. Straight and Curved
8. Light and Darkness
9. Good and Bad
10. Square and Rectangle

Harmony. The elements of things, that are different in nature, must be linked to bring together opposite determinations in each object. This is what harmony consists of. Within all things, there are oppositions first, then a harmony that unites them all. This results from the fact that everything is reduced to a number. But every number is composed of even and odd, and yet any number is one. In other words, the Pythagoreans noticed that number is one and multiple at the same time. It therefore combines opposites and substance so to speak, and since everything is number, it must be admitted that the opposite qualities that we find in any object, right and left, straight

and curved, etc., are reduced to the numerical oppositions of even and odd, which makes the unity of an object; it is the same cause that makes the unity of number.

This theory of opposition and harmony is quite obscure. So, it is not surprising that various interpretations have been [p.187] proposed in antiquity, and which for the most part inspired ideas after Pythagoreanism.

The principal of these pantheistic explanations is to be found in antiquity. According to the Neo-Pythagoreans and the Neo-Platonists, Pythagoras would have identified the One with Divinity. From this original unity two principles would emerge: the One and the indefinite duality. Everything good must be attributed to the first of these two principles, and everything evil to the second. And it is these two principles, diversifying and taking on different forms, which have given rise to the contrary qualities we find listed in the table of opposites. We recognise here, in a slightly modified form the doctrine of the Neo-Platonists and Alexandrians. They assumed the emergence from unity and superior origin of thought and even existence; multiplicity by a sort of procession. But this opposition of unity and the dyad, and especially the progress of being, come from ideas that date back to the later time of Greek philosophy. We said that Aristotle's texts are the only ones that deserve any confidence when it comes to the essential points of Pythagoreanism; however, all other texts which we could use for such an interpretation are much later. It is not until the first century that a similar theory is found in Alexander Polyhistor, the historian. It is certain that the Pythagoreans recognised multiple gods, while following to a certain extent the direction of monotheism, which was so important in philosophy starting from Xenophanes. We therefore reject it as being like a neo-Platonic theory, the idea of the development of God in the world, of a division, an emanation of the original unity giving birth to the oppositions of the one and the many. This is a pantheistic theory which the Pythagoreans probably never considered.⁵⁴

To apply numbers to things, they almost always resorted to superficial analogies. Aristotle says that if the Pythagoreans encountered some analogy between numbers and celestial phenomena, they expressed this by it, and if there were gaps between things, they filled them with some elements.

For example, they concluded that since the decad was the perfect number, there are ten planets, but as we saw only nine, they [p.188] invented the antichthon or counter-earth to complete the number. One finds a considerable number of symbolisations of the same kind. So, Justice which consists of making like for like is

identical to the square, and as the square is identical to 4, they represented justice by 4. The occasion is the number 7 because the moon changes phase every seven days, because some diseases include seven periods, etc. Marriage was represented by the number 5, the sum of the first male number 3 and first female number 2. However, it should not be assumed that these connections are always made without method. Pythagoreanism gradually progressed systematically: music, geometry, physics and natural history.

Arithmetic. Pythagorean arithmetic was dominated by the importance attributed to the decad. The Pythagoreans are said to have invented the system of decimal numeration. The invention of the so-called Arabic numerals must probably be attributed to them. The number 4 was also of great importance in the system because it is the first square and because the sum of the first four digits is 10. The numbers 3, 4, 5 were also favoured, because the sum of the squares of the first two is equal to the square of the third.

Music. The Pythagoreans made great strides into the theoretical study of music⁵⁵. They determined the relationships which exist between the pitch of a sound and the length of the vibrating string. For the fourth they found the ratio $\frac{3}{4}$, $\frac{2}{3}$ for the fifth, and $\frac{1}{2}$ for the octave.

Geometry. They had the idea that would later return with Descartes, to represent figures with arithmetical symbols. Descartes had to make use of them for creating a line for the law of motion. This led to analytical geometry, in which they limited themselves to artificial integrations [links].⁵⁶

Physics. According to Philolaus, the Pythagoreans acknowledged five primordial bodies: earth, fire, air, water, and a fifth of which it is difficult to determine the exact nature.

Cosmogony. Pythagoras believed in a beginning of the world. Initially fire forms at the heart of the universe. This central fire draws [p.189] portions of the infinite and this attraction gives form to the indefinite. So, the world was formed as a sphere, having fire in the centre and rotating from west to east around the fire. There are ten celestial bodies. According to the first Pythagoreans, the earth is spherical, but it does not revolve around the sun. However, little by little, the Pythagoreans admire not only a movement of the earth around the sun, but also a movement of rotation on itself. Harmony is the result of these revolutions around the central fire. Indeed, these bodies move quickly, and all motion gives a sound whose pitch is in a certain

relationship with the speed of the mobile. Thus, each of the celestial bodies, while rotating, produces a special note, and all the notes together produce a harmony. It is habit that prevents us from hearing the music.

Moral Ideas. This moral doctrine, as Zeller has shown, is not one with the philosophical doctrine of the Pythagoreans. Pythagoras is above all commonly known for his doctrine of metempsychosis. But this is precisely what does not belong to him; he borrowed it from the East. Thus, the soul would be in the body as in a prison, and the day that it separates, it may enjoy an immaterial life if it is made worthy. The duty of man on earth is to purify himself morally. It happens by controlling his conduct, above all by fighting caprice. Pythagoras recommended respect for parents and the law, loyalty, friendship, respect for old age, and especially of proportion and moderation. It is also pretty well established that within Pythagoreanism moral qualities and virtues were represented by numbers. It is difficult to know what consequences were drawn from this symbolisation.

What should we take from Pythagoreanism? What is obvious, is the indisputable, undeniable fecundity within the mathematical abstractions - and convinced, the Pythagoreans acknowledged it - contending that everything is number and that nothing is knowable other than by number. Any specialist has experienced a similar tendency, a tendency to explain all things by the science he knows best. This is the starting point, the reason for this idea. It is indisputable that this idea has given the Pythagoreans [p.190] superiority over the Ionians. They understood that, when it comes to science, the main question to ask of scientific explanation is; will the explanation be convenient for the mind? Without making the distinction between the subjective and the objective, they glimpsed that the object, the absolute such as it is in itself, is not probably an object of science⁵⁷, and that the mind should simply choose, between all the possible conceptions of things, the one that lends itself to calculation and best satisfies our needs. So, the idea of explaining things with an intelligible element represents real and significant progress. On this point, we can put the Pythagoreans and the Eleatics on the same plane. But the Pythagoreans are superior to the Eleatics; not only because they understood that we must firstly be concerned about intelligible explanation, but they foresaw what was to become classic of our times, that the most intelligible scientific explanation is a mathematical explanation.

It is Descartes who gave this idea its legitimate place in science, but the Pythagoreans were the first to have glimpsed it. They realized that to explain things, is

above all to represent them with symbols and that the object of science is to substitute a mathematical symbol for the object. This idea is enough to make the Pythagoreans unparalleled. They are, perhaps with the atomists, those who best understood science. (Aristotle is far from having understood ideal science with this precision.)

But they did not understand that the application of the mathematical symbol for things had to be made, not because of a superficial analogy, but after conscious observation. It is firstly the perfecting of the methods of investigation, physical appearance, then the analysis of the phenomena of heat. Therefore science, as the moderns see it, includes two processes, two approaches:

1. The study of mathematics and the progressive development of the science.
2. The systematic and reasoned application of mathematics to physical things, following observation, experiment and all kinds of assumptions.

[p.191] The Pythagoreans had excellently grasped the principles of these two operations. Regarding the first, they not only grasped the principles, but they drew conclusions which made them the most skilful mathematicians of antiquity. But they were misguided in the second. They believed that between nature and the mind there was an agreement such that one could, by virtue of superficial analogies, choose a number and substitute it for the object. It is for this side of their doctrine that they are often ridiculed. But we must not forget that the basic idea of the Pythagoreans was taken on by Descartes and dominates the whole of modern science.

IV

NOTES OF

The Black Notebook

48. Philolaus, Pl, p.503, B. v.
49. Stobaeus, p. I, chap.10, S 302; ed. A. Meineke, Teubner, 1860, t. 1, p.80
50. Brandis, *Geschichte d. Entwicklungen d. Grieschiechen Philosophie*.
51. This passage is interesting, like other analogues, where Bergson uses the word *precision*: "Plato did not care much for precision", p.3; Aristotle on the other hand

gives on the authors "precise information", p. 3: "the motive for the doctrine of Parmenides is indicated with precision," p.23; here "extreme precision of Aristotle on the Pythagoreans " other texts of Aristotle are "more precise", p.23, 40, 44, etc. These occurrences may help to better understand what Bergson means by precision and clarify the important text *The Perception of Change*, p.1253.

52. « Retter ». Probably an error in the script. Read instead as Ritter, whose *Geschichte der Pythagorischen Philosophie* (1826), is cited by Zeller in his bibliography on Pythagoras
53. Aristotle, *Metaphysics*, M, VI, 1080b16.
54. Bergson never varies in his opposition to this kind of representation and of pantheism in general.
55. See the fragment of Stobaeus, Pl. p.504
56. Philolaus, B. XII, Pl, p. 506
57. *La pensée et le mouvant*, p. 1277-1278

Bergson, Plotinus and the Harmonics of Evolution

Appendix 3

*

BERGSON

COURS IV

Cours sur la philosophie grecque

Henri Hude, 2000. Presses Universitaires de France

Introduction to Bergson's Lectures on Plotinus (École normale supérieure, probably 1898-1899)

Translated by Lynn Hubbard

Notes on Translation

1. Presses Universitaires de France have kindly granted permission for this translation to be included in the thesis on the condition that it is neither reproduced nor marketed commercially.
2. Page numbers in brackets relate to the page numbers in the book.
3. Footnote numbers have been changed from original publication for ease of use and the associated notes appear at the end of the Introduction.

[p.5] First we present a course on Plotinus, the manuscript of which is preserved in the Victor Cousin library at the Sorbonne.

The authenticity of this course is not in doubt. We find evidence:

1. In the chosen subjects and direction of research. It is without fear of retrospective illusion that one detects the author of *Matter and Memory* in its reading, the theory of *logoi* faithful and sympathetic, but staggered and full of unexpressed reinterpretation. Bergson applies his intellectual effort to the question of Plotinus' World Soul and its relation to individual souls. The question that arises at the outset is: "What does it mean to be alive?"¹

[p.6] Bergson emphasizes the individuality of Plotinus' Ideas and *logoi*, and he finished his course with a lecture on consciousness in Plotinus.

2. In the characterization of Plotinus' method: "His metaphysical method is deep introspection, which is to go beyond the ideas by appealing to a deep sympathy between our soul and the whole of reality. (...) His method is psychological. And therefore, it is natural that his attention had been drawn, more than that of Aristotle, to psychology, the life of the soul."²

3. The style itself: *a*) images/concepts and their treatment (the cone³, the diffracted rays⁴, distention⁵, etc.). *b*) a number of words, expressions and ideas that are quite characteristic, such as, for example, "The more the logos works the more it divides itself. It deposits more and more forms which it maintained united within it, etc."⁶; or when he speaks of Plotinus who proceeds "not by juxtaposition, but digging so deeply beneath the ideas he brought forth the source from which these ideas had sprung."⁷ Or again, the passage on the method cited above; and one could extend such a list.

These three kinds of internal evidence develop the overall impression of being in the presence of the man and of feeling the lead of the master. Prof. Pierre Magnard said it perfectly in 1989 during a conference devoted this course of Bergson at the Congress of Clermont.⁷

From the nature of the subject, which is neither from the program of the baccalaureate class nor from preparation to compete for the ENS, and by its scientific level (both of erudition and of speculation), it can only be a course of higher education. It cannot have been given at the Faculty of Clermont-Ferrand, where Bergson was

responsible for teaching classes between 1885 and 1888. Firstly, no course on this subject is listed in the programs published by the Academy of Clermont (and reproduced in the volume of *Mélanges*);⁸ and secondly, the style and authority of the master, the writing and casualness of the listener, excludes it from being the work of a novice teacher addressing novices. The course [p.7] in question could therefore have been given at the *École Normale Supérieure*, where Bergson was a senior lecturer from February 1898 to November 1900, or at the *Collège de France*, where he was elected (Chair of Greek and Latin philosophy) in April 1900; but the course would not have been given at the *Collège de France*, because of its very general character. For comparison, in 1901-1902, Bergson lectured on the ninth book of *Ennead VI* at the *Collège*.⁹ The lectures on Plotinus must therefore have been given at the *École Normale*, and probably over a whole school year, which leads to a credible date between 1898 and 1899.

For confirmation, a clear reference to the latin thesis of Couturat on Platonic myths, dating from 1896, can be noted on p.55 manuscript of this course. The course is after the publication of *Matter and Memory*¹⁰ and contemporaneous with the preparation for *Creative Evolution*.¹¹ It provides a magnificent testimony and an irreplaceable document both on the genesis of *Creative Evolution*, and as the so delicate suture between *Evolution* and *Matter and Memory*.

Notes

1. This is the subject of *Ennead I, 1*, but Bergson declared the order adopted by Porphyry to be arbitrary and that it does not follow the development of Plotinus' thought.
2. Manuscript, p.44, Vol. IV, p.34
3. Manuscript, p.36, Vol. IV, p.31
4. See below, p. 9-11 (Introduction: Authenticity of the Lectures at Clermont)
5. Manuscript, p.43, Vol. IV, p.34
6. Manuscript, p.35, Vol. IV, p.31

7. Pierre Magnard, 'Bergson Interpreting Plotinus', in *Bergson. Birth of a Philosophy. Proceedings from the Symposium at Clermont-Ferrand, 17th and 18th November 1989*, Paris, PUF, p.111-119. At this conference Pierre Magnard gave a legitimate place to Bergson's lectures.
8. Henri Bergson, *Mélanges. The idea of Place in Aristotle; Duration and Simultaneity; Correspondences; diverse pieces, Documents*, text published and annotated by André Robinet with the co-operation of Marie-Rose Mossé-Bastide, Martine Robinet and Michel Goutier. Forward by Henri Gouhier, Paris, PUF, 1972, documents reproduced p.332, 342 and 343.
9. Document reproduced in *Mélanges*, p. 512. This treatise VI, 9 is entitled 'On the Good or The One'
10. 1896.
11. 1906.

Bergson, Plotinus and the Harmonics of Evolution

Appendix 4

*

BERGSON

COURS IV

Cours sur la philosophie grecque

Henri Hude, 2000. Presses Universitaires de France

Chapter 1

Bergson's Lectures on Plotinus

Translated by Lynn Hubbard

Notes on Translation

1. Presses Universitaires de France have kindly granted permission for this translation to be included in the thesis on the condition that it is neither reproduced nor marketed commercially.
2. Page numbers in brackets relate to the page numbers in the book.
3. Numbers in < > are page numbers of Bergson's original manuscript.
4. Hude's footnotes appear as in the book and the associated notes are given at the end of the lectures.

Lectures on Plotinus

<1> The Life of Plotinus

[p.17] Plotinus was a Greek uniquely inspired by the Greeks¹. It is important to establish if the study of his life confirms this impression from reading his work.

The primary source of information is Porphyry's *The Life of Plotinus*²; however there is some very concise information from Eunapius³ in his *Vitae sophistarum* (Life of the Sophists) (Ed. Boissonnade, 1824), and a few words in Eudoxus⁴. The information provided by Porphyry must be accepted barring exaggeration in expression, because at that time Plotinus was greatly admired and fascinated his followers.

The name Plotinus is Latin: he came from a Roman family of Egyptian origin. He was born in 209 AD. Disdainful of material life, he would not talk about his birth, or of his family or country, nor would he allow a portrait. Eunapius tells us <2> that he was born in Lyco, and the other two refer to him as Lycopolitan; however, this does not determine whether they are referring to Lycopolis, Thessaly. The detail is not important.

[p.18] He came to study in Alexandria at the age of twenty-eight and devoted himself exclusively to philosophy. He was not happy with the schools he attended until he was presented to Ammonius Saccas who he followed with enthusiasm. What were these schools?

Towards the middle of the third century Alexandria had long been the seat of a great scientific movement. It was a place where the exact sciences, and predominately the human sciences, were cultivated. It was home to a number of commentators, not least on Plato and Aristotle. In addition, throughout the Roman period, philosophers were represented in almost all ancient Greek schools. It was a time of learning and eclecticism. They taught the same doctrines of Heraclitus and Pythagoras, and the field supported the emergence of a system that would bring together all the ideas of the teachers of Greek philosophy⁵.

<3> It is certain that this purely Greek education had a decisive influence on Plotinus. But we must also mention other sources of influence.

Firstly, Jewish-Alexandrian philosophy represented by Philo. Had he read Philo? It cannot be proven; however, he knew one of his disciples, the neo-Pythagorean

Numenius. Porphyry protests against those who claim that Plotinus had stolen ideas from Numenius, proving that he was influenced by him. Plotinus could have known Philo through this intermediary.

Philo combined Platonism and Judaism, and we can establish some similarities between Philo and Plotinus. Philo spoke of a God above science, κρείττον τῆς ἐπιστήμης and he immediately set the world of ideas below it, which he locked, it is true, in a logos. The question is whether these ideas have the same meaning. Perhaps the resemblance <4> is purely external. Perhaps it is only for his suggestions that Plotinus is beholden to him. Finally, Plotinus has nothing in common with Philo that cannot be found in Plato.

