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Deliberation in Aristotle's Ethics and the Hippocratic Corpus

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Abstract
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Supervisor: Susan Sauvé Meyer

Many scholars view Aristotle as the source of the particularist position in modern ethics –the view that action-guiding principles cannot capture the complexity of moral cases. John McDowell, Martha Nussbaum, and other particularists have developed this aspect of Aristotle's ethics. Rather than aiming to provide an account of action-guiding principles – the view goes – moral philosophers should provide a theory that focuses on situational sensitivity, judgment and moral perception. In this dissertation, I argue that Aristotle was not a particularist. While he does highlight the importance of moral perception and the complexity of moral cases, Aristotle's claims are consistent with the endorsement of an important role for action-guiding principles in deliberation.

The dissertation shows as much by taking a new methodological approach to the study of Aristotle's ethics. Scholars tend to focus on Aristotle's texts alone to resolve interpretive questions. I approach Aristotle's Nicomachean Ethics as if it were part of a genre of treatises on practical sciences. This methodological approach requires that we read Aristotle's ethics in a new way, since it encourages us to see trends that stand out only in relief against the backdrop of Aristotle's intellectual context. Specifically, I argue that studying the Hippocratic Corpus will help to resolve the interpretive debate about Aristotle's particularism. More generally, it will also help to resolve other outstanding interpretive problems concerning, for example, the technê analogy, perception of particulars and the status of universals in ethics.

Thus, in my dissertation I highlight the significant thematic overlap between Aristotle's account of deliberation and the Hippocratic Corpus's presentation of medical deliberation. While Hippocratic treatises express many of the same concerns and concepts that are found in textual evidence invoked by the particularists, they do not support a particularist interpretation of medical practice. Rather, in the Hippocratic Corpus, general theories and principles play an action-guiding role in medical deliberation, and they help us to see how an analogous case may be true of ethical deliberation on Aristotle's account.

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Many scholars view Aristotle as the source of the particularist position in modern ethics – the view that action-guiding principles cannot capture the complexity of moral cases. John McDowell, Martha Nussbaum, and other particularists have developed this aspect of Aristotle's ethics. Rather than aiming to provide an account of action-guiding principles – the view goes – moral philosophers should provide a theory that focuses on situational sensitivity, judgment and moral perception. In this dissertation, I argue that Aristotle was not a particularist. While he does highlight the importance of moral perception and the complexity of moral cases, Aristotle's claims are consistent with the endorsement of an important role for action-guiding principles in deliberation.

The dissertation shows as much by taking a new methodological approach to the study of Aristotle's ethics. Scholars tend to focus on Aristotle's texts alone to resolve interpretive questions. I approach Aristotle's *Nicomachean Ethics* as if it were part of a genre of treatises on practical sciences. This methodological approach requires that we read Aristotle's ethics in a new way, since it encourages us to see trends that stand out only in relief against the backdrop of Aristotle's intellectual context. Specifically, I argue

that studying the Hippocratic Corpus will help to resolve the interpretive debate about Aristotle's particularism. More generally, it will also help to resolve other outstanding interpretive problems concerning, for example, the *technê* analogy, perception of particulars and the status of universals in ethics.

Thus, in my dissertation I highlight the significant thematic overlap between Aristotle's account of deliberation and the Hippocratic Corpus's presentation of medical deliberation. While Hippocratic treatises express many of the same concerns and concepts that are found in textual evidence invoked by the particularists, they do not support a particularist interpretation of medical practice. Rather, in the Hippocratic Corpus, general theories and principles play an action-guiding role in medical deliberation, and they help us to see how an analogous case may be true of ethical deliberation on Aristotle's account.

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Chapter 1

Introduction

What the *Phronimos* Knows

1 What the *Phronimos* Knows

At the beginning of Book VI of the *Nicomachean Ethics,* Aristotle suggests that one must have a mark or goal (*skopos*) in light of which he makes decisions. In order to hit the mean (*meson*)(*EN* 1138b18-9), the virtuous person must have a standard (*horos*) or mark (*skopos*) with reference to which he aims (b22-3). "There is a mark to which the man who possesses reason looks, and heightens or relaxes his activity accordingly" (b22-4). Just as the doctor makes decisions about patients by consulting a standard – a conception of health - the virtuous person also makes decisions by consulting a standard.

Having established that one must have such a standard to make good decisions, Aristotle owns that it is unhelpful only to know as much. For if one knew only that he should have a standard, he would be "no clearer" about the manner in which he should act.

> But such a statement, though true, is by no means illuminating…. If a man had only this knowledge he would be none the wiser - e.g. we should not know what sort of medicines to apply to our body is some one were to say 'all those which the medical art prescribes, and which agree with the practice of one who possesses the art' (1138b26-29).[1]

[1]All translations are from the Barnes edition of Aristotle's works, unless otherwise noted. In Greek, the passage reads: ἔστι δὲ τὸ μὲν εἰπεῖν οὕτως ἀληθὲς μέν, οὐθὲν δὲ σαφές…. τοῦτο δὲ μόνον ἔχων ἄν τις οὐδὲν ἂν εἰδείη πλέον, οἷον ποῖα δεῖ προσφέρεσθαι πρὸς τὸ σῶμα, εἴ τις εἴπειεν ὅτι ὅσα ἡ ἰατρικὴ κελεύει καὶ ὡς ὁ ταύτην ἔχων.

If a doctor in training asked: 'what medicine should I administer to this patient?' it would be perverse for the expert doctor to reply: 'whatever the best medical judgment would prescribe.' Similarly, if a person trying to become virtuous were to ask: 'how should I act in this situation?' it would be entirely unhelpful for the moral expert to answer: 'whatever reason prescribes' or 'whatever a virtuous person (like me) would do.' Thus Aristotle owns that, in claming that the choiceworthy action is determined by reason (*orthos logos*)(1138b20; b25; b29), he has not said much by way of telling us how to act.

Since Aristotle acknowledges the unhelpfulness of these descriptions of good action at the beginning of Book VI, we have very good reason to suspect that he will provide an action-guiding account in later parts of Book VI. Indeed, earlier chapters of the *Ethics* provide even more reason to suspect that such an account will ultimately be offered. For Aristotle claims that the *Nicomachean Ethics* has been written in order to help us 'become good.'[2] The ethical inquiry "does not aim at theoretical knowledge…for we are inquiring not in order to know what excellence is, but in order to become good, since toherwise our inquiry would have been of no use" (1103b27-9).

Does Book VI fulfill our expectations of an action-guiding account? Yes, in some ways, for it explains the mechanism of decision-making and several important features of *phronêsis*. From Book VI, we learn that: the domain of practical knowledge consists of matters related to the good for man (1140b5); such matters are variable and can 'be otherwise' (1139a8, a14; 1140b2-3); because they can 'be otherwise,' the truths of

[2] The claim that the purpose of the *Nicomachean Ethics* is to make us 'become good': *EN* II.2, 1103b27-29; Cf. II.4, 1105b9-12, X.9, 1179a33–b4.

practical knowledge hold only 'usually' or 'for the most part' (*hôs epi to polu*); [3] nevertheless, practical knowledge admits of being true or false; practical truth is attained when there is agreement between reason (*orthos logos*) and desire (*orexis*)(1139a24-6); and the scope of practical knowledge is constrained by the fact that practical knowledge is in the service of action (*praxis*). Thus, the need for depth of explanation of the claims of practical knowledge is mitigated, at least in comparison with theoretical knowledge (*EN* 1102a17-3).

Book VI also helpfully characterizes the nature of practical knowledge in contradistinction to other forms of knowledge. Practical knowledge is not scientific (*epistêmê*) (VI.3) Scientific knowledge concerns matters that hold 'by necessity' (1140b1), and practical matters can 'be otherwise.' Nor is it craft-like (*technê*)(VI.4). Knowledge of the standard by which we deliberate, according to Aristotle, is "not the object of any art (*technê*)" (1140a29-30).