Additionally, we must consider an important doctrine of Syria, gnosis, a mixture of Christian doctrine, Eastern mythology and Greek speculation, which proposed a theory of successive emanations of the Godhead, which was considered a heresy in Christianity. Section 9 of *Ennead* II is a refutation of the Gnostics, and a refutation leaving nothing in common with them.

[p.19] There remains the Christian doctrine of Clement and Origen, but there is little trace of it in Plotinus. Presumably, like Gnosticism he knew about Christianity.

Therefore, Plotinus probably commenced his studies with Greek philosophy and religious philosophy, i.e. Judeo-Alexandrian and Gnostic. Porphyry tells us that Plotinus countered all of them. Only Ammonius held his interest, so who was he?

<5> We know little about him. Plotinus does not mention him once. Ammonius wrote nothing. We only have two witnesses to his doctrine.

1. - That of Nemesius⁶, a Greek Christian bishop of the fifth century (περὶ φύσεως ἀνθρώπου), who cites two passages that refer to the views of Ammonius.

2. - That of Hierocles, a fifth century Neoplatonist who referred to Ammonius in a fragment of his *Treatise on Providence*⁷.

What Nemesius has preserved for us is the "developments" of Ammonius on immortality and the relationship of the soul to the body.

Firstly, he taught that the soul is essential to the body because the body is subject to a thousand vicissitudes, made of multiple dissolvable elements and which needs a principle that retains that which is constant, συνέχον τι (p.29). It is Aristotle's expression; there is nothing new.

Secondly (p. 56) it is said that the soul enters νοῦς when it ceases to reason, λογίζεσθαι, on passing into intuition. He adds that it is united with the body as the

sunlight is united with air. It is not the soul which is in the body, but the body is in the soul. These are theories that we find unchanged in Plotinus, not only in substance but in form. We must therefore accept that Plotinus not only borrowed ideas of primary importance from him, but also the same phrases that Ammonius used, and without quoting him, he who so loves to quote. But this treatise was written two centuries after Ammonius who wrote nothing. Nemesius notes his words as if he were an immediate disciple of Ammonius, but he could not have known Ammonius' ideas with precision. This would necessarily require a written account of the ideas of this philosopher at that time. However, one can be certain that there never was one. Had there been [p.20] a statement like that, containing the basic ideas of the Alexandrian, it would have been so important, cited by Plotinus and some of the philosophers of Alexandria. However, this is not so. Porphyry only named him explicitly in the *Life of Plotinus*⁸ once in passing, and neither Iamblichus nor Proclus mentioned him. We cannot accept the existence of such a statement, but we can go further.

There are positive reasons to believe that Ammonius never professed any ideas that play an important role in Plotinus. Plotinus was not the only pupil of Ammonius. Longinus was as well. If Plotinus had accepted at face value the important ideas of Ammonius, a mediocre thinker such as Longinus would have noted it. Yet in a letter from Longinus to Porphyry, he said that despite his admiration for Plotinus, he did not accept his theories (*Life of Plotinus*, §19). And at §21, Longinus says that Plotinus has his own way of philosophising⁹.

The truth seems to be that Nemesius text presents no guarantee. The opinions and expressions attributed to Ammonius were taken by Plotinus or by any Alexandrian having quoted Plotinus. When a tradition had been made of Ammonius the founder of the School, and because he was followed by Plotinus, it was natural for those who passed for his disciples to pick up on Ammonius' ideas.

Secondly, Hierocles' text has been preserved by Photius, Patriarch of Constantinople in the ninth century (ed. Bekker, p. 171 and 460, *Hierocles' Treatise on Providence*). The nature of this testimony is vaguer and less suspect. Ammonius brought the principle that serves as a rule, that the truth about the nature of things is entirely contained in the purified doctrine of Plato, ἐν τῇ Πλάτωνος, which is a view commonly shared by Plotinus, Origen, Porphyry, Iamblichus and Plutarch. To him, the Platonists and Aristotelians exaggerated the differences between the two systems, and these discussions continued up to Ammonius the Theodidact.

It seems that in the eyes of the tradition Ammonius was the great conciliator of the systems of Plato and Aristotle. As for the purification spoken of here, we do not know what to say. If Ammonius [p.21] demonstrated the concordance of the two philosophers, it was probably in some way, an interpretation of Plato. Note that we find this fusion internally in Plotinus, though externally the similarity with Aristotle is much more striking than with Plato¹⁰. Kirchner has said that Plotinus is a neo-Aristotelian, not a Neoplatonist. It is an exaggeration and a mistake. But we must remember that there is a fusion of the two philosophers with him. So, he would only have borrowed it from his master; the method would have been one of fusion, the idea that Aristotle and Plato were basically in agreement, in a word, faith in a philosophy that is always basically the same, taught initially by the first philosophers, then consciously by Plato, then, a little distorted by Aristotle. This interpretation is confirmed by the single testimony of Porphyry: “In his examinations Plotinus brought the mind of Ammonius to bear on the investigations in hand” (*Life of Plotinus* S 14), and after having said that: “His writings are full of concealed Stoic and Peripatetic doctrines. Aristotle’s *Metaphysics* in particular is concentrated in them.”

We have no reason to attribute the great ideas of Plotinus’ philosophy to Ammonius. It seems difficult to see him as the creator of Alexandrian philosophy. The truth seems to have been that this school formed the thought of Plotinus.

For ten years, he contented himself with orally teaching the pure and simple teaching of Ammonius. Was this doctrine a more intimate relationship with a method outside of the *Enneads*? The silence of Plotinus, Porphyry and others reminds us that Plotinus was the creator of the doctrine in its general theses. What he was able to take from elsewhere, is material that has worked. His originality is of having made a great effort of inner concentration which could only be borrowed from elsewhere.

He was thirty-nine years old when he followed the Emperor Gordian against the Persians, to study philosophy in Persia and India. He and Gordian were only able to make it, and not without difficulty, to Antioch¹¹. The question arises as to how he could know the philosophies of the East, which some say he would have borrowed. The East can be understood as Persia or India, or finally Egypt. [p.22] However, in terms of India, there is no reference made in the *Enneads* and there is no reason to believe that he knew anything of these doctrines. As for Persia, he had the curiosity to go, but he did not succeed, and we have no reason to suppose that even in Alexandria

he became acquainted with Persian philosophy. Now, we find no trace of emanation in him; he even disputes this Gnostic theory.

There remained Egypt. There is no evidence that he has deepened the monuments of Egyptian wisdom. Egypt comes up once, in *Ennead*, V.8.6: in this text, he refers to the Egyptian and symbolic hieroglyphic characters. He merely said that the Egyptians found a way to represent things instead of only designating sounds. This reference has no philosophical character except a word on which it is necessary to return.

Eastern influence on Plotinus will therefore only be accepted if we discern in him something that is explained neither by Greek philosophy nor from Plotinus' roots.
< 13 > There is a text on Egypt in V.8.6:

“The sages of Egyptians either receiving an exact science, or through some innate instinct, about the things they wanted to communicate, seem wise not to have been content with borrowing letters which trace words and their order, nor which mimic the sounds and utterances of opinions; but having drawn images and having each one engraved in pictures in their temples, and they showed the composition of each of these images, in such a way that each image is also a science and a wisdom, and a wisdom that is found underlying this inscription which is picked up, being neither a science nor discursive reflection.”

These are purely ideographic hieroglyphs. Plotinus said that there is a profound <14> way of speaking, of indicating ideas. It was intuition, not thinking: the wisdom in words was picked up immediately. But it is not a question of Egyptian beliefs, solely their symbolism. It therefore seems unlikely that Plotinus was influenced by them. **[p.23]** Thus, for him, there is no trace of any influence other than Greek. If studying his philosophy leads us to believe that everything about him is explained by earlier Greek philosophy, or by his own genius, we can say that he is purely a Greek philosopher. At most he has suffered from an ambient impact in his style which is a bit relaxed and rambling.

Upon his return from Asia he settled in Rome for forty years. He opened a school and its teaching had considerable success. It would have been interesting to stop at this time to study the environment in which his philosophy fully developed, to see the enthusiasm it aroused, and the influence it had, especially on women, such as the two Geminas mentioned by Porphyry. According to Porphyry, the emperor Galen and his wife Salonina admired him so much that they planned to turn for him a ruined city

in Campania into “Platonopolis” which would be governed according to *the Laws* of Plato. According to Porphyry it did not happen because of the jealousy of the courtiers. Hegel (*History of Philosophy, IIIrd Century*) considered it to be contrary to common sense¹².

The influence of Plotinus was considerable. Porphyry cites several anecdotes. Rogalianus, a senator who attended his lectures, relinquished so many things in life; he renounced his property, his servants and dignities, and ate only every other day - this cured his gout.

Two characters stand out in from Plotinus’ entourage <16>: Amelius and Porphyry.

Amelius¹³ came from Etruria. He wanted to be called Amerius (a pun on the name Αμερία, which evokes the meaning of indivisible divine nature, while the name Amelius means negligence, ἀμέλεια). He came to Rome in 246, became attached to Plotinus and was close to him for twenty-three years. At the instigation of Plotinus, he wrote forty books against the Gnostic Zostrien. He also defended Plotinus against those who claimed that he had appropriated the ideas of the neo-Pythagorean Numenius (evidence that Plotinus knew Numenius, and through him, Philo). Amelius seemed to have had a mediocre mind and was an applied and passive disciple.

Porphyry is a philosopher. In his biography of Plotinus, he provides details about himself. He claims himself to be Tyrian. St. Jerome refers to him as a native of Balanea, Syria, but his own testimony is preferable. He calls [p.24] himself called Malchus, which means ‘the king’ in Syrian. It was Amelius <77> who translated this word for Porphyry. He came to Rome around 254 and became attached to Plotinus; however, no one seems to have understood him as well. He lived with him for six years. Among other things to come before us, is a small treatise, ἀφορμαὶ πρὸς τὰ νοτά, consisting of a collection of comments on some passages from the *Enneads*. In it, we find a brief summary of Plotinus’ key points, which is of an extraordinary penetration. Porphyry had a somewhat original mind but was capable of deeply entering into the thoughts of others.

In his school¹⁴ they read the works of the Platonists and Peripatetics. After this reading and a short meditation, Plotinus expounded his thoughts. There was much discussion, and Plotinus spoke eloquently without correction. It is undoubtedly from these discussions on a wide variety of subjects that Plotinus’ doctrine gradually emerged. For ten years he did nothing but develop Ammonius’ ideas <18>, most likely

commenting on Plato and Aristotle and combining them. He only began to write at the age of fifty, and he wrote as he spoke, beginning with questions. According to Porphyry, he wrote fifty-four treatises and passed on to us everything he experienced¹⁵.

Plotinus not only inspired admiration, but he appeared to his circle to be a supernatural being, most likely because he applied the same insight to practical matters as he did in his writing¹⁶. Porphyry thought about suicide, and on realising, Plotinus and ordered him to make a journey that healed him. Porphyry even attributed him with the power to break magic spells. An Egyptian priest propositioned him to evoke a demon, and it was a god who appeared, because it was indeed a god who accompanied him. On being invited to attend a sacrifice, he said: “It is for the gods to come to me.”¹⁷ There is no doubt <19> that Plotinus felt he was in contact with the divine. He experienced ecstasy, and during the six years that Porphyry was with him, Plotinus experienced it four times.

Plotinus' last words were: “I am trying hard to bring together what is divine in me and what is divine in the universe.”¹⁸

<20>

[p.25] II. The Work and Bibliography of Plotinus

<21>

(i) Plotinus' Work – The *Enneads*

Porphyry tells us that Plotinus began to write after lengthy meditation and wrote without stopping or re-reading. His style has the master qualities of a great writer. Porphyry and Longinus have honoured him. In §14 of his *Life of Plotinus* Porphyry states that: “His style was quick, full of ideas, concise and more abundant in thoughts than words, often speaking with passion and inspiration”. Longinus, at the end of §19 in the same work says that: “I extremely admire and love his writing style, for the multitude eager for the thoughts of this man and for the philosophical nature of his enquiries, and I think that researchers have to place his books among the most remarkable.” That's All. But the detail is overlooked. The syntax is completely incorrect. The development lacks continuity. There are <22> tangled phrases. It is a style that notes perceptions. In the *Lives of Sophists*, p.9, Eunapius¹⁹, says that Plotinus is remarkable for the enigmatic character of his speeches, which are laborious and difficult.

This explains the difficulties of the text. Porphyry was its editor, at least principally. Eustochius, Plotinus' doctor made a compilation of his writings in a slightly different order. Some of Plotinus' manuscripts, in which the material is presented differently, are attributed to Eustochius. The tradition was therefore preserved. We only have the edition of Porphyry.

According to him, Plotinus left fifty-four treaties which are provided in the chronological order in which it was written. Instead of maintaining it, he followed the example used by Andronicus for Aristotle and Theophrastus; he grouped together the books of related subjects. He composed groups [p.26] in which he went from the easier to the more difficult and generally <23> the shortest to longest. He formed six novenas and was pleased that he encountered two perfect numbers. Actually, he considered it lucky and this is probably why he separated certain chapters of some treatises. For example, the ninth treatise of Book 1, 'Suicide', is very short and was most likely taken from another treatise; or VI, a brief summary of no importance²⁰. There are sometimes two or three consecutive books continued under the same title. Porphyry probably made these divisions. Example: *Ennead* IV.3, 4 and 5. Finally, it is true that *Ennead* I is primarily moral; II and III are primarily about the physical; the IVth deals with the Soul; the Vth Intellect and the intelligible; the VIth, the One and the categories of being. This rigorous distinction had to be made. There is no important book where we more or less find his complete system.

As a matter of fact, the mode of Porphyry's classification is arbitrary and furthermore Porphyry left a list of these treaties that may be in chronological order. Only Kirchoff has returned <24> to this so-called chronological order. Mueller and Volkman have returned to the order of the *Enneads*. There are reasons; probably:

1. The chronological order is of no interest. There is no trace of a development with Plotinus. The reason is probably that he wrote later.

2. I would add that the order may not be chronological. Porphyry simply says that twenty-one of these treatises were already written when he came to Plotinus, and he gives a list. He adds that he composed twenty-four books when he was with him and names them. Finally, the nine other treatises were composed after the departure of Porphyry. It is quite likely, but not certain, that this list is chronological.

<25>

3. Bibliography

Plotinus' text came to us in very poor condition. The manuscripts are quite numerous, but riddled with errors. None goes beyond the 13th century and many are much later. Mueller has described [p.27] thirty-nine manuscripts of Plotinus and declares that only a sixth deserves some consideration (cf. Mueller, *Hermès*, t. 14, 1879). The best is *Mediceus A*.

The first edition is from Basel, 1580. A century before the Latin translation of Marsilio Ficino appeared, with commentary used by all subsequent editors. The commentary mainly consists of comparisons with Plotinus' successors. The Basel edition was reproduced in 1615. The text was very defective and almost unreadable.

The following edition is that of Oxford, 1835, *Plotini Opera Omnia*, by Kreuzer and Moser; a wonder of typography. The text is very defective; the edition was done with the utmost lightness and riddled with misprints. Ficino's translation is reproduced, and his <26> commentary arranged.

Then, Paris, 1855, with the Latin translation of Ficino, edited by Dubner, in the "Didot" collection. It roughly reproduces the previous, but the punctuation was given attention.

The next editor, Kirchof, whose edition of 1855 is in the "Teubner" collection, was harsh on his predecessors. It is the first decent text presented of Plotinus. It presents a grouping after the order indicated by Porphyry in his *Life of Plotinus*.

In 1876 a series of important remarks by Vintringam appeared which were used by editions that followed.

Hermann Friedrich Mueller, 1878, Werdman. The text, which is quite good, is based on a methodical classification of the manuscripts.

Finally, Volkman, 1883 Teubner. The text is similar to that of Mueller, but it is more prudent in the rejection of the glosses assumed by Mueller. This is the best edition.

Let us quote the publications separated from the books *περὶ τοῦ καλοῦ* [On Beauty], I, 6; *περὶ τοῦ <27> νοητοῦ κάλλους* [On Intelligible Beauty]; *Against the Gnostics*²³, II, 9.

There is a French translation of Bouillet, 1857-1861, in three volumes, with comments and notes - largely from Marsilio Ficino. It is less a translation than a paraphrase.

In German, Engelhardt, translator of the second Ennead.

Translation completed by Mueller, 1878-1880 'Berlin, the first volume being better than the second.

[p.28] In English, Taylor has translated excerpts from Plotinus.

In 1840, Steinhart, *Meletemata Plotiniana*

1845, Simon, *Histoire de l'École d'Alexandrie*

1837-1846, Ravaisson, *La Metaphysique d'Aristote*.

1846, Vacherot, *Histoire critique de l'École d'Alexandrie*. Remarkable work, though a bit vague. In addition, preconceived ideas about <28> Eastern and Philonic origins of Plotinus' ideas.

1858-1859 and 1895, articles by M. Lévêque in the *Journal des Savants*, in connection with Bouillet, then with Chaignet.

Zeller, *Philosophie des Grecs*, IIIrd part, 2nd section, second half. - Mediocre

1864-1867, Richter, *Neoplatonische Studien*, Halle. Conscientious work of analysis.

1875, Von Kleist, *La critique du materialism par Plotin*, 1875.

- Similarly *Plotinische studient*²⁴, Heidelberg, 1883

1893, Chaignet, *Psychologie des Grecs*, Vol. IV.

Not to mention the detailed work on the books on 'On the Beautiful' and 'Against the Gnostics'.