But none of this provides the action-guiding standard we expect to find in Book VI. Moreover, when we look elsewhere in the *Nicomachean Ethics* for an action-guiding standard, Aristotle's discussion of the matter is less than clear. The *phronimos* deliberates with reference to a conception of 'living well' (*to eu zên*)(1140a28).[4]

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[3] *Hôs epi to polu* sometimes means 'in general,' as in '*x* is, *in general,* the case: *EN* 1110a32, 1129a24; 1161a27; 1164b31; *EE* 1220b13; 1228b4; 1231a27; 1247b28. This use of *hôs epi to polu* seems to have synonyms like *epi polu*: *EN* 1121b16; 1126b8. However, Aristotle also uses *hôs epi to polu* as a term of art. *Hôs epi to polu* is contrasted with 'always' (*aei*) and chance (*tuche*): 1247a32, a35. It is also used to describe the characteristic form of knowledge in politics: *EN* 1094b21. Deliberation (*bouleusis*) is directed at what happens *hôs epi to polu*: 1112b9.

[4] It seems that the *phronimos* is the person who is capable of deliberating well with regard to (*pros*) living well as a whole: δοκεῖ δὴ φρονίμου εἶναι τὸ δύνασθαι καλῶς βουλεύσασθαι…ἀλλὰ ποῖα πρὸς τὸ εὖ ζῆν ὅλως. For a discussion of the relationship

However, all people – the *hoi polloi* and the 'gentlemen' alike – identify happiness (*eudaimonia*) with 'living well' (*eu zên*) and 'faring well' (*eu prattein*) (1095a19-20).[5] Thus, to claim that one makes decisions according to a conception of living well tells us nothing about how we *ought* to live. I.e. it does not provide an action-guiding standard.

Aristotle's account of the *kalon* is far more promising in this respect. The *phronimos* chooses for the sake of the 'admirable' or the 'noble' (*kalon,* EE 1230a27-35).[6] The *phronimos* is thus different from other agents in that he deliberates with reference to the *kalon*. We learn much about the *kalon* throughout the *Nicomachean Ethics.* For

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between *eudamonia* and *eu prattein,* see McDowell 1988. I agree with McDowell that it would be a mistake to think of *eu prattein* as promoting or serving as the means to *eudaimonia.* To act well (*eu prattein*) just is to realize *eudaimonia.* This point can be helpfully illustrated by a chess example. On the one hand, there is winning a chess game, which is the player's aim. On the other hand, one moves the pieces in order to promote his aim – namely winning. Of course, there is a considerable difference between winning the game (aim) and moving a piece (promoting the aim). McDowell correctly denies that Aristotle regards *eu prattein* as a way of promoting *eudaimonia.* Rather, each particular action is an instance of *eudaimonia* - hence, his emphasis on the equivalence between *eudaimonia* and *eu prattein* (90-1). This point is significant, as we shall see later, because McDowell rejects Irwin interpretation of the claim that x is *pros* y. For Irwin reads Aristotle's *pros* as 'promotes' – as in 'good action promotes happiness,' according to McDowell: "Irwin says that he is using "promotes" "simply to indicate the relation or relations Aristotle has in mind in saying that x is *pros* y, or that we do x *heneka* y" (McDowell 1988, 90).

[5] τὴν γὰρ εὐδαιμονίαν καὶ οἱ πολλοὶ καὶ οἱ χαρίεντες λέγουσιν, τὸ δ' εὖ ζῆν καὶ τὸ εὖ πράττειν ταὐτὸν ὑπολαμβάνουσι τῷ εὐδαιμονεῖν. This passage suggests that Aristotle identifies *eu prattein* as the goal of the virtuous and the non-virtuous alike. However, in *NE* VI, he associates *eu prattein* with the *phronimos* specifically. For Aristotle claims that the *telos* of *phronesis* is *eupraxia* (1140b6-7).

[6] That for the sake of which (*hou heneka*) we choose (*hairêsis*) is the *kalon*: 1230a27 -35. τοῦτο δὲ πῶς λέγομεν, εἴρηται πρότερον, ὅτι ἕνεκά τινος πάντα αἱρεῖσθαι ποιεῖ, καὶ τοῦτό ἐστι τὸ οὗ ἕνεκα, τὸ καλόν, δῆλον ὅτι καὶ ἡ ἀνδρεία ἀρετή τις οὖσα ἕνεκά τινος ποιήσει τὰ φοβερὰ ὑπομένειν, ὥστ' οὔτε δι' ἄγνοιαν ὀρθῶς γὰρ μᾶλλον ποιεῖ κρίνειν οὔτε δι' ἡδονήν, ἀλλ' ὅτι καλόν, ἐπεί, ἂν γε μὴ καλὸν ᾖ ἀλλὰ μανικόν, οὐχ ὑπομένει· αἰσχρὸν γάρ. Τηανκσ φορ τηε ξαρδ Ψου αρε σενδινγ ιτ εαρλψ, ανδ I ωον't οπεν ιτ υντιλ τηε αξτυαλ δαψ αρριϛεσ. I σηουλδ ηαϛε λεφτ Αυντοανν'σ ξαρδ ιν τηε ενϛελοπε τοο. See Michael Pakaluk – p.157. We perform brave (*andreia*) actions for the sake of (*hou heneka*) the *kalon* (1115b23-4);