<29>

4. The Doctrine of Plotinus

The Place of the Theory of the Soul Therein

<30> Plotinus came to Alexandria in the 111th century of our era. It was a time of intellectual eclecticism and vague moralism, pagan religion, Greek spirited, deeply attached to classical culture, and having a background that was contemptuous of Eastern imports, he naturally tended to resist this foreign invasion by combining the forces of the whole of Greek philosophy; not by process of juxtaposition, but digging so deeply beneath the ideas he brought forth the source from which these ideas had sprung²⁵.

It would be interesting to follow this philosophy in its struggle with Christianity, especially to ask why this philosophy and this religion that had so much in common, immediately found themselves irreconcilable enemies, and why it was that it was this philosophy that died. It would also be necessary to find out how this religion, after the triumph of philosophy, absorbed, and retained the best of it (St. Basil, Augustine), <31> and how this thinking now has a somewhat important role in modern thought. I shall limit my examination of the philosophy of Plotinus to its central part, the theory of the Soul²⁶ that is concurrently the theory of the individual soul and the Universal soul. The course will show that it is the centre of this philosophy; but as there is no special book devoted to this theory it will be helpful to present it, and following the method of Plotinus, to start with a presentation of the complete preliminary and schematic doctrine of Plotinus.

The starting point of Plato's dialectic of was the spectacle of contradictions of which material things are the theatre, *Republic*, VII²⁷. In the presence of contradictions presented by the subject matter, the philosopher is encouraged to reflect, and he concludes that the things we perceive are only appearances, and that reality must be sought in the immutable ideas.

Above all Plotinus seems <32> to have been struck by the contradictions of human affairs (*Enneads*, III)²⁸. The things we hold to be serious or even tragic, wars, etc., all this is child's play, banter. It is not the man inside but a shadow of the man who is engaged here below with lamentations and groans. The evidence is in the same regularity of physical evil, the rhythm of a Pyrrhic dance. We are spectators. We must understand each of the actors; follow the lines of the world in all its articulations. The analysis with which the Platonic dialectic begins consists in determining reality as qualities, the mixture of which specifically engenders contradictions. According to Plotinus, it is in living beings [p.30] that this analysis ends, *Ennead* VI²⁹. A stone must be put back into the earth (ground), and we will see that the earth is an animated being, and so for all elements.

<33> What is a living being? A microcosm of the world order. It is divided, but in each part is the whole. It goes through phases, or each is implied in the other. It is therefore a principle that unites the multiplicity; it is the *λόγος ἐν σπέρματι*, the generative reason.

Logos is less than an idea, because it works, more than a thing because a thing is inert. It is a "function", an idea that moves; a thought in motion.

Let us then consider all living beings formed by the work of the generative reasons. Each one of them manifests a logos and the same time a certain love of life; hence selfishness and struggle. But at the same time that all living beings are struggling together, we are also witness to a concert. A fundamental harmony is revealed³⁰. In addition to individual *logoi*, there is a universal logos of the body of the entire world.

<34> Proofs: 1. ---- If astrology can guess the events in the sky, it is not because of the influence of the stars on destinies, but that there is such conspiracy of everything that arrangement or disturbance has repercussions elsewhere. Astrology reveals the fundamental harmony of all things.

2. ---- Magic, by acting at a distance produces certain modifications of matter.

3. ---- Love, which has something of the magician. The real affinities of things, which reveal themselves in magic, also appear in love.

And also in music.

So, there is a harmony of all things and a universal logos. But what explains the agreement of individual *logoi* with the reason of the whole? This point has been poorly addressed by most interpreters. Suffice it for now to note this agreement. In addition, we must consider the individual reasons to be placed <35> on the same plane as universal reason, coordinated with it, emanating from it.

It is appropriate to consider the point or aim of these *logoi*. These reasons succeed in shaping living bodies, that is systems of forces [p.31] or qualities organised them. The more the logos works, the more it divides itself. It deposits more and more forms which it maintained united within it and also distends in space and time. What was undivided in it unfolds, thereby constituting bodies and living beings.

What is his point of departure? The work is <>³¹. Therefore, his point of departure is an idea that does not work; a Platonic idea. Only, for Plotinus, the idea represents an individual object. Therefore, the immobile ideas are what we find at the other extreme from the logos. The ideas are above, the body below; and stretched between them, the beam of the beams of guiding ideas. However, we are still neither at the base nor at the summit. <36> Plotinus says that if we represent reality as a cone, ideas are a section closer to the point of the cone, forms a section closer to the base.

The forms require a support, a matter, initially to account for their reciprocal action, then to explain their gradual decline; because when the form acts, it is weakened. One should not seek to define matter, which would be to give it a form; and

the hypothesis is that it has no forms. It is a phantom which lies about all that it claims to be; it is the deprivation of any form, of any link, infinity [indefinite], *ἄπειρον*.

Must we actually conclude that there is a principle really distinct from the form which is mixed with it? No, because this expression, matter, is entirely provisional. We can regard it as the exhaustion of the reasons as they move away from their starting point. A divergent cone of light into the darkness, <37> for the divergent rays never cease to weaken. Matter is a limit that is never reached.

Now go back up to the other end, the Ideas, immobile essences. These Ideas are much more than the reasons themselves, being neither in space nor in time: they are cast into each other and represent each other. However, there is an Idea which is more than any other representation of the whole, it is the universal logos: the *νοῦς*. This idea is not substantially different from the others; it is under it that the others are coordinated. Yet it is not pure unity; it contains a multiplicity.

[p.32] Above, there was therefore pure unity. How can it be defined? We can give no name worthy of it. It is superior to all determination. Compared with being, it is more than being, and is more than thought. If the ideas are <38> causes of objects, it is cause of cause. If it must be named it is *τό ἐν* [the One], *τό ἀύταρχεζ* [the authoritarian], *τό πρότον* [the first], *τό ὑπέρτατον* [the ultimate]; but it is still *ἄπειρον* [the infinite/indefinite].

Here we are between the less than infinite being and the infinite more than being. It is between these two infinities that we find the chain of existences stretched. At the top, that which is more than light, then the luminous point, the unity of a point which shines, but encompasses all the light rays which diverge, and finally all these rays diverge more and more, losing themselves in the darkness [obscurity].

This third hypostasis is the Soul. The Soul <39> is a mixture. We should say that there is initially the idea, then reason, then form and then matter. Soul is Idea at the top; it is within the Ideas and can return; it is logos in the middle, then form and matter at the base.

Consider the idea par excellence, *νοῦς*. If we think the intelligible, we think the same intelligible last, working by distension. This is the World Soul. It is the thought that overflows, which overwhelms itself by distraction. Then the World Soul will produce the body of the world, that is, to sketch out possible living bodies.

But then each of the particular ideas, which also virtually contain a soul, is extended by its logos towards the body that universal reason has prepared for it. Each

of the particular souls contained in each <40> of the particular ideas, perceiving the body that the universal logos has only sketched as its image, is fascinated by this image. And, seduced at the idea of being something separated from everything in space and time, it drops; hence the fall. The soul is then taken into the body, into this great phantasmagoria that is the material world. [p.33] It takes this phantasmagoria seriously. It could always return to God who is its father; but more often it takes reality for that which is merely the shadow of reality and becomes an actress in the drama unfolding before our eyes.

So, we came back to our starting point. We know how to produce the hypostases. I would now like to eliminate from Plotinus' doctrine the ideas which do not belong exclusively to him.

Initially at the two ends, we have the One, superior in essence and thought, <41> and matter lower than them both. We can recognise there the frustration of the two principles of Aristotle, form and matter, the latter having become less than power. Similarly, one could bring closer the One of Plotinus to the One of Plato, and its nature is similar to the indefinite principle of which Plato speaks. The resemblance is obvious when one considers the principles at rest; much less when you consider the route that goes from one to the other. There is a very particular irradiation. Nevertheless, let us eliminate these two terms.

There remains the *logoi* and Ideas. The *logoi* are similar to those of the Stoics, the Ideas are Plato's. But the difference is great, especially in the transition from one to another. The Stoic *logoi* are immanent in matter, not derived from a transcendent principle. The Ideas of Plato are the genres [kinds]. Instead, Plotinus' *logoi* are only the prolongations of ideas; and the ideas themselves <42>, being individual, are all prepared to live again in the *logoi*. Therefore, what exclusively belongs to Plotinus is the passage, the effort to overcome dualism latent in his predecessors.

If we take the Ideas and the One, we have the intelligible world of Plato and Aristotle; and the sensible world below it. Plotinus wants to derive one of the worlds from the other, passing the ideas across with logos, from Noûs to the psyche. That is his great originality.

And how he is able to represent this transition? The material world is the world of action and production; the world of Ideas is that of contemplation. The question then is: how do we pass from speculation to action? What is outside of space and time that distends and degenerates? Plotinus has resolved the question psychologically [p.34] by

trying to make the transition from the purely intelligible to the purely analytically sensible by bringing simple decay to it <43>. See *Ennead* III where he declares that action and production are a weakening of the speculation³³. Action for the one that acts is to weaken the thought; it is to be relaxed. Like the geometrician who inadvertently draws a figure while he is thinking intensely, pure contemplation weakens during action. Here therefore is what there is of capital in the idea of irradiation, and which he tried to extend to all the transitions between hypostases.

His idea is again more psychological. This idea is not a simple thesis to which we can oppose others: it is a fact, an observation. In *Ennead* IV³⁴ he describes the condition found when, waking from his body, he became conscious, and then had a vision of a wonderfully beautiful world, beside which the rest was a dream. The body is sleeping, and action, of which the body is the instrument, is a decrease of contemplation; it is the mind <44> that sleeps.

Ecstasy is only an extension of this much more scientific state that consists in passing from the sphere of the Soul to the intelligible. His metaphysical method is deep introspection, which consists in going beyond the ideas by a profound appeal to sympathy between our soul and the whole of reality. Ecstasy is a form of sympathy, but not the only one³⁵. From below it is the effort by which the soul elevates itself to νοῦς and according to VI. 7, from well below; a very special state at which one must arrive if one wants to represent oneself materially. You cannot think it, but you can place yourself in a state of ἄνοια [folly] which is in sympathy with what in reality is truly non-being. So, there are several attitudes of the soul that seek to coincide with what is not strictly thought.

<45> His method is psychological. And then it is natural that his attention was called, more than Aristotle, to psychology, the life of the Soul. Plotinus considers the maxim of Socrates as being scientific³⁶. He says in VI that the Soul is representative of everything; that of knowing one knows everything. His successors have clearly understood this. In a fragment of a treatise sent by Iamblichus to Porphyry on the subject of γνῶθι σεαυτόν [know thyself], it is stated that he who knows the Soul knows the essence of things³⁷. [p.35] Similarly Proclus, in his *Commentary on Alcibiades*, and also in the *Timaeus*, says that knowing the Soul is to know everything and to rise to God³⁸.

<46>

5. Plotinus' Interpretation of Plato

<47> We will discuss the relationship between Plotinus' philosophy and previous philosophies.

That Plotinus extracted key ideas from previous philosophies emerges from a cursory reading of the *Enneads*. Porphyry says that theories of the Stoics and Peripatetics are interspersed in his writings and that during Plotinus' lectures all the philosophers were read, especially the commentators of Plato.

Secondly, it is also indisputable that of the earlier philosophies to which he made all others measure up is the philosophy of Plato. Kirchner claims that he was inspired by Aristotle much more than Plato, but he acknowledges that he uses Aristotle's interpretation of Plato. Of the rest, Plotinus mentions many Greek philosophers and constantly criticises them. He would happily inspire men with the early philosophers. Nevertheless, he <48> reproaches Heraclitus for forgetting to be clear⁴⁰; Empedocles for having grossly mistaken the nature of elements by making them material, that is, destructible⁴¹; Anaxagoras, for having introduced the *νοῦς*, but failing to take advantage of it⁴², since he puts all the forms in the primitive *μίγμα* [mixture] and renders *νοῦς* unnecessary; the Pythagoreans for having made substantial numbers. He attacked Aristotle on all the essential points: the theory of the entelechy of the soul, IV⁴³, he likened to materialist theory - the theory of categories, VI. I - the theory of God (having put thought at the top is a big mistake, all thought is conversation toward something), V⁴⁴. The same applies to the Stoics; he criticizes their conception of the soul, their theory of categories, etc. There is a philosopher against whom he has never even directed an objection of detail: Plato.

[p.36] Plato is the divine philosopher, the master that he does not even need to name when quoting. Plotinus puts all <49> his key ideas in Plato's name. He does not even admit his differences with him; of spiriting them away; of saying that Plato concealed his thoughts behind images. At the beginning of the Vth *Ennead*, he declares himself to be only an "interpreter" of Platonic philosophy⁴⁵. Interpreting Plato, and in the light of this interpretation, collecting what is best in all of Greek philosophy is what Plotinus wanted to do.

But this interpretation of Plato is very new and different from that of Aristotle and his successors. The novelty of this interpretation characterises the time of Plotinus,

the post-Platonic influences he was subject to, the idea that it consisted of Greek philosophy in general, especially his personal originality. What is this interpretation?

There are two parts at work in the dialogues of Plato: 1. - The aspect which strikes us most is the dialectical aspect ⁴⁶, the theory of Ideas. It is built entirely <50> using a dual method of analysis and synthesis; notably, analysis is the dialectic. The philosopher shares contradictions that he notices in sensation as an assemblage of opposite qualities. He separates these qualities and perceiving in each the shadow of an immutable essence he studies the other side of these essences instead of looking for their affinities; their parent, their filiation. In restoring the true order, arranges the Ideas in a hierarchical series up to the super essence to which all the essences owe their clarity and existence.

2. - A second aspect of this philosophy is the myth. Myths are common in Plato. They are of a very diverse nature and importance. a) Some are obviously only more or less prolonged poetic images - for example, in the *Phaedrus*⁴⁷ men charmed by the muses become cicadas; or in *Republic*⁴⁸, III, the metals that are used to form souls. b) The more significant myths: allegories that can be easily translated, for example, within the *Phaedrus*⁴⁹, the comparison of the soul to a chariot drawn by two horses. These are only <51> that of imaginative play. But next to these accidental myths in the philosophy, there are some that are essential because [p.37] without them the philosophy of Plato would be something other than it is.

Firstly, they are recognized by their extent (*Republic*, X, and the great myth of *Phaedrus*, the myth of the *Phaedo*); secondly by their tone: he is more serious, more personal; it seems that Plato wants to introduce us to some mystery; thirdly, a less general feature, Plato puts his myths in the mouth of a foreigner or a Pythagorean, or at least there will be Pythagoreans in the dialogue (Er the Armenian, Diotima, Timaeus...) These are the external features.

Here are the essential internal, features. If we compare these myths, we shall see that the subject which occupies the centre is always the soul, and particularly the human soul. There are often cosmogonical details surrounding it, but it is oriented towards the soul, and to the theological relation to the human soul. In *Republic* X, <52> Er saw the resurrected souls of the wicked punished and the good rewarded. He saw the necessity of the spindle, and the eight rings with eight Sirens. *Phaedo*: after death the souls of men are escorted to their respective place of residence and the land is described from the view of the soul. In both myths, it is the destiny of the soul after

death, while in others, it is the soul before life (*Phaedrus*: human souls chasing divine souls; *Protagoras*: the gods forming mortal souls).

For the life of the soul itself, as distinct from the contemplation of Ideas, as it is impelled to recollection and love, recollection and love are still presented mythically: love (*Phaedrus*, *Banquet*) recollection (*Meno*, where we find mythical expressions). Finally, in the *Timaeus*, it is the formation of the world soul and, symmetrically, of human souls, and around cosmogonic details.

So, the becoming of the soul and <53> generally becoming in general, but oriented towards the becoming of the soul - these are the subjects of Plato's myths.

But why does Plato treat these subjects in the form of myth? It seems that he had no other form at its disposal, because outside of it was only the form of dialectic; but the essence of the dialectic is precisely to take change and solve it in forms that do not change. [p.38] It is a static mode of explanation: it is in short, analysis. Becoming as becoming, remains by hypothesis outside of a dialectical explanation⁵⁰.

Therefore, becoming remains outside - and yet it is something; Plato is not an Eleatic. He admits the reality of change. Change exists, but it is not an object of thought. He had to find a way of explanation, or rather expression, casting becoming, as a participant of being and non-being, of <54> truth and falsehood.

In summary, if we depart from things, we can go back to the Ideas via the dialectic, from inferior to superior ideas, hence to the Good. If we assume the Good and descend to Ideas, but especially to sensible things, no scientific explanation will account for this process, by hypothesis, and this is where the myth comes in. When using the Alexandrian terms *πρόοδος* and *ἐπιστροφή* [procession and reversion] in Platonic philosophy, reversion is explained by dialectics and procession in mythical terms.

These are two very different aspects of Platonism. From a philosophical point of view, these two aspects do not have with the same resilient strength. The dialectical element addresses the general and impersonal faculty of conceiving and reasoning; myth the personal whim of each of us: everyone can interpret it in his own way. It amounts to <55> an approximate kind that keeps a certain subjectivity alongside impersonal science.

These two elements are, one absolutely stable, the other unstable according to the individual. The theory of Ideas, easily expressible in words, necessarily had to move around the other, something very personal, and that is what happened. Aristotle

immediately ignores this mythical element of the Platonic philosophy, and that is why he perceived no transition of the intelligible to the sensible; he therefore made the Idea descend into things. And this interpretation has remained the traditional interpretation: Plato remains foremost the philosopher of the theory of Ideas.

In his theory of the soul there is something that shocks anyone presenting the systematic explanation of the ideas of Plato. In some works they resolve to throw overboard anything not in accordance with that theory. [p.39] It is commonly said that anything that is not the theory of Ideas should not be taken seriously⁵¹. <56>

Philosophers they met took these myths seriously and put the mythical philosophy of Plato in the same rank as the other. It was natural that it occurred in a religious environment where all the religions were in conflict. It is also understandable that Plotinus was struck by the explanation that Plato made certain ideas mythological as a matter of fact; it is also understandable that he sought a justification of paganism and that precisely for this reason, he attributed paramount importance to this philosophy and interpreted all Greek philosophies in the light of that one.

At this time, the inner life became intense. Inside, all new shades of feelings came to the light of day. They were more prepared to seek a path of truth on the side of the idea. Finally, the idea of having to enter the myth by a route other than reason was no longer shocking.

<57> In Plotinus' philosophy, I see primarily an effort to recapture Platonism in its entirety. Plotinus wholly accepts Platonic dialectic, and even puts something beyond the Ideas that is more than Idea and which we can reach. But he also accepts the Platonic theory of the origin of souls, their descent into the body, love and recollection, and the destiny of souls.

How has he reconciled the two aspects? By a compromise that has rendered the mythology more dialectical and the dialectic more mythological.

1.- Consider the myths. In a passage at the end of *Ennead*, IV.2⁵², Plotinus again calls us back to the theory of the relationship between ψυχή [soul] and νοῦς [nous], and more particularly of the soul located in space and time, and the soul located in the intelligible. And he ends the exposition by providing an interpretation of the *Timaeus*. <58> He quotes a sentence from the *Timaeus*⁵³, where reference is made to a mixture of indivisible essence and divisible essence, made by God to form the soul. Plato presents this mixture as a historical fact. However, according to Plotinus, the doctrine is not something different to his, and yet, the relationship of the

soul to the intelligible in Plotinus is metaphysical in nature: it is not that of an artist's work, but a metaphysical derivation. Placing *voũç* with the Soul following. Thus, in the *Timaeus*, there is a history [p.40] that happens with the characters in time, while being wholly contingent⁵⁴. In Plotinus, the process is timeless and metaphysical. Yet Plotinus provides this theory as that of the *Timaeus*.

Is it a coincidence or {a} method of interpretation? Plotinus provides in III, an interpretation of myths. He says that myths must divide in time what they say, and they separate from each other <59> many things that are given one within another but which differ in rank and powers. When they have taught what they can teach, they leave to him who represented them the task of making the synthesis⁵⁵. So, the role of the myth is to present in the form of a story in time, what in itself is a necessity of being.

Example: the origin of souls and their descent.

Initially souls exist by themselves and are invariable. But this means that the body is not that which receives the soul, it is the body which is in the soul as one that it is representing. And, as such, it is there after a fashion, from all eternity.

For successive existences, each having rewards and punishments - all these successive existences are complementary to each other and all together form something that is other than the idea of the soul.

<60> So, Plotinus considered a timeless process that is given in myth as a history. This amounts to saying that this interpretation implies a certain conception of time and of a relationship of time with the eternal. Because if the same reality, which is viewed on one side as a succession in time and on the other as given suddenly in eternity, it could only be because time is the development of the successive form of something which in itself is timeless. *Ennead* III, 7 (*περὶ αἰῶνος καὶ χρόνου*) [On Eternity and Time] expresses this theory of time. Time is to eternity as the Soul is to *voũç*. The mind, *voũç*, is eternal. If the Soul is identical in itself and outside of *voũç*, time in the Soul is the movement, the life of the Soul as it passes from act to act, from state to state. Once posited, the interpretation of Platonic myths is deduced from this theory, because these myths relate to the soul, and what is becoming in the soul coincides with the eternal. [p.41] So, we see how the myth coincides to some extent with the dialectic.

2. - Similarly, the dialectic of Plotinus has something more mythical. It is also more abstract. For Plato, the soul that rises to the contemplation of Ideas comes out of itself, and the Idea is something rather distant from the soul: it represents a kind, the

soul is individual. For Plotinus, many ideas are individual. There is an Idea of Socrates that is in the eternal, the same Socrates who, developed over time is the soul. Thus, the soul enters the region of Ideas. The importance attributed by Plotinus to psychological studies comes largely from the established link between the soul and the intelligible, the soul being, as one that goes back up, plunging into the Idea. The idea of a science of the individual is of paramount <62> importance in the philosophy of Plotinus⁵⁶.

So, whether we consider the doctrine of Plotinus in itself, or as an interpretation of Plato, we are brought back to the study of the Soul as its centre.

V – The World Soul

<63> Firstly, we have to speak about the World Soul. According to Plotinus the theory of the particular soul and the Universal Soul are constantly intertwined. The idea of starting with a study of the World Soul and giving the psychology of the universe as an introduction to the psychology of the individual, is less strange than it seems if one relates to the meaning that the ancients, and especially Plotinus, have given to these words: ψυχή τοῦ παντός [Universal Soul]. This is the principle of order and nature, which creates matter and the laws of matter. In proceeding this way, we simply deal with nature in general before the conscious mind; we put consciousness into the conditions of life before dealing with the question of consciousness: it is basically the modern approach⁵⁷. The question of the relation between the physical and the moral is the same issue as that of the relation between the Universal Soul and the individual soul⁵⁸.

[p.42] Plotinus <64> drew very special conclusions from this general statement, as well as the theory of physical heredity. He explains it by determining precisely the responsibility of the Universal Soul and that of the individual soul, sketching the body and so bestowing it with general, transmissible characters, and therefore hereditary. The individual soul intervenes and perfects this work. Moreover, it chooses a certain body because it is suitable, and adapts itself to it. The problem of ‘being’ posed in ancient form is solved in a rather modern form.

The question of a Universal Soul is not as strange one would think. We accept that there is a certain unity of nature; finalists see in the development of things the

development of a single idea; their opponents accept the unfolding of a great mechanical theorem. The unity beneath this double form veils that the World Soul explained in concrete form⁵⁹.

But what is the origin of this terminology that equates the unity of the whole to that of the Soul? Probably Pythagorean; although there are no specific texts. The only quote of Philolaus by Stobaeus, is inauthentic⁶⁰; but other texts attribute to the Pythagoreans certain ideas that, synthesised in the mind, had to be translated within the specific conception of a Universal Soul.

Aristotle, *Physics*, N, 2b [=213b23]. "For the Pythagoreans the sky is, surrounded by empty space, and the world breathes." The world was a living being for them; but was there a centre of life?

Stobaeus, *Philosophical Extracts (Eclogae philosophorum)* 1.488. "Philolaus put fire at the centre. This fire was called the home of the universe and even the home of Zeus and the mother of the gods". It is indeed a matter of centre. Is it a Soul?

Aristotle, *Metaphysics*, 986 a2. "The whole world is harmony and number". But for the Pythagoreans these words are the very definition of the Soul. The Pythagoreans had to believe that the world is a manifestation of Soul. Furthermore, we think of the efficiency they attributed to number and especially to the decad. It is number that holds everything together and makes things knowable. In the *Timaeus*, the soul <66> is characterized by number, from which we may conclude that the Pythagoreans did not refer to the world as number and harmony without [p.43] it doing something. The Pythagoreans were therefore led to posit the world as living.

We see from this analysis that for Pythagoras the Soul was only a principle of order and measure. The Soul is still that, but something more for Plato. I will not try to explain the formation of the World Soul, *Timaeus*, 39 a: text that immediately passes for a model of obscurity (Cicero, Sextus) and which Proclus, Plutarch, Plotinus interpreted differently. It concerns the operation of a mixture of divisible and indivisible essence. We shall only define the role and function of the soul according to Plato's information.

For him, the World Soul is what the individual soul is to the body, the principle of movement. *Laws*, X, 896 a: "The movement capable of moving itself", *Phaedrus*, 249 c: "Only that which moves itself is the source and principle of <67> movement". Thus, the soul's first role is to provide an impulsion to things.

Secondly, it is the principle of measurement and harmony. In the *Timaeus*, the soul is composed according to the numbers which express harmony, the harmonics, and astronomical systems.

What then is the soul in itself, what place does it occupy between Ideas and sensible things? εἶδος or αἰσθητόν? Neither one, nor the other. It cannot be a sensible thing since αἰσθητά [sensibles] are inert; they are all ready-made, not principles of becoming. Nor an idea: the idea is first of all eternal and timeless, immutable, not subject to becoming, and represents the kind [genre]. But the World Soul: 1. becomes, being the very principle of becoming; 2. is an individual. The soul is something intermediate, which is natural given its mathematical character. It takes its place among these mathematically ordered existences that Plato puts immediately below the Ideas (*Metaphysics*, 987 a14).

<68> Why do we need a plurality of intermediate essences between the Idea and the sensible? In Plato's philosophy, the passage from the sensible to the intelligible is clear as dialectic, but the reverse passage is an obscure thing that is mythically expressed. In the Platonic myths that express all this descending movement by which one passes from Ideas to things, there must be reference points in this movement: souls, gods, and especially the World Soul, play this role. [p.44] These are the objects of Platonic myths. It is a vague definition, but the idea is not more distinct in Plato who, by his conception, could not clarify it.

Plotinus pulled this idea from the shadows because he borrowed it exclusively from Plato. The Soul of Plotinus is sometimes compared to the Stoic fire; however, the analogy is wholly superficial, the differences profound. According to the Stoics, the fire is self-sufficient; it is not derived from a superior, extra-temporal essence. For Plotinus it is a <69> derivation of νοῦς; one cannot even look closely at it without seeing it contract and ultimately become absorbed in νοῦς. Moreover, the soul of the Stoics becomes matter and matter, soul. In Plotinus, if matter comes from the Soul, it is not by transformation; it is a derivation which does not prevent the Soul from remaining itself. The source of his conception is solely Plato.

Plotinus brought Plato's theory fully into the light. He produced a theory of the body, an implicit theory of space, an explicit theory of time, and even a theory of consciousness. This hypothesis, the latter metaphysically, is primarily important for knowledge. Plotinus spoke of the others in terms of extension and purification of the concept of the Soul.

Recall the manner in which he gradually came to attribute a Soul to the universe. It is by the consideration of analogies between the world and a particular living being. A living being manifests a soul, first in the form of generative <70> reason. A living body is a multiplicity of parts between which there is κοινωνία [a communication of properties]; an animal is one whole and sympathetic with itself (ὁμοπάθεια [common affection or quality], συναίσθησις [conscious perception] = consensus). Therefore, there must be a principle of harmony. *Ennead*, III.2.2: “In the logos generator, everything is given together and in the same thing”. Ibid., VI.7.14 : “Logos is a multiple unity, a scheme, a sketch that contains sketches ... an undivided centre that contains and summarizes its entire circumference.” So, a living being is the manifestation of a logos.

Also, logos is not completely Idea; the Idea is the archetype outside of space and time. Logos is what comes out of the Idea, to act as it descends in space and time; it is the Idea become force. Precisely because the Idea becomes action, it is exposed to [p.45] meet with resistance, to imperfection. If there is a logos in every living body, there is at the same time something that resists it. It does not mean that the logos of a man <71> is lame. So, there is something it has resisted, which was not in the generative logos. But in this fault of production in becoming, the logos has not gained the upper hand, and what prevails is a deterioration, by chance, of the idea that the logos brought with it⁶³. It is that matter is there, bringing to the form its lack of form, in the measure of its excess and its defect, until, in the process of formation it has brought the being to be not of itself but of it [matter]. Therefore, matter opposes the information of the logos. Moreover, we shall see that matter is only a weakening or exhaustion of the logos in proportion to its work.

So, let us say that a living being is the soul as logos and, by the same effect of this work, it becomes weaker; additionally: it extends into space. Logos expands into space by the same work. Porphyry (ἀφορμαί [theory of rational tendencies], 37)⁶⁴ has clarified this idea well: “Solidity [mass] is a reduction in the power of the immaterial being, who is solely real.”

In summary, in a living being there is logos, the aspect of which is materiality, and finally distension in space that always implies a harmony. As for the Universal Soul, one wonders, does the universe have the external appearance of a living being thus defined?

There is much sympathy between all parts of the universe. Astrology establishes this point. It would be impossible if we did not assume that which is present at any one point. The stars have no influence, but significance (IV.4.6). Furthermore (IV.4.33), the universe is compared to a dancer, all of whose movements <73> are so related that the scholar who perceives it as one could reconstruct the whole movement by interpreting the movements, one by the other. This is also how astrology proceeds.

Likewise, magic is the power to act on a specific point of the universe by acting on another point.

Finally, why are prayers answered? It is not that the gods are listening. By the effect of sympathy, there is a way to influence the animated universe.

[p.46] The universe is therefore a living being and as such is the manifestation of a generative reason. We must now determine this Soul of things. We will firstly determine the relation to what is below it, the matter it informs, then the relation to $\nu\omicron\tilde{\nu}\varsigma$ (see also II.12.31) above it, and finally we will try to determine it in itself.

<74> The first question is this: If we take Soul, that is to say something that comes out of $\nu\omicron\tilde{\nu}\varsigma$ but which by its higher aspect is still something of a one, how can we explain this Soul as the indefinite multiplicity of things in space and time? Plato had to speak about non-being next to the Ideas. Plotinus wants to bring the same Ideas out of non-being. How can something that, by its nature, appears repugnant to Intellect – the totality of things - be the Soul that, from above, is still within the mind?

Soul is firstly flagged as a force which, as such, has the need and the power to produce, draws from itself all that it contains and which, by virtue of the principle that the generated is inferior to what generates, it produces an imperfect body at the bottom of which is matter that would be the bitter dregs of an inferior being (II.3.17) ⁶⁵.

<75> But why would the Soul which is form produce anything formless?

“A great light that shines out of the Soul tends to become dark in proportion as it moves away from its hearth” (VI.3.9). – “But the darkness, by that very fact that the Soul sees it, penetrates them and gives them a form.” So, in letting them escape from it, the Soul lets them out more diminished to the limit ever reached, where they would be darkness. Wanting to grasp pure matter, it would want to grasp the absolute shadow without light.

In this form, matter would still be purely negative, but it must have something efficacious, otherwise why would the Soul remain remote⁶⁶ from its original unity? (cf.

III.6 to the end)⁶⁷. Matter is initially presented as a Platonic non-being. Its role is to arrest the procession of things coming out of $\nu\omicron\tilde{\upsilon}\varsigma$ <76>, he compares it to the < > ⁶⁸ which lives continuously. But mostly, III.6.14, matter is compared to a mirror that reflects an illusory image; [p.47] and the mirror is an image itself, a mirage that is the source of mirages. And “if the images directly emanated beings, they subsist without needing to be in something else, but as the real beings remain confined within themselves, there must be something that provides them with a place where they do not subsist”. In other words, if images, sensible things, were an immediate effect of the Idea, the Idea would be sensible immediately; there would be no need of matter. But it must be said that every image needs to rely on another image. V.9.5: This image is by its very nature in something other than itself. Only the Idea is in itself. IV.8.6: The process must continue up to the limits of the possible. II.3.18: The world <77> is an image that is formed continually. That is, if the Soul remains where it is originally, there would be nothing sensible. Suppose a cause that acts [makes] going out of $\nu\omicron\tilde{\upsilon}\varsigma$; we fully present things because an image cannot occur without placing it in another image, and so on. Thus it engenders the indefiniteness of space, time and matter. Matter is only the indefiniteness of things, the ceaseless creation of images.

Compare this theory to Kant. Plotinus presents on the one hand the Idea, and, on the other hand, phenomenal reality, and like Kant, made phenomenal reality consist of an indefinite progress. For Kant, this is the experience, and two mathematical antinomies come from what we mistake for the nature of experience that is progress and movement, and what we want to grasp as an actual [in the present time] infinity. - But the difference is great <78>: for Kant, neither space and time, which determine the flux of phenomena, nor the causality that links them, can be generated; they are given as pure forms and a scheme. In Plotinus we have instead, an effort to deduce space, time and even temporal causality. Space and time are deduced from what is in space, and time is the incomplete manifestation of the Idea, the image. And then the image seeks completion; it is in this way that space and time are generated. Similarly, causality is the effort of a thing to bring out what it has in it. For Plotinus, it is the effort of a thing to find something else on which to sit, and rather than appearing, the seat slips away. [p.48] So, causality is also explained by the journey of an incomplete being in search of himself. All this is deduced from the extra-temporal and extra-spatial.

<79>

6. The Procession of the Soul and the Principal of Radiation

<80> We have seen how the Universal Soul engenders images that feature in space and time, because the mere fact of the multiplicity of images is what engenders time and space. The indefinite in time and space is simply the translation of the poverty of the image that seeks to rely on another image.

The Universal Soul is that which is called ἡ ἐν κόσμῳ or ἐν σώματι ψυχή; but above this Soul, he sometimes puts another that is opposed to it: the Divine Soul, ψυχή θειοτάτη.

II.3.9: The world is made of a body and a Soul, but above that <81> a Soul that illuminates this one, the pure Soul, καθαρά, which if joined to the world, makes that aberrant world a god; but if it withdraws, a demon remains there (?). II.3.18: the Universal Soul turned towards God contemplates the best, and the general Soul is the image of this superior and contemplative Soul⁶⁹.

So according to Zeller there would be two universal Souls in Plotinus, the second would be the image, reducing the first. What can we make of it?