example, in his account of the character virtues, Aristotle explains that the generous person will give gifts for the sake of the *kalon* (1120a23-6), that the magnanimous man will undertake large expenditures on behalf of the city for the sake of the *kalon* (1122b6-7), and that the courageous person aims for the *kalon* attained in battle rather than staying alive for its own sake (1117b14).[7] Thus, we see that virtuous action is motivated by a desire for the *kalon* and that to evaluate an action as 'admirable' is to judge it as worth undertaking.

But given that an account of the *kalon* provides us only with the most general description of admirable action in various domains of virtue, it seems that Aristotle never provides an action guiding standard that is specific enough to guide us directly in the making of good decisions. What one wants, it seems, is something like precise rules about conduct - for example, 'to be magnanimous, one must finance at least one trireme or major public event every three years.' Or: 'to be generous, one ought to give gifts of substantial value to good friends once a year.' To give action-guiding principles is to give us principles like these – namely, principles that give us specific guidance about action in specific situations.

Because Aristotle does not appear to provide these kinds of principles, commentators have speculated about the extent to which Aristotle ever meant to suggest that moral

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[7] The *kalon* is both a notion with which everyone would have been familiar, for it corresponds to the idea of the admirable, and it constitutes a reason for acting that is distinct from, say, the pleasurable or the advantageous. (For Aristotle, the objects of choice and flight are the noble (*kalon*), advantageous (*sumpheron*), and the pleasant (*hêdu*)(the *phronimos* chooses the noble, presumably)(1104b30-1; 1105a1). But the *kalon* is also up for dispute. For example, in the *Gorgias,* Callicles argues that unjust actions are only 'shameful' (*aischron*) by convention. In fact, Callicles claims, unjust actions are 'admirable' (*kalon*) if performed by powerful people (483bd). For a discussion of these themes, see Michael Pakaluk 2005, ch. 5.

deliberation looks like rule-governed decision procedures – on the model, say, of the practical syllogism. For example, they have supposed that, because Aristotle never gave any such standards, he meant to suggest that we do not deliberate according to any standards.[8] Others have suggested that Aristotle does offer *some* definitive action-guiding standards (e.g. do not commit adultery), and therefore that we may reasonably assume that he would be amenable to the idea of providing action-guiding standards about other matters in virtue as well. We can guess at these standards or recover them from Aristotle's discussion of the individual virtues in Books II through V of the *Nicomachean Ethics*.[9] Still others have claimed that the action-guiding standards are ensconced in the laws or *nomoi*. Since the notion of *nomos* encompasses both the notion of city laws as well as customs, it is wide enough to include norms about things like generosity.[10] These positions raise questions about the form that *phronêsis* takes. Does the *phronimos* grasp a set of principles by which he deliberates? Does he deliberate in light of a theory of the good life? Or does his conception of the good come in a form altogether unlike explicit knowledge or grasp of principles?

We can distinguish two basic kinds of positions about such issues. Some argue that the standard by which we deliberate takes the form of a set of action-guiding generalizations or principles that the agent uses in making choices. I refer to this account as 'generalism.' Others argue that the content of the standard should not be thought of as a codifiable set of principles or a theory at all. Rather, it should be represented as a

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[8] Broadie 1991.
[9] Irwin 2000.
[10] Striker 2006.

evaluative outlook through which an agent chooses actions in particular cases. I will refer to this account as 'particularism.'