First, there is never a question of three hypostases: One, Intellect, Soul. On the other hand, if one assumes a higher Soul whose function would only be contemplation, it is not clear how this Soul differs from νοῦς (see also II.16.21, 28). So, it seems that there is one, above all <82> contemplation, νοῦς which contemplates it, and finally a being which is less than contemplation, that is action. Nevertheless, Plotinus seems to say that there are two Souls.

Reference should be made to the function of the Universal Soul, but first we must present the one superior to essence and knowledge. All the ideas [p.49] that make up νοῦς are then presented within the eternal as many visions of the One. All of this is outside of time; unity and multiplicity are equally timeless. Below there can only be a multiplicity in space and time: the images, or things. The function of the Universal Soul will be to fetch the Ideas from within Intellect and bring them down into space and time in the form of generative reasons. The Soul will be the vehicle of the Ideas in space and time. <83> It takes the Ideas and divides them: III.9.1 : μεριστήν ἐνέργειαν ἔχει ἐν μεριστῇ φύσει [it has a divisible action in divisible in nature]⁷⁰.

Hence the Universal Soul taken at its source is indistinguishable from νοῦς, the world of Ideas. Given this intelligible world, let us recognize that sensible things come from these Ideas. How do they come out, if not by the action of this special force that

leaves little by little? Firstly the Soul coincides with Intellect, but a logical moment comes when the Soul emerges to materialise. And consequently, we can say that at a certain moment it is within Intellect, and is the radiance: V.1.3. There are not two World Souls but one, taken when it is about to go out of Intellect, and at the moment of its exit. <84> When Plotinus opposes the divine Soul to the lower Soul, he said that if the first is pure, it is because it is taken at its exit from νοῦς. And, II.3.18, the higher Soul is described as celestial and the lower Soul is said to ensue from above. Finally, there are texts saying that these two Souls are aspects of the same Universal Soul. V.1.10: A part of the Soul proceeds in the sensible world, while a part remains in the intelligible world. V.2.5: The Soul must be one without being absolutely, otherwise it would not produce a plurality if remote from the unity. IV.2.2: The Soul is both one and many, divided and undivided. IV.1.1: IV.3.19: VI.7.9.

But we should clarify this idea. Plotinus speaks of a single Soul: but both powers of the Soul are not so different, to the point of being logically exclusive. The Soul is infinitely divisible <85> and absolutely one - infinitely mobile and dispersed in space and time, and absolutely changeless outside space and space and time. These contradictory attributes may be juxtaposed: while it is nevertheless a matter of two Souls. How did Plotinus reconcile two sets of attributes which logically, seem to be exclusive in the Universal Soul [p.50]? It is all a question of the Universal Soul, and consequently the individual soul. It is to know whether Plotinus triumphed over Platonic dualism. The problem posed by Plato, according to Plotinus, is that of the passage from the intelligible to the sensible and from the idea to things; and the Universal Soul has exactly the function of taking Ideas, multiplying them and diluting them in things. It is therefore intended to solve the Platonic problem, to give us a metaphysical translation of the myths of Plato, who only expressed <86> mythically the process of descent with stories taking place in time.

If Plotinus is merely taking these two contradictory attributes, timeless unity and multiplicity in time, and juxtaposing them in a Soul he calls one but that is in fact two, the problem is not resolved.

The problem is more important still. The process by which the Ideas descend is the same kind as the operation by which the One refracts itself into Ideas. V.2.1: The operation is the same, the principle is the same.

What is this principle? In the case before us, the derivation of the Soul, this principle should make us understand how sensible things proceed from Ideas. It is therefore a matter of a type of causation.

But causality can take two forms⁷¹ depending on whether <87> it is generation in time or a causality that is logical and timeless; when a being generates another being, or when the consequences come out of their principle. The first process involves succession; the second does not imply time. However, the causality in question in Plotinus is neither one nor the other: but the cause is outside of time and the effect within time. The lower and general Soul is time itself; the higher Soul which coincides with *νοῦς* defines itself by its eternity. But we could generalise this definition. It must be said that the cause is one and indivisible, the effect is the multiplicity to which it gives birth.

This is due to the fact that the causation of substance, of hypostasis to <88> hypostasis is unilateral. For us the relation of cause and effect is like any relationship, a relationship between two terms such that if B is related to A, A is related to B. In Plotinus, the effect is in **[p.51]** relation with the cause, and not vice versa. The One generates the multiplicity of Ideas, but without occupying it, and Ideas do not exist for it. Similarly, the engendered Soul turns towards Intellect. But the Soul does not exist for Intellect. Intellect is absolutely locked up in itself. If we place ourselves within the effect, the cause exists. If we place ourselves in the cause, for it at least, the effect does not.

The cause is sometimes a source that remains itself while feeding rivers, sometimes the life of a plant which remains in the roots but feeds the branches, sometimes it is a hearth <89> which radiates (*ἐκλαμπις* [shining forth], *ἐπίλαμπις* [epilampsis, illumination], *περίλαμπις* [radiation]). But Plotinus does not need images. VI.8.8: “The first principle is the cause, though in another sense it is not the cause. Because to speak of cause here would be to speak of an action on something else; yet, nothing is related to the cause.” VI.9.3: “When we speak of the principle of causality, we are not talking about something that is added to it, but to us, since we derive something from it; it however remains itself.” VI.8.18: It happens to be without having been brought into being. Plotinus therefore defines causation between the hypostases metaphysically.

Before examining this principle of illumination, let us say that it has an origin that is easily determined. Vacherot and some others have argued that this <90>

principle could only come from some oriental influence; and the only proof of the oriental influence on Plotinus is quoted by Vacherot. Is it true that this idea is not Greek? But Plotinus sought to examine Plato, and to know the process of the Idea. But in Plato, the intelligible is the immutable; it is the sensible that changes. The Idea alone has an absolute reality. Sensible reality cannot hold the Idea, therefore the Idea produces it; but the Idea cannot go out of itself without ceasing to be the Idea. Therefore, it will be a cause seen from the side of the effect, but that view of itself will no longer be a cause.

So, the principle of radiation is by no means the solution of a problem, it is the statement. It is the mere finding of the need for <91> multiple things to go out of Ideas without the Ideas coming out of themselves. It is unnecessary to appeal to the Orient. It is the same problem stated in its precise form. There is not even an original effort from Plotinus and if he remained there he would not have done much.

[p.52] This is what Zeller reproaches him for. According to him, images only mask a contradiction; the assertion of a cause that does not belong to causation, that has no relation to its effect, and is perfectly sufficient to itself. It is this contradiction that shows through the images covering it. What should we make of it?

I assume that in the mind of Plotinus there is a certain experience that he was able to take from life, the grasping of one side, sensible, the other intelligible, and the transition from one to the other, which together showed him the “soul awakened” and the “soul that dreams”, and which proved to him that awakening exists for the dream, but not the dream for the awakening. How would Plotinus make us understand it other than by images, which furthermore, are intended to suggest a state of mind similar to that experienced by the philosopher? The concepts that Zeller opposes in Plotinus are images, although familiar ones, it is true: there must be a cause either within or outside it, so that the relation of cause to effect is reciprocal. These are real things in space and time. Any development beyond the concept cannot be made with images. Plotinus was able to make an effort <93> to extend the limits of intelligence⁷².

That is right. At the start of IV.8 Plotinus invokes the experience well in a considerable text⁷³: “Often I wake up from my body, outside all other things, inside myself, living the higher life, coinciding with the divine; then when I descend from contemplative reason to discursive reasoning I wonder how it is that this descent is done”.⁷⁴

So, there is an ascertainable passage within the experience of the descent, during which the question does not arise; but it rests when we are at the bottom. At the end of III.8.10: Plotinus advises us on the intuition for grasping the principle. Finally, the idea that God is the cause in relation to us, not in relation to him, is proved by the experience, VI.9⁷⁵.

<94> This does not prove that Plotinus had wanted to make the passage intelligible. Has he at least made an effort to explain why we cannot understand? Zeller treats the theory of categories, VI.1.3 contemptuously; however, it is a very important part⁷⁶. Porphyry placed these three books in the final *Ennead*. The main idea is that Aristotle was wrong to believe that the sensible categories are the same as those [p.53] of the intelligible, considering that the general determinations of sensible being cannot be the same as the general determinations of intelligible being. Here there is an indication of something which announces critical philosophy. Furthermore, there is not a huge difference between mysticism and critical philosophy, <95> mysticism reserving the absolute for supra-empirical knowledge.

We cannot therefore apply categories to being per se. In the first book, he studied ποιῆν [poiesis] and πάσχειν [receiving an external impression, suffering], and established that this category only belongs to the sensible and cannot be related to the intelligible. On the other hand, one type of experience shows us the sensible being derived from the intelligible⁷⁷. So, if we place ourselves in the sensible, we have the right to apply the category of causality, and if we place ourselves in the intelligible, we lose that right.

By this alone, Plotinus saw how his doctrine of higher intuition required a kind of logical complement, that without making an Idea intelligible, which it is not, at least allows us <96> to understand why we do not understand. That's all we can ask of a philosopher of a mystical background. But we must note in Plotinus this effort to move closer to the mysticism of rationalism to a certain extent.

7. The Universal Soul Considered in Itself

<97> We determined in turn the Universal Soul in relation to what follows and what precedes it. It creates nature by creating space and time, because the image once produced demands to be completed. On the other hand, its apex is within νοῦς, but in

addition, or rather less, it has a tendency to come out of it: it comes out thanks to a certain form of single sided causality. We must now determine the Universal Soul in relation to itself, considered in itself. How does Plotinus depict it? Is it a conscious Soul?

[p.54] If Plotinus has represented the World Soul as a higher consciousness, which would create the material world like we create <98> our dreams, then this conception is still semi-mythical. Plotinus has not gone past the point of view of Plato. We are seeking a metaphysical explanation of the procession in him, but we would still be within mythology.

If, on the other hand, Plotinus, instead of representing it as an intensified human soul, constructed for himself the concept of Universal Soul, and in descending by way of impoverishment, arrived at the idea of consciousness, we find in him: firstly a new theory of consciousness, since it will not be something simple, but a product, or something which can be reached by deduction or synthesis; then the Universal Soul can no longer be defined as consciousness, and he must reach inside the Universal Soul. Which of these two solutions did he adopt?

If the texts are examined superficially, the impression given is that the Universal Soul <99> is a conscious Soul, and many people have been deceived, believing that the Universal Soul would have consciousness like ours. Kirchner even maintains that it has reasoning essentially, τὸ λογίζεσθαι. Zeller, without going so far, uses a text in which Plotinus speaks of συναίσθησις [conscious perception], that he translates as consciousness, but recognizes that there are texts and particular theories that oppose it; he concludes that Plotinus contradicts himself and oscillates.

The truth is that Plotinus is the only ancient philosopher that has sought to elucidate the concept of consciousness, to study the fact of consciousness independently of thought, and he had to create a terminology; with a certain awkwardness and some hesitations. But his thinking is clear. If we give to the word ‘consciousness’ a sense of something that tends towards the personal⁷⁸ form, i.e., its ordinary meaning, it is beyond doubt that the Universal Soul is unconscious.

<100> We will see later what consciousness is for Plotinus in detail. Let us indicate only the functions of ἀντίληψις [sense perception]. There is

1. the restlessness of the body,
2. pleasure and pain,
- [p.55]** 3. the perception of the external body

4. memory
5. δίανοια, discursive reason.

However, none of these functions can belong to the Universal Soul.

1. The restlessness of the body. We, who are souls joined to partial bodies, are exposed to dangers. The human body is subject to the influence of other bodies and is exposed to decomposition. Restlessness is the law of the life. But the body of the Universal Soul is all of matter; nothing can threaten it. It flows on, but inside itself, and as it is contained in the World Soul, it is eternal.

2. Pain occurs when the body is under threat of losing the image of the soul, that is when a separation between body and soul becomes <101> possible. In other words, this is the beginning of death. Pleasure occurs when (VI.4.19) the equilibrium is restored, when the soul readjusts is to the body. "Pain is consciousness of a separation from the body, which is deprived of the image of the soul."⁷⁹ But the body of the world is inextricably bound to the Soul, being its necessary unfoldment in the form of space and time.

3. External perception is purely an internal phenomenon of the soul: It demands the meeting of two opposing elements. By right, we all have the perception of all things in the form of νόησις [intellection] that is in a latent form. In order for what is virtual to become actual, an impression has to occur in the body; then the thought goes to the fore, and φαντασία [imagination], occurs at the meeting. This however, is nothing but a phenomenon of sympathy <102> with an external phenomenon.

Perception presupposes firstly multiple external bodies, and secondly, an organ of perception in the perceiving body. However, there is no outer body to the body of the world, and (II.8.2) the World Soul has no organ.

4. Memory. Plotinus disentangles the relationship of consciousness and memory and saw that there is no consciousness where there is no prolongation [p.56] of the past in the present, i.e. memory. But memory belongs to a being that is making progress, which is fallen and seeks itself (IV.4)⁸⁰. In the same *Ennead*, IV.4.⁸¹, he explains the conditions of memory: its condition is time. But the World Soul does not occupy time; time is in it, goes out of it, but [the Soul] is not in it, dominating it, expressing it, but eminently in the form of eternity.

5. Reasoning remains. Kirchner argues that the Universal Soul reasons and

<103> has λογισμός [reasoning] as its essential function. He quotes V.3.3: ψυχὴν ἐν λογισμοῖς εἶναι, but the context is sufficient proof that it is not a question of the Universal Soul, but of the human soul. This is a clerical error.

We see from this examination that the World Soul does not perform any specific function of consciousness. Should we conclude that it is unconscious? The text seems to indicate otherwise, IV.4.24: συναίσθησιν μὲν αὐτῷ ὥσπερ ἡμεῖς ἡμῶν συναισθανόμεθα⁸². But συναίσθησις does not mean consciousness. Let us analyze the word that will tell us about the nature of the Universal Soul.

Quoting a few texts. IV.5.5 ὥσπερ ἐλέγετο... (These concern hearing, that is external perception): “One can say about the affection of hearing what we said of vision; that is a certain συναίσθησις [conscious perception] as in an animal.” <104> The word here means the sympathy of an organ with the body which it perceives, as in an animal where all the parts correspond. And, indeed, the soul is a living thing. IV.4.45: “Within any animal each of the parts contributes to the whole and there is a συναίσθησις where all are completely in rapport with the whole.” The meaning of the word here is consensus, reciprocal agreement. This is the fundamental meaning of the word.

Returning to our text: “The Universal Soul must be attributed to have συναίσθησις [conscious perception] of itself, just as we have συναίσθησις [conscious perception] of ourselves; but it should not be attributed to the sensation, αἴσθησις [sense perception] such as this is always the sensation of a foreign object.” We cannot attribute sensation to the Universal Soul, friends we must give it συναίσθησις [conscious perception]. Our συναίσθησις [conscious perception] of ourselves is an agreement of αἴσθησις [sense perception] and is consequently one consciousness. But συναίσθησις [conscious perception] of the whole may not be <105> consciousness, since there is no αἴσθησις [sense perception]. Συναίσθησις [conscious perception] may therefore mean accidental consciousness, in the [p.57] case where unified elements are elements of consciousness. We translate this word as "internal synthetic unity."

If it is not consciousness, what is it? V.3.13: “The synthetic unity of everything seems to me to be, when a multiplicity converges towards unity, the thought, τὸ νοεῖν.” Plotinus repeats incessantly: the lower function of the Universal Soul is to produce; its superior function is to contemplate. Its divine part is within Intellect.

But what is this thought? Is this consciousness? We shall see that Plotinus’ νόησις [intellection] is a superior function of the human soul, but which does not

strictly belong to it. The truly human function is λογίζεσθαι [reasoning]. With <106> intellection we go out of ourselves. The understanding then is not conscious, and if we keep the word's meaning it manages to create an imagination, φαντασία, in which it is reflected, as in a mirror. In other words, there is consciousness where there is a diminution of νοῦς, a progress which shows a decline, where there is action and weakness of contemplation. Consciousness occurs after a fall: as it falls into the body, it substitutes for the eternity of thought, the continuity of progress over time, that is, consciousness.

The συναίσθησις of the Universal Soul is then the unity of all, the convergence of all the parts which is characteristic of the pure Idea <107>. Each human soul contains the reason of his body and this reason is included in the universal reason. All individual souls are contained within the Universal Soul and each is conscious, but if we take them all synthetically within the Universal Soul, there is no longer consciousness. This unconsciousness is, if you like, something at which we arrive, starting from consciousness, but by way of enrichment, and assuming that within the eternal, our consciousness develops in time. Being given the Soul in the νοῦς, there is nothing to add to it for it to become aware, but something to lose.

It takes a great effort to represent this form of being, but it is not impossible to arrive at it. It will take the realisation that thought is explained by the Intellect. It was said that the Platonic Ideas [p.58] were thoughts <108> of God, but by basing it on Plotinus. It is quite the opposite; according to Plotinus, the act of thinking can get clearer only if we go back to the intelligible, to νοῦς. How? I am conscious of the image of a triangle. It is conscious because I represent it for a certain time and within a certain space. To advance to the idea of a triangle, I will disregard particular images; but as long as I represent it in time, I place under it the idea of a general image. If I want to represent the pure idea to myself, I go out of consciousness, I coincide with the intelligible, and I am no longer me⁸³.

Yet, there is a conscious Socrates. It is only the unfolding of the eternal idea of Socrates into space and time, and consequently if we want to pass from Socrates to his Idea, it will be necessary to assume a pure coincidence with the intelligible, where all consciousness <109> will be abolished; to move to the idea of Socrates, or of the triangle, it is necessary to infinitely intensify the image of the triangle or Socrates. And conversely, to descend from the Idea to the image, from thought to consciousness, there is nothing to add, there is only impoverishment. Aristotle said that we cannot think

without an image; but it is more than conscious thought. This is the super-conscious thinking that Plotinus attributed to the Universal Soul.

This conception of consciousness is absolutely opposed to the modern conception. For us consciousness is something simple. The state of consciousness is the type of individuality. Plato had already made the soul a $\mu\tilde{\iota}\xi\iota\varsigma$ [mixture]. For Plotinus, it is a mixture, something that occurs between thought, or upper limit, and materiality, lower limit. A triangle is between the idea of the triangle and the indefiniteness of space and time. <110> Similarly, a soul can be resolved into pure materiality and the idea of this soul. Finally, there is the movement of this lower limit to the upper limit, and this movement is consciousness.

So, we can understand why Plotinus called Soul the hypostasis that unfolds the Ideas in space and time. If consciousness was bare essence, it might seem surprising that he had given the name of Soul to a being that is not conscious: and this is why the term Universal Soul surprises us. But consciousness is an accompaniment; the Soul could bypass it if need be. The essence of the Soul is its function as a vehicle for the generative reasons.

[p.59] <111> Having solved this problem, Plotinus resolves the necessary relations for the fundamental problem of the origin of the individual soul.

Firstly, the problem of life. What part does nature and the moral person play in the formation of our physical person?

The living body is a collaboration between nature and the soul. It is nature that produces the body; the Universal Soul at least, in the form of nature, and on the other hand the individual soul makes [is] its body. The living body is the meeting point of these two operations. What is the respective role of these two causes?

Essential texts: VI.4.15. The human body exists before the soul has come <112> to take possession of it, but it had the ability to receive it, it was in his vicinity, he received a warmth and illumination. He was prepared for it because it was a body that was not without participation in the soul; because nature has already sketched the body. VI.7.7: “What prevents the Universal Soul from preparing a sketch, because it is the universal logos before the individual souls are inserted? This sketch would be like a preliminary illumination of matter, and then the individual soul going back over these lines, organizes them part by part. And so each soul becomes the body to which it has been added, having thus accomplished his figure, like one who being part of a dance chorus <113> is in keeping with the role assigned to it.”

Interpretation.

Let us represent it as a person who sees figures when looking at clouds, or a rug in the form of geometric lines running in all directions. In a sense it is not without participation of the soul, because it took a geometer to draw these lines. If I look at it, I can unravel a determined figure there, a hexagon, and then I will see nothing else. In a sense it is I who trace, and in another sense it is the manufacturer of the fabric. The design is there; but it is by projecting something from me that I have produced this design there, and even I could project the whole design by imagination; but I found the design ready-made, and I chose what was more agreeable to my imagination. In a sense <114> this is analogous to the body being produced by both nature and the individual soul. [p.60] In the first sense it is simply part of the whole, in the second sense the soul adds nothing by fitting in to it, but is detached from everything. As Plotinus says, there is superposition of the sensible man on intelligible man.

Let us try to go beyond these comparisons and go back to theoretical principles. The principle was clarified by Porphyry, *Elevations* 84, §14: “There are two kinds of generation; one causal and the other is by composition. Simple substances are generated by way of causation, as ψυχή [soul] is by νοῦς, but there is also genesis by composition. However, living bodies are generated in two ways at the same time, by a cause, and by composition”. The method of composition is the path of the physical; we would say that a body <115> is shaped physically by composition. The other mode is one in which a higher cause descends into matter, which is the procession.

Today we distinguish between two theories that explain life⁸⁵. Firstly, the mechanistic explanation in which it is assumed that the phenomena of life are the result of physico-chemical forces that cause the combination of molecules. Plotinus refuted the principle of this theory, arguing that organization cannot come from inertia. Secondly the theory that a principle of a psychological order would descend towards the material, would manage to pull the molecules within its orbit, to magnetise them in its direction.

Plotinus’ solution is not to accept any of these two extreme explanations⁸⁶. Matter alone cannot constitute the living. The individual soul cannot produce life because it is <16> in the presence of the work of the Universal Soul, and it cannot organise constituted matter. There will be cooperation of the two forces. The soul must submit to the laws of nature: it can only lean towards matter in seeking to give

itself a body; but at the same time the body aspires to life because it is the work of the Universal Soul. It is the meeting point that constitutes life.

It is a very profound solution. If the problem is theoretically conceivable, we find that the physico-chemical forces can generate something that already imitates life fairly closely; bodies that are organized chemically happen to rub shoulders with the living. It lacks a beginning, and it would seem that there must be something coming from above. But this something [p.61] would make nothing if matter was not already by <117> itself ready to be organised. All is happening as if life could only be added if these forces were already quite prepared and advancing there.

More generally, the conceivable causality between the different degrees of nature seems to be something like this. We neither conceive how lower forces would manage to create new properties by themselves, nor how superior forces would come to impose refractory matter. Everything happens as if the superior forces were there, waiting for the moment when the lower forces will sketch the form to be received. So, the higher forces, attracted by their image descend into the lower forces to continue the movement⁸⁷.

<118> The first consequence to be drawn concerns the problem of freedom. We have just looked at how life can be reconciled with natural forces. We need to find how the freedom he attributes to the soul is reconciled with the necessity of nature. The solution is in the theory of the formation of the body.

IV.3.13. The question is posed in narrow form: to what extent is the choice of a body free? It is neither necessary nor voluntary. "Souls neither descend of their own free will nor are they sent. It is not necessity, because the descent is made by virtue of an internal inclination which brings the soul to the descent, as one is brought to marriage. It is indeed necessity, but it seems as though $\nu\omicron\zeta$ obeys necessity when it stays where it is."⁸⁸ In other words, if being free consists in remaining entirely what we are, the descent is not pure freedom. But if necessity consists in undergoing an external influence, then the descent is not necessary because it is consistent with a natural inclination of the soul.

Plotinus generalises the problem. To what extent, once the body is chosen, are we independent of nature in which we are inserted? III.1.7: "There is a doctrine - that of the Stoics⁸⁹ - according to whom there is only one principle, which would bind all things to each other and determine each of them by generative reasons. Close to this is the doctrine which says that any state and any movement, of either us or the whole is

derived from the Universal Soul - Heraclitus. [p.62] In this doctrine, all our representations and all our tendencies occur <120> by necessary causes, so that our freedom is only a word.” Thus, the formula for necessity is: a single cause develops all of these effects. “It is a question of finding the solution which, firstly, leaves no phenomenon without a cause and maintains the continuation and order of things, and which secondly, allows us to be something.”⁹⁰ Thus the problem is: preserve causality without sacrificing our freedom.

<121>

8. The Fall of Souls

<122> We turn to the individual soul. What is it? What relationship does it have with the World Soul, with Intellect, with the One? What relationship do we maintain with nature, intelligence and God? The question that immediately arises is the relationship of the human soul to the Soul of all. It is to know whether the most natural solution is real: that of Vacherot and Kirchner⁹¹. According to them, the human soul derives purely and simply from the World Soul as the effect of the cause and a part of the whole.

We know that the One generates Intellect, and Intellect the World Soul. It seems natural to say that the World Soul < > individual souls⁹², and this solution is similar to the Stoic solution. <123> Finally Plotinus spoke of three hypostases: The One, Intellect, and Universal Soul. It seems natural, since there is nothing to make the individual souls come out, as there is for the nature of the Universal Soul.

If it is claimed that the human soul was created by the World Soul you will certainly need to say what the nature of this derivation is. Is it a derivation in time, as a temporal cause generates its effect? No, because our soul predates its birth, predates its body since it survives it; it is eternal like the World Soul. Therefore there is no derivation in time.

[p.63] There remains the hypothesis of the derivation outside of time that comes out of the Soul just like the theorems of a definition. This solution is also unacceptable, because for Plotinus there is a criterion of this kind of metaphysical derivation: the thing derived is lower and consequently possesses other functions. However, Plotinus nowhere says that it has inferiority of this kind; the <124> functions of the human soul

are the same as those of the Universal Soul. He even said that each individual soul would have been able to create the world and did not do so because it was beaten to it by the Universal Soul. If the system seems to demand a pantheistic derivation, Plotinus expresses himself in terms which exclude this derivation.

Richter states the insoluble difficulty. According to Zeller there are at least two hypotheses between which it floats: identify the Universal Soul and the human soul; distinguish between human souls and the Universal Soul; but the contradiction is very rough.

The relation of souls to the Soul of the whole is not at all simple. There is certainly no independence, but also no derivation. When red light comes out of white light through a prism, one cannot say that it has white light as its cause; it is not a causal relationship.

Before presenting the solution, <125> it is necessary to solve another question as to how and why individual souls become detached from the Universal Soul, because at first they are in it or with it. Do they abandon it?

First there were mythical answers. The Universal Soul derives from $\nu\omicron\delta\varsigma$, and hence is lower. The result is that in nature, which is the manifestation of the Soul in space and time, there is not the same harmony as within Intellect: the unity of the world is not perfect. III.2.16: "The Universal Soul is a logos that opposes some of its parts, and thus in nature it generates struggle and war. It is similar to the plan of a drama that contains a thousand battles within its unity." So, if the infinitely many bodies that the World Soul sketches and animates carry within themselves traces of discord, it is natural that the individual souls which will be fitted in to it follows the gradient of inclination <126> that bodies draw. III.2.17: "Every part of the whole pulls all it can to it"; and this would be egoism which would therefore dominate the world of embodied souls, because that which dominates [p.64] each part is the desire to live. Egoism is the law of life, because in space and time each party aims at being the whole; the harmony disappears.

In fact, it is on moral grounds that Plotinus first explains the fall of souls into bodies. At the beginning of V⁹³, he wonders "why and how were they able to forget God their father, they being divine, and ignoring him in themselves? The principle of all evil is audacity, that is desire, the desire to belong only to oneself". The desire for self-existence is the origin of separation.

Of what does this audacity consist? And where does it come from in souls? They exaggerated to themselves their importance because of an effect of a mirage.

<127> IV.3.12: “The souls of men, having contemplated their image in the mirror of Bacchus, have yearned to be down here”. This mirror is matter in general, refraction of the Universal Soul, matter that offers every human soul a body like his. Attracted by the promise of independence, the soul rushes, and then it is a prisoner, chained; and this is the punishment for wanting to live.

Plotinus claims that this doctrine is from all of time. In IV.8.1, he attributes it to Empedocles, “for whom it is a law for sinful souls to fall down here, and with the knowledge that having fled from God, they came here to become the slave of furious discord”. Similarly, Plato said that the soul is chained and entombed within the body. Plotinus adds that this is not just theory, but a fact of experience. We know the passage IV.8⁹⁴ where he speaks of the passage of the soul to Intellect <128> and then to the One. Coming out of this state, the soul feels itself descend, καταβαίνειν. The fall is therefore a fact that can be experienced.

Therefore, in a sense the soul falls into the body by free choice and as a mistake. What is it the result of its fall? It is twofold.

Firstly, when it lived in the Universal Soul, it participated in the administration of the whole world, and as the world is eternal, the individual soul is free of concern as it rests within the Universal Soul; but when it falls into a body placed between other bodies and is destroyed by them, worry about the body and concern for life commences.

[p.65] Secondly, the human soul possesses all the Ideas in the Universal Soul, which is bound by its higher part with the whole of Intellect. But as soon as it takes a body, it possesses more than a part. It possesses by right <129> all of the ideas, in which it can always be reinstated with effort; but in fact, it concentrates on a part of Intellect refracted in space and time. VI.4.16: "Of the whole of Intellect, it jumped to a part. It's as if the scholar who possesses the complete science did not envisage more than one proposition in it." Moreover, for Plotinus, every proposition reflects the whole science. “The soul thus becomes a particular being, because it focuses its activity on the body.” The same idea energetically expressed in Porphyry’s ἀφορμαί [rational tendencies], §39: “The soul inclining towards matter is reduced to deprivation and the exhaustion of its own strength. Instead when it goes back up to νοῦς it finds the fullness of its strength. These are the states of poverty and abundance”.

Thus, it is by an effect of their audacity that individual souls have jumped out of the breast of the Universal Soul <130> into the body. Hence, they experienced a diminution of themselves, because they focus on the body and no longer possess that part of the intelligible world which by right would belong to them whole.

This is the moral point of view. But already, in IV.3, we see a new explanation appearing - §6⁹⁵: “Perhaps it is the multiple element of souls that pulls down, pulling with it the souls themselves, they and their representations”. In IV.7⁹⁶, he explains that the individual soul made his body. So, there would be a physical point of view: the fall would not be the effect of a choice and punishment for audacity, it would be a natural, necessary, automatic process. The soul would no longer fall into a body that it must suffer: it would be productive. Audacity, fall, and punishment would be the moral aspect of a process that would be natural; the soul being something that partakes of the Idea, but <131> carries within itself a multiplicity which, as a weight that is too heavy, pulls it into space and time; so that it becomes the creator of a body by this dividing activity.

It is necessary to briefly review the Universal Soul and its relation to the whole of nature. It is the generative reason of the world. It develops in space and time, creating nature which is found to be [p.66] a large organism whose parts are all sympathetic. On the other hand, each of the component parts of nature is itself an organism, provided we know how to distinguish the parts properly; and there must be generative reasons for all the component parts. There are therefore one logos, a universal fabricator of the world, and particular *logoi* which are the creators of parts of the universe.

These *logoi* are ideas, deprived in some way, taken out of eternity, or <132> rather, extended in space and time. Therefore, the root of the *logoi* is in Intellect.

What are the Ideas which correspond respectively to souls fabricating bodies and to the Universal Soul? For individual souls, each corresponds to a certain Idea that represents it eternally in the intelligible world. Plotinus is less precise about the Universal Soul, but it is clear. He says that the Universal Soul is generated by $\nu\omicron\delta\varsigma$, which is the totality of the intelligibles. While the Universal Soul is represented in the intelligible by all the Ideas, it is an extension of the intelligible considered in its entirety.

Now, for Plotinus, each of the Ideas is in a certain way representative of the entire $\nu\omicron\delta\varsigma$, it contains all others and carries within it the totality of the others in virtual

form: as in geometry, a proposition fully encompasses the science in its entirety.

<133>

Let us draw the conclusions. Take a human soul that is represented by a certain Idea in the intelligible world. This soul prolonging an Idea that is representative, as an idea, of any intelligible whole, could, if need be make everything made by the Universal Soul, an extension of the whole of the intelligible. The soul of Socrates, extending the idea of Socrates which is in a sense $\nu\omicron\delta\varsigma$, could create the world. IV.3.6: “Why did the Universal Soul, which has the same nature as individual souls, produce the world, and not each of the particular souls, while each also contains everything in it?” The idea has nothing of the paradoxical: if it were my soul, my soul would be the whole world; if I do not create is because I find myself in the presence of a universal dream that displaces my dream; to the question posed, Plotinus responds that this is due to the fact that it has been beaten to it <134> by the Universal Soul. It is not a question of time, but the individual souls are pre-empted in law by the Universal Soul [p.67] which is their superior by degree. And if one soul can create the world it will be this one. Every soul expresses everything from a particular point of view, whereas the Universal Soul is placed at all points of view at the same time.

Each human soul tends to make the world, but more particularly tends to create the particular body that expresses his point of view. Then the Universal Soul which also manufactures the body of Socrates, but at the same time the idea of Socrates tends to constitute his body. This body can therefore be considered as mechanically produced by nature, and as created by the idea of Socrates. The fall of the soul is nothing other than the process by which the soul, according to its natural tendency, suddenly finds itself encountering a body already fat with <135> the universal logos. There is a natural insertion and in a certain sense, a fall.

I suppose a white beam falling on a prism and refracted into a thousand multi-coloured rays. I chose the red ray. White light is the Universal Soul, the multi-coloured rays, bodies; the red ray the body of Socrates. In a sense it is the work of the white light that produces the full spectrum; but in another sense, it is merely an extension of a red ray that already existed in the white light. In a sense it extends the white light, in another sense the red light. In the same sense, each living body is both the work of the Universal Soul which creates all bodies, but as inserted into the whole of the matter, and of the particular soul which comes to go into one of these bodies to shine on everything else, and in this way to create it.

<136> We now understand in what sense bodies are the natural works of human souls manifesting their power, and in what sense this insertion is a fall, since by taking refuge in it the soul's powers are decreased. The insertion is at the same time a natural process and a kind of fall.

<137> We have started studying the operation by which the soul takes a body, and we found that Plotinus put forward two alternative points of view, the moral point of view of the fall where the taking of a body is the cause of audacity for immediate, selfish means, resulting in a decline, and the physical point of view, where the fall into the sensible world no longer appears as a morally qualified act, but as [p.68] a physical fact, natural and, in a sense, necessary, which comes under the general law of procession through which everything radiates unity.

Is there a transition from one point of view to another in the mind of Plotinus? Does he have a passage between the fall into the sensible world considered a moral act and the fall into the sensible world considered physically?

It certainly exists in Plotinus' mind. <138> In IV.3.12-13, the descent is firstly presented as a kind magical operation: "The soul is drawn into the body like the forces and powerful attraction of magic. It is a kind of fascination; therefore, this again is the moral perspective; but furthermore, there is a necessity that makes every soul descend at its time, as if it was called by a messenger." And then: "The soul automatically descends into his body."

There is the same difference as regards the choice of a body.

"The soul goes to the body, which is the image of its preference and of its original disposition" – "to the body which was prepared by the resemblance of its disposition" – "to the suitable and similar body". It is the moral perspective.

But another expression: "The soul is going to insert into the body that is necessary for it".⁹⁷

In Section 8 of *Ennead* 4, Plotinus constantly speaks <139> of the body as if it was manufactured by the soul: it is the logos added to matter that makes the body. Thus, there is an insensible transition in his thinking from one point of view to the other.

But does it follow that there is logical kinship between the two ideas? Is it possible to reconcile the idea that the soul has chosen a body by sinning and the idea that an internal necessity makes it enter into space and time? We do not explicitly find

it in the *Enneads*, but it is easy to do if we refer to the meaning of these different terms in Plotinus: idea, soul, time and space.

In the intelligible world, all ideas are given one inside the other. Each idea is representative of all the others. In the intelligible world, everything is whole; everything is the same and everything is different. Thus, all the ideas of individual souls are <140> data in each other.

[p.69] This is because we are outside of space and time. It is different in time and space. In the intelligible world, harmony stems precisely from the fact that each part is the whole; but as a place of space can only contain one object, and a moment of time a single event, each soul, by taking a body, will exclude all the other souls from a certain place and a certain time, and as it carries within it a vague representation of the entire world, it aspires to take up all the room. It cannot do it, being limited by other souls, especially the World Soul that anticipates it. The individual soul is therefore restrained. However, this restraint is precisely the very definition of sin, which, considered physically is the natural descent of the soul into space and time; <141> that is called sin or fall by very definition even when interpreted morally.

I.8.14: “Entering matter, establishes the fall of the soul. It weakens, since all its powers can no longer take action, and what prevents it is matter which forces it to curl in on itself, to tighten”. In other words, we can say that sin is a cause, but also that it is an effect. In reality, it is both at the same time; it is the same as the necessary, physical descent, of the soul into the body. There are two aspects of the same operation: moral if it is considered, physical if we simply describe it.

The theory of the fall into the sensible world is therefore very complex.

< 142 > We will compare this conception to that of Plato. The object of Plato's philosophy was the resolution of the sensible in intelligible, things in Ideas. This is the path of the dialectic. The reverse process, the descent of the intelligible to the sensible had been indicated by Plato in mythical form. What Plotinus did was to take elements of Platonic philosophy and to restore continuity to them through a process that starts from the Good and descends to the Ideas, culminating in the sensible world. The important part of this procession is the procession of Ideas to the sensible world, and it is the soul that effects the passage, hence importance of the theory of the Soul in <143> Plotinus.

There is a World Soul and individual souls. They play the same role of lowering the intelligible into the sensible. Plotinus believed that the main points of this

theory are found in Plato, and indeed they are indicated, [p.70] but without being connected to each other; these are only the stations along the procession.

The Universal Soul is a mixture of divisible essence and indivisible essence (*Timaeus*)⁹⁸. According to Plotinus, Plato would have meant that the Soul is the vehicle of Ideas, being Idea from above and sensible world at the bottom. Indeed, Plato presents it neither as creative nor as organizing things: it is a conservative power of movement. It is true that for Plotinus, the Universal Soul creates the material world; but Plato (*Laws*, X) already said that the World Soul is prior to all bodies. Even in <144> the *Timaeus*, it is mathematically composed, so that we would be right to put it among these intermediate essences, between the intelligible and sensible. Plato prepares Plotinus for this point of view.

Moreover, we find in the *Timaeus* the indication of a theory of time, the moving image of eternity⁹⁹. But for Plato, time is primarily the movement of the heavens, which is maintained by the World Soul: already it is, if not creative, at least supportive of duration. In Plotinus, the World Soul is what develops the eternal idea in duration.

For the human soul, there are fewer relationships. In Plotinus, it is already something intermediary between the pure idea and the sensible thing, less than one, more than the other. And we already find the theory of a fall of the soul into <145> the body, and the idea that this incarnation is done by a natural process. Only in Plato are both theories given without there being reconciliation, one in the *Phaedrus*, the other in the *Laws*¹⁰⁰. In addition, we do not see the exact relationship of the human soul with the idea: it is relative, but the idea is a kind, the soul is individual. What is lacking is an indication of the procession.

Here again Plotinus completed Plato, but he had to part from him. First, how can the soul come out of the Idea? Plotinus' solution is that it is essential that the Idea is already individual. Then the passage becomes easy; the Good generates the Ideas by radiation and if they are supposed to contain souls virtually they are individual. It suffices to assume a fall into time and space <146> in order to pass from the idea to the soul.

Furthermore, every individual soul is going to end up in a body. On the other hand the Universal Soul flourishes in the material world. However, it is required that everything that [p.71] comes out of the individual soul to flourish in space and time is perfectly coordinated with what comes out of the Universal Soul. But the individual soul extends one intelligible, the Universal Soul all of the intelligibles: in other words,

every intelligible is representative of all the intelligibles; each particular idea of all other ideas. Yet, it is an essential point of Plato that everything does not participate in everything.

<147>

9. The Theory of Consciousness

<148> We will now take the human soul incarnated in a body and study its main properties. At the forefront is consciousness.

Plotinus is the only ancient philosopher who has presented a theory of consciousness, which has even reached the idea of consciousness. He did not find a fixed terminology for doing so, hence there are great difficulties, and we understand that historians of philosophy have made mistakes.

Richter recognizes that the concept of consciousness is at the bottom of many theories of Plotinus, but believes that he has not made it clear. Zeller still claims that Plotinus <149> contradicts himself and sometimes said that pure Intelligence thinks itself - Vth *Ennead* - and sometimes Ist *Ennead* - that consciousness is only possible for the imagination. We believe just the opposite. Νοῦς is the only one to think itself, and consciousness implies a set of images: it simply means thinking itself; this is not being conscious, as we shall see in detail.

Let us try to fully understand the texts taking into account the fact that Plotinus' terminology is not fixed.

Among the terms that have been translated as consciousness, we find the word συναίσθησις [conscious perception]. What does that mean? IV.5.5: "One can say hearing what we have said about the view; the condition is a συναίσθησις, like that of the parts of an animal." The word here has a clear meaning. [p.72] But for Plotinus <150> perception is sympathy of the organ with the object with which it vibrates in unison. The word signifies sympathy. Similarly, I.1.9: "The discursive mind, in making a choice of impressions coming from the sensation contemplates the Ideas and contemplates them as a συναίσθησις [conscious perception], because authentic δίανοια is a likeness and an internal communication with the outside world." Again, the meaning is clear. Plotinus attributes to δίανοια the role of searching for an Idea within νοῦς that it approximates to the sensation. It has this role in perception. The word here means the sympathetic communication between δίανοια and the material object which is going to be picked up within the representation. Sympathy is the fundamental

meaning of the word. Step by step we are moving towards the meaning of consciousness.

If it is a sympathy, more particularly it may be the sympathy of the <151> parts of a being one for the other, their agreement with each other. IV.4.45: "In an animal, there is sympathy of each organ towards all the others and of the whole for the whole." IV.4.9: "The Universal Soul will no longer be whole; there will be various powers in the diverse parts of the world; there will be no more συναίσθησις." This is already the more particular sense of consensus, of inner harmony.

In this second sense, we'll go within the meaning of consciousness. Let us suppose that for Plotinus consciousness is, from a certain point of view, sympathy, a harmony between the different parts of the Soul; then the word may mean consciousness. In III.8.4, Plotinus attributes to nature a space of slumbering consciousness: "Nature remains within its <152> own equilibrium and within a sort of συναίσθησις." Here this consciousness is an internal consensus; an equilibrium. V.3.13: "συναίσθησις is the αἴσθησις [perception] of a plurality." The word can therefore mean consciousness, but it is not the fundamental sense of the word.

We can already see a certain conception of consciousness. Plotinus fell upon a quite modern conception of consciousness at the first attempt. Consciousness is primarily synthesis, assimilation, sympathetic communication of all parts of the soul. Contemporary psychology admits increasingly of unconscious states of mind. For a state to become conscious there must be assimilation, that we do it within the current of our personality. [p.73] Plotinus said that it is something of this kind. Consciousness would be a power possessed by the soul. <153>

Plotinus often uses the word αντίληψις [sense perception]. At V.1.12, he asks himself "how it is that we have certain ideas (justice and beauty) without being aware of it." When the part of the soul is not communicating with the part of the soul that feels, then it does not cross the whole soul; we become conscious of a part of the soul when there is transmission and consequently αντίληψις. IV.8.8: "We do not know what is happening in a part of the soul: it has to have penetrated the whole soul." This is Plotinus' first meaning.

But this is only the least important part of his theory. Consciousness is primarily a certain unification of impressions from below, but it is much more a division <154> of elements, instead of going up, descending. The soul is an intermediate essence between νοῦς and the body. It therefore has two functions: first,

to unite the impressions that come from the body and from there into consciousness; secondly, to bring down the Ideas, again into consciousness. Consciousness occurs either by the unification that comes from below, or by division that comes from above. In the second direction, it is analysis of the Ideas.

IV.3.30. We constantly participate in pure thinking, in νοῦς, but we are not conscious of it, “because thought is one thing, consciousness of thought is something else. We always think, but we are not fully conscious of it”. What is necessary for consciousness to join the thought? “The pure act of thought is hiding within, having not yet proceeded to the <155> outside. But the logos having developed and directed the imaginative power reveals it as in a mirror: then conscious perception of thought occurs.”¹⁰²

Therefore, for the Idea to come into consciousness, it must be coupled with an image that it is reflected in the imagination, the faculty for forming images with sensations, and especially keeping them under the gaze of consciousness.

Important passage: I.4.10. Consciousness is not essential for thought, neither for virtue or happiness. The hero does not know he acts with [p.74] courage; consciousness of an act only weakens the energy. “The intense life is that which does not dissolve in feelings.” How and when does consciousness occur? “Consciousness of thought appears to be born when <156> thought bends back on itself and when this thought which takes place in the direction of the life of the soul is as if it were pushed backwards, just like the image in a mirror rests on the free and shiny surface... In the soul, when there is tranquillity of the surface on which images of thought are revealed, we perceive them and we have so to speak, sensible knowledge.” Consciousness occurs when pure thought divides, like falling on a mirror.

We have already found this image of the mirror in the theory of the fall of the soul. The soul perceiving its image in matter like in a mirror is seduced and drops. This is the same image, and basically, it's the same idea. For him, consciousness is <157> a transient state, the state of the soul after the fall. Consciousness is less than thought, more than mere materiality. The sphere of consciousness is coextensive with that of the soul; and this is because it is aware that the soul is superior to materiality and inferior to pure thought.

It follows that consciousness is coextensive with the life of the soul. The soul sits in the intermediate realm between the sensible and the intelligible, and the same for consciousness, which also remains in the intermediate plane; it is a becoming, progress.

In essence it is therefore something unstable. It is not of being but change. It is a movement that can take two directions: sometimes aspiration upwards, sometimes descent. This perpetual oscillation in the soul is consciousness. I.1.11: "Consciousness must occur because we do not always use what we possess: we do use it when we direct our mean powers either up or down." Consciousness is essentially, instability.

It always comes down to saying that it is a deprivation: it is the effect and also a sign of the fall. In V.8.11, Plotinus says "To become aware, is to stay out of what is grasped". Plotinus explained that to understand beauty, you must be merged with the beautiful itself; it is an [p.75] intimate union and sympathy. Things that fall most clearly under consciousness are precisely those which are most foreign to us: thus so, we are more conscious of disease than health. "But we are unconscious of ourselves and the things that are truly ours. But in this state of unconsciousness we are <159> in more complete ownership ourselves, of everything that belongs to us, and we are stirred to make our being coincide with the science of ourselves." IV.4.4: "We can possess something more strongly unconsciously than if we knew; because if we knew we would possess it as something else, whereas, being unaware, we tend to be at one with what we have." Consciousness always involves an exteriority of the subject relative to the object.

This is diametrically opposed to the modern conception, according to which adequate knowledge is consciousness, where there is perfect coincidence of the knower and the object known, but for Plotinus, consciousness involves externality.

What consequences are to be drawn? A being that grasps through consciousness cannot grasp itself. On the other <160> hand it is the attribute of the soul and it sits between the sensible and the intelligible. Therefore, the soul does not know itself, and this should not be through consciousness. Plotinus has drawn these consequences.

Firstly. The soul does not know itself. V.3.9. Why should we deny the soul the power to think itself? "This is because we have reserved it the function to look outside and to engage in the unrest." The soul is condemned to live externally to itself, never being fully itself, what it wanted to be.

Secondly, the being that knows itself is pure Intellect. It thinks itself and it alone thinks.

What does Plotinus understand <161> by νοῦς? This is not a faculty of the soul. The soul can rise up to Intellect, but on the condition of rising above itself.

Intellect does not sit in souls but is self-sufficient, it exists in itself. It is something in which individual souls may participate but is not in the souls. The Idea is independent of the soul: the soul can return with effort to [p.76] the Idea from where it descended. In V.3.3, Plotinus clearly explains: “The soul falls towards the sensitive life, it rises to Intellect, but Intellect does not come to it, it is we who ascend Intellect”.

It is basically Plato’s conception, so it is surprising to see the opinion of Zeller (2nd ed., p. 518). According to him, one cannot see how νοῦς may be <162> both our reason and a being above us, nor how the soul distinguishes itself from it radically and nevertheless defines itself by it. Souls participate in the world of Ideas to the extent that they can participate in it; but distinguish themselves from it because they went out of it; and yet are explained by it because they are their image. The real difficulty is rather to understand how this superior Intellect, which is exterior to the soul, and by the same token a stranger to consciousness, can think itself, furthermore, be alone in thinking itself. How is it possible?

Let us first recall why Plotinus puts νοῦς above all consciousness. I.4.10: "The activity of νοῦς remains hidden in us because it has nothing to do with the sensible world, because it is through <163> the intermediary of the sensation that it has to work on consciousness. But why wouldn't νοῦς and Soul that surrounds it, act before the sensation and generally before consciousness? For there must be an act prior to consciousness, because thinking and being are one." Thus, for νοῦς thinking and being are one and νοῦς has no consciousness because it has no sensation. How will it understand?

Νοῦς is the κόσμος νοητός [intelligible world]. This world contains all the Ideas, all of which are related to each other. Each idea is a νοητός [intelligible] therefore an object of thought; but on the other hand, each idea contains all other possible ideas wrapped up in it. So, one side of each intelligible is one object of thought <164> and the other contains all the other intelligibles. But in that capacity can we therefore not say that it thinks them? What is thinking if not containing Ideas in oneself?

Plotinus tells us that in the Intellect there is movement, but this movement is "an immobile and tranquil movement", an evolution that for each intelligible consists in browsing through the whole series of intelligibles; [p.77] but this review does not occupy time: it all occupies a single moment that is eternity. There is therefore a reflection of the idea on itself, and finally a thought that has nothing in common with

consciousness of distinct moments that are heterogeneous and successive. It is this course of thought by itself that is the thought of νοῦς thinking itself.

Text. V.3.13: “Thought <165> seems to be when a plurality of terms come to coincide, a συναίσθησις [conscious perception] of everything, while a certain thing thinks itself, which is strictly speaking νοεῖν [noesis - the exercise of reason].”

The word συναίσθησις here means internal synthesis. When all the intelligibles come to blend into each other, then there is the thought of thought. It is the presence of all intelligibles in every intelligible that constitutes the thought of thought by itself, the νοῦς is thinking itself. If Plato did not name his intelligible world νοῦς, it is because he did not accept the participation of all the ideas in each other. If he had accepted it, he would have called this world νοῦς because the thought of thought would have been wholly present everywhere to itself, there would have been thought of thought. That is why Plotinus has spoken of a thought.

<166> Thus thinking means penetration of the intelligibles, each by the others. Let us clarify this idea again, and the theory of consciousness at the same time.

In V.3, Plotinus seeks the required condition for self-knowledge. He finds it is only possible by a coincidence of that which knows with what is known. If there is only one footprint, then knowledge is imperfect. For self-knowledge, it must therefore be an absolutely simple principle that requires the identity of subject and object. In sensation, there is knowledge of exterior modifications to the being that senses. In discursive intelligence, it either synthesises sensations, and then it is more than sensation, or it materialises Ideas; but it is always different from what it knows. Self-knowledge <167> cannot appear to be that which is both νόησις [intelligence, understanding] and νοητόν [intelligible], that is to say νοῦς.

We discussed the difficulties raised by the problem of consciousness. To understand Plotinus’ Idea, we must first make a clean sweep of our current conceptions. We represent an Idea to ourselves as something subsequent to consciousness. To represent it [p.78] as being independent is to project it outside of consciousness. The idea is the centre around which consciousness gravitates, and which is given first. Consciousness is only a diminution. How could we get to place ourselves in the state of soul which is that of the Ancients?

Here is the significant idea of identity: A = A. How I am conscious of it <168>? It is because I change constantly, that I constantly pay attention to myself and this idea at the same time. Furthermore, I see this idea as an image. Finally, I'm

exterior to it; it is a stranger to me. So, it is for these three reasons I am conscious at the same time that I think. I abstract from that which, at any moment comes back to me, of these images, of this exteriority, in respect of the Idea. I have the pure Idea, but I have, so to speak, coincided with it; I shall participate in its eternity, unconscious in a sense, and yet coinciding with my thoughts: it thinks itself within the unconscious.

The Greeks took an idea, took it to the state of <169> purity, and saw nothing more in consciousness than something that comes out diminished. Because if this idea is thought thinking outside of time, moving from eternity to time, there is nothing to add. It is necessary that Idea degenerates into image, eternity into time, interiority into exteriority.

This amounts to saying that the ancients did not allocate to consciousness and the person the eminent dignity that we have attributed to them¹⁰³. Putting personal thoughts at the centre of things is a very modern idea. For the ancients, consciousness is intermediate between the intelligible, which is hyperconscious, and the sensible, which is unconscious. V.9.7: “It is not because Intellect thinks that the Idea exists, it is because the Idea exists that Intellect thinks.” Consciousness is like an accessory. A word referring to it incessantly is παρακολούθημα, accompaniment. It joins the Idea in its descent, but in the opposite sense to that given to it by modern materialists, for whom consciousness is superadded to more complex movements of the cerebral substance; consequently, it is something inferior to it. In contrast, for Plotinus, it is an attenuation of something superior to it. It is not phosphorescence [emission of light without any perceptible heat] that illuminates the movement; it is darkness, a shadow that the Idea projects below it.

[p.263] Notes

All references to Bergson's works are given in the text of the Centennial Edition, Paris, PUF, 1959.

Notes on The Lectures on Plotinus

PRELIMINARY NOTE

Bergson * indicated to a German translation of Mueller, extracts translated into English and to the French translation of Bouillet. He was very critical of the latter: "it is less a translation than a paraphrase"- he hardly uses it when quoting passages of Plotinus; at least we find no literal quotation from Bouillet's translation of it. Bergson was a good Hellenist and the late Philippe Soulez had a French translation of book A of Aristotle's *Metaphysics* done by Bergson himself. It is most likely that Bergson translates directly from Greek to French. When it seemed useful to refer to the *Enneads* text itself, it is É. Bréhiers' translation which is cited. At this time (1996), a new translation of the *Enneads* is currently being published, by P. Hadot (three volumes published, Treatise 38, Paris, 1988 Treatise 50, Paris, 1990 Treatise 9, Paris, 1994).

1. "Plotinus is a Greek uniquely inspired Greeks." This is a point on which Bergson hesitated. The course of Clermont-Ferrand, vol. IV, p.147, reflects on the influence of the Christianity; the course at the Lycée Henri IV, in the same volume, p.146, ms. P.192-117 reflects more on the influence of Judaism; this course at the École Normale Supérieure supports the contrary thesis of Hellenic autarky [The word "autarky" is from the Greek: αὐτάρκεια, which means "self-sufficiency"]; Bergson's latest position on this point can be found in *Two Sources of Morality and Religion*, p.1161: "The philosophy of Plotinus, in which the development culminates, and which owes as much to Aristotle as it does to Plato, is unquestionably mystic. If it has undergone the influence of Eastern thought, so very much alive in the Alexandrian world, this occurred without the knowledge of Plotinus himself, who thought he was merely condensing all Greek philosophy, with the whole object of opposing it to foreign doctrines." [A. Audra and C. Brereton translation, p.219]
2. Porphyre, *Vie de Plotin*, ed. and trans., É. Bréhier in Éditions des Belles Lettres, en tête de l'Ennéade I, p. 1-31. See also: J. Pepin, with the collaboration of L. Brisson, M.O. Goulet-Caze, R. Goulet, D. O'Brien, *Porphyre, la vie de Plotin*, vol. I (1982) et II (1992), Paris, ed. Vrin.
3. Eunapius, *Life of the Sophists*, ed. and trans., W. C. Wright, London, Loeb Classical Library, 1961.

*Manuscript, p.25-27, vol. IV, p.27

[p.264]

4. Eudoxe de Cnide, *Fragments*, ed. F. Lasserre, Berlin, 1996.
5. “A system which combines all the principal ideas of Greek philosophy.” This synthetic thesis sheds light on Bergson's understanding of Greek philosophy. It helps to clarify the meaning of his attention to Plotinus; not only attention on a particular author, but wholly on an author who condenses in himself and summarizes all the Greek philosophy. Having thus reduced the infinite historical diversity to the determined and the finite, Bergson goes out of mere scholarship and gives a critical and resolute judgment, not only on Greek philosophy, but on all those who, at least at times, withdrew, “hardly having done little more than repeating Plotinus” (*Mélanges*, p. 1076). See earlier in this volume IV Introduction, p.8-9 for the constancy of Bergson's synthetic thesis; but for a contradiction see, n. 64.
6. Némésius d'Émèse, *Sur la nature de l'homme*, ed. and trans. French. G. Verbeke et J. R. Moncho, Leyde, 1975.
7. Hiéroclès, *Fragments et témoignages sur le traité de la providence*, in Photius, *Bibliotheca*, ed. and trans. R. Henry. Part III, cod. 214, Paris, 1962, and Part VII, cod. 251, Paris, 1974
8. Allusion to Ammonius in Porphyry, *Life of Plotinus*, S3.
9. *Life of Plotinus*, § 20-21: long quotation of a passage from the book of Longinus, *The End of the Line*.
10. Kirchner, *Die Philosophie des Plotinos*, Halle, 1854. See also Zeller, *Philosophie der Griechen*, Part.2, p.474-475, note.
11. The manuscript is defective. With the mention of "Gordian", we can assume a reference to the *Life of Plotinus*, §. 3: his interest in Persian and Indian thought motivates Plotinus to follow the Emperor Gordian to Persia; "...but Gordian was defeated in Mesopotamia. Plotinus barely escaped and fled to Antioch."
12. Hegel, in his history of philosophy praises courtiers for not having allowed the founding of Platonopolis.
13. On Amelius: L. Brisson, "Amelius, his life, his work, his doctrine his style", in *Aufstieg und Niedergang der Römischen Welt (ANRW)*, II, 36, 2, Berlin-New York, 1987, p.793-860
14. That of Plotinus, of course. We leave these tracks of speaking style, where the word translated a living thought, following its idea without caring about "reattaching the [railway] carriages."

15. Although the writing is not very legible, the manuscript seems to be: "Everything he experienced". Either there is an accidental slip of the tongue for "everything he wrote", or that is what Bergson thought; either way the slip of the tongue is revealing.
 16. In the notes to the listener: "He brought the same penetration to practical things as he did in his writings."
 17. *Life of Plotinus*, §.10.
 18. *Life of Plotinus*, §.2.
 19. Eunapius, *op. cit.*, p.358-359, "ὁ μὲν γὰρ Πλωτῖνος τῷ τε τῆς ψυχῆς οὐρανίῳ καὶ τῷ λογῶν καὶ αἰνιγματώδει τῶν λόγων, βαρὺς ἐδόκει καὶ δυσήκοος".
 20. In this phrase, the words *autre* and *encore* were not included in the manuscript.
 21. On the order of Plotinus' treatises, see P. Hadot's Introduction to *Treatise 38*, Paris, 1988.
 22. *Ennead* V.8 : 'On Intelligible Beauty'.
 23. *Ennead* II. 9 - title of the treaty in Bréhier's translation: "To those who say that the author of the world is evil, and that the world is bad."
 24. Von Kleist, *Plotinische Studien. Studien zur IV Enneade*, Heidelberg, 1883.
 25. Compare with *Lectures*, Vol. 3, p.107-108
 26. This is also the main theme of *Creative Evolution*.
 27. Compare with the lesson on Plato, in the 'Lectures on Greek Philosophy', p.107-131, from manuscript, vol. IV, p. 96-105.
 28. *Ennead* III.2.15-16.
- [p.265]**
29. *Ennead* VI.7.11.
 30. One can compare the whole paragraph with *Creative Evolution*, p.578
 31. A word is missing in the manuscript. One can compensate, perhaps, with "decline", which would then be taken up a few lines down. See below, n.33.
 32. *Matter and Memory*, p.302; the *Two Sources of Morality and Religion*, p.1199
 33. *Ennead* III.8.4: "We always find that production and action are either a weakening or an accompaniment of contemplation". Quoted in 'The Perception of Change', p. 1374.

34. *Ennead* IV.8.1 – text quoted in p.93 of the manuscript, vol. IV, p.52.
35. "Ecstasy is a form of sympathy, but not the only one." One can take on the living progress of Bergsonian thought by comparing this phrase with those of the lesson on the 'Alexandrian School', ms. p. 184, vol. IV, p. 149. It is by such phrases that one understands the organic unity of Bergson's thought through its development. See, for example. Introduction, p. 8-9.
36. A word is missing in the manuscript.
37. See note 38.
38. It is in fact a treatise of Porphyry sent to Iamblichus; the closest passage that Bergson quotes is found in Stobaeus, XXI, 27, *Commentary on Alcibiades*, preface (ed. Segonds, Part 1, p.3-7). It does not seem that the idea appears in the *Commentary on the Timaeus*.
39. *Ennead* II.9.6.
40. *Ennead* IV.8.1.
41. *Ennead* II.4. 7.
42. *Ibid.*
43. *Ennead* IV.7.8.
44. *Ennead* V.4.
45. *Ennead* V.1.8: "Therefore our theories are nothing new and they are not modern; they were laid down long ago, but not developed and we are now the exegetes (interpreters) of these old doctrines, whose antiquity is testified by Plato's writings.
46. The manuscript states: *didactique*
47. *Phaedrus*, 259 b-d.
48. *Republic*, III, 415 a-b.
49. *Phaedrus*, 246 a-d.
50. One can easily imagine that it is precisely this mythical part which was of most interest to Bergson since it deals with becoming that is not reduced to fixed Ideas. On the last sentence of this paragraph, see the end of the lesson on Zeno in the Black Notebook: "Anyway, you should always accept, in the presence of motion, either that reality is absurd or it is an illusion"(ms. P.35, vol. IV, p.179).
51. L. Couturat's latin thesis, *De platonis mythis*, 1986.

52. *Ennead* IV.2.2.
53. Here is the sentence in question. As Plotinus quotes it: "In the indivisible essence and always identical to itself, essence becomes divisible in bodies, the demiurge made in mixing them, a third form of essence as space"(Timaeus, 69 d)
54. In this phrase the term 'wholly' [*tout*] does not appear in the manuscript.
55. *Ennead* III.5.9. One can compare with text translated by Bréhier: "Myths, if they are really myths, separate the circumstances of the story in time, and often distinguish between beings that are confused and not distinguished by their rank or their powers ... but after we have been educated myths can teach, leaving us free, if we have understood them, to reunite their scattered data."

[p.266]

56. *Ennead* V.7.1.
57. The manuscript reads: "It is basically the modern approach." It is also Bergson's in *Creative Evolution*, p.489-490.
58. Illuminating sentence for understanding the suture between *Matter and Memory* and *Creative Evolution*, as two aspects of the same problem; personal consciousness is first placed in the conditions of life of the individual (*M & M*), then in the more general conditions of the whole system of living beings (*EC*).
59. One easily recognises here the two ready-made garments which are spoken of in *Creative Evolution*, p.493. But let's not jump to conclusions without having read Lesson 9 of this course and in particular the last pages.
60. Stobaeus, *Eclogae Philosophorum*, 4 vol., repr. Berlin, ed. C. Wachsmuth, O. Hense, Berlin, 5 vol., 1884-1923; repr. in 4 vol., 1958, Part I, p. 488.
61. *Timaeus*, 34d-36e.
62. Bergson said otherwise in his lectures on 'The History of Greek Philosophy' at the Lycée Henri IV, ms. P 192-117, Vol IV, p.146: "We recognize without difficulty the ψυχή of the Stoics in the World Soul (of Plotinus)". Both assertions are perhaps not as opposed as it seems. As judgments on the history of ideas, there was undoubtedly a transition from one thesis to its opposite. But as these Plotinian themes serve to support the reflection of Bergson himself, this evolution shows a deepening of his thinking more than the development of his erudition and its exegesis. The first point of view is largely integrated in *Matter and Memory* and the second is already moving in the direction of *Creative Evolution* and perhaps leaves the area of research which will be the one of the *Two Sources*.
63. Hypothetical sentence. The manuscript reads: "But this defect in production within becoming, logos has not gained the upper hand, but what wins out is a deterioration of the idea that the logos accidentally brought with it."- This does not seem intelligible.

64. Under this title Bergson quotes the *Aphormai pros ta noeta* (“Starting points for the intelligibles”), better known by its Latin title *Sententiae Ad Intelligibilia Ducentes*, ed. E. Lamberz, Leipzig, 1975.
65. *Ennead* II.3.17: “This matter is like the bitter deposit left by higher beings; it spreads this bitterness and communicates it to the universe.” - Note that the term "bitter dregs" used by Bergson, may be borrowed from the translation of Bouillet (vol.1, p.192): “The matter of which it (the universe) is composed is in a way the bitter dregs of the higher principles...”.
66. The word *remote* has been added by the editor.
67. *Ennead* III.6.19.
68. A word is missing in the manuscript.
69. *Ennead* II.3.18: “The Universal Soul must contemplate the great beings and always bear towards intelligible nature and to God.”
70. The whole sentence is: “διενόθη, ὃ οὐ νοῦ ἔργον ἀλλὰ ψυχῆς μεριστήν ἐνέργειαν ἔχει ἐν μεριστῇ φύσει”, “Reflection is not the function of the Intellect, but of the Soul whose act is divided in a divisible Nature”.
71. *Essai sur les données immédiates de la conscience (Time and Free Will)*, p. 133-134. See also the Lecture on Spinoza in *Cours, Vol. III*, p.86-89.
72. We can compare this expression of the widening of perception with that discussed in *La pensée et le mouvant*, “La perception du changement” (“The Perception of Change”), p. 1370.
73. Bergson has already alluded to the text above, see n.34.

[p.267]

74. *Ennead* VI.9.9.
75. *Ennead* VI.9.9.
76. E. Zeller, *La philosophie des Grecs*, III, 2, Plotinus, S 4, ‘Nous’. Bergson is often critical of Zeller in this course, ms. P.81, 91, 124, 161, etc. It does not prevent him from being very indebted to him, as we shall sometimes indicate. Moreover, read, a complimentary note on Zeller about his ideas on Socrates, infra in the hand-written notebook, p.81. It reminds us that the background of the education Bergson received in Greek philosophy consists of Émile Boutroux’s courses at the École Normale Supérieure - three volumes (*Lectures on Socrates, Lectures on Plotinus, Lectures on Aristotle*) have been published in recent years by Éditions Universitaires with the help of Jérôme de Gramont. Just after the war of 1870 Boutroux was Zeller’s student, and he even translated the first volume of his *Philosophie der Griechen* into French. It would also be interesting to carefully compare the two methods used by Bergson and Boutroux in their history of

philosophy. Neither of them separates scholarship and speculation. They want to find every historical thought as both a living thought and as a possible truth, within the framework of a debate where exegesis remains constantly deployed together with a questioning of the content. But in doing so, Boutroux, having a more discreet personality, a community attitude and an approach that so subtly insinuates, it is often unclear about what he thinks. Conversely, Bergson is more personally committed and mobilises thinkers to favour his way of thinking.

77. For an essay about the genesis of bodies, see *Creative Evolution*, p. 653.
78. Which is the Bergsonian meaning, see *Creative Evolution*, p.718, note p. 722-723.
79. Bréhier translated this passage IV, 4, 19 as: "Pain is knowledge of a weakening of the body, being deprived of the image which it possesses; pleasure is the knowledge that the animal has of the reinstallation of the soul in the image of the body."
80. *Ennead* IV.4.4.
81. *Ennead* IV.4.6. This is probably the most anti-Zenonian (in Bergson's terms) of Plotinus' texts that can support the theory of the ancient influence of Plotinus on Bergson.
82. *Ennead* IV.4.24: "We must therefore give it (the universe) an intimate sense of itself similar to the one we have of ourselves."
83. Regarding the presentation and critique of these concepts, see, for example, *Mélanges*, p. 1056 and 1059.
84. *Aphormai*, see n.64 above.
85. *Creative Evolution*, p. 413-414.
86. *Ibid.*
87. We agree that the preceding pages are a document of prime importance and irreplaceable for immediately grasping the genesis of the theses of *Creative Evolution*.
88. Here is the translation of Bréhier: "The arrival of the souls is not voluntary and they have not been sent; or at least their will does not consist of a will of choice; they move towards the body without reflection, like jumping from instinct, or like the inclination without reflection to desire marriage."
89. The underlined expressions are Bergson's notes, which he inserts into the quotation.
90. *Ennead* III.1.8.
91. See Bergson's own bibliography, ms. p.27-28, Vol. IV, p.26-28.

92. An illegible word. Substitute with generates or produces.
93. Compare with Bouillet's translation: "Empedocles said that it is a law for sinful souls to fall down here, that he himself is far from God and came to earth to be the slave of furious discord."

[p.268]

94. Bergson is probably referring here to *Ennead* IV.8.6, but the reference is not very clear.
95. Read *Ennead* IV.3.6.
96. *Ennead* IV.7.1-2.
97. *Sic*.
98. *Timaeus*, 34 d-e.
99. *Timaeus*, 37 d.
100. *Phaedrus*, 248 a - 249 b; *Laws*, X, 892 a - 899 d.
101. Bergson has already quoted this passage above and the following, 'Lectures on Plotinus', ms. P. 103-104.
102. The two sentences quoted by Bergson are in the reverse order in Plotinus' text.

One could not better mark the distance between Plotinus and Bergson than he has done himself.