The goal of this dissertation is to resist the particularist interpretation of Aristotle, according to which ethics does not provide us with action-guiding principles by which we deliberate. In this introduction, I will sketch the two positions just described in greater detail. Then I explain the methodological grounds on which I present a case against the particularist position. For I will make heavy use of the Hippocratic Corpus in responding to the particularist reading of Aristotle's ethics, and I must explain how the Corpus can be used to motivate a claim about Aristotle's ethics. Next, I will present a sketch of the argument in the following chapters. Finally, I present an account of the Hippocratic Corpus and the various reasons for thinking that Aristotle might have been familiar with it.

2 The Standard Views about *Phronêsis*

While it is clear that knowledge of the standard plays a role in deliberation, it is not clear how to characterize the nature of practical knowledge and its role in the deliberation of the *phronimos.* The proper interpretation of these matters is disputed among contemporary interpreters.

For the sake of argument, we can distinguish two extreme positions in the debate. On the one hand, there is the particularist view according to which there are no true moral principles.[11] For our purposes, this is the claim that there are no true *action-guiding*

[11] McKeever and Ridge refer to the position as "principle eliminativism" – the view that there are no true moral principles (McKeever and Ridge 2006, 15). The main proponent of the view is John McDowell (McDowell 1998b, 148-9). For example, McDowell writes: "is there any alternative to thinking of [ethical knowledge] as capable of being

principles.[12] That is, there are no principles whose explicit purpose is to guide our actions in specific situations. The particularist is often associated with sensibility theory, according to which ethical knowledge consists in the deliverances of a sensibility or a disposition to 'see' the good. For the sensibility theorist claims that the agent possesses an evaluative outlook through which he or she decides on actions in particular cases. For example, the particularist or sensibility theorist will claim that one does not decide how to show fear on the basis of a principle about danger, but on the basis of an evaluative outlook – one which probably cannot be captured or translated into a set of generalizations or action-guiding principles about danger.[13] On this view, ethical knowledge consists in responses to particulars, rather than judgments about particulars in light of concepts or universals.

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captured, at least in theory, by a set of principles for superimposing values on to a value-free reality? The upshot is that the search for an evaluative outlook one can endorse as rational becomes, virtually irresistibly, a search for such a set of principles: a search for a *theory* of beauty of goodness…. I have a hunch that such efforts are misguided…." While McDowell espouses principle eliminativism on some occasions, he also claims that principles have a heuristic function (McDowell 1996). Martha Nussbaum makes a similar claim, adding that principles can serve as heuristics. On her account in "Discernment of Perception," they are true to the extent that they offer a "summary of wise decisions" (Nussbaum 1990, 69). Compare Nussbaum 1986, 298 ff. Following Nussbaum, Irwin characterizes particularism along these lines. Rules only "summarize the particular perceptual judgments of virtuous agents" (Irwin 2000, 103). The view that rules are summaries of wise decisions is not the same as McDowell's principle eliminativism, for it allows that there are principles and that they are true, albeit in weak sense – only to the extent that they are associated with virtuous decisions in the past. For discussion, see McKeever and Ridge on "moral truth-makers" (McKeever and Ridge 2004, 12-3).

[12] McKeever and Ridge define "action-guiding principles" as principles that both provide explanatory truth conditions and are suitable for guiding action (McKeever and Ridge 2006, 6-7, 8-11).

[13] McDowell, 1998b, 149.

But, one might ask, Aristotle claims that *phronêsis* involves cognition of universals, as well as particulars. How does the sensibility theorist address this point? In order to account for the universal's role in *phronêsis,* the sensibility theorist glosses the universal as follows. First, the only relevant universal is the *kalon.* According to the sensibility theorist, the *kalon* is the only universal in ethics. Second, the universal does not take the form of a content-filled concept, as we tend to think of universals (e.g. 'human being'). For there is no independent and general and content-filled conception of the *kalon,* according to the sensibility theorist. It cannot be understood as a rule or a goal whose content can be grasped either by the intellect or independently from the various motivational states which instantiate the grasp. [14] Rather, the *kalon* is a contentless principle that becomes contentful only in particular situations. To say that someone has the grasp of the *kalon* is just to say that he or she sees the world in the way that a virtuous person would see the world.

The other extreme is the generalist view that ethical knowledge takes the form of universals. We can distinguish three versions of the generalist view, each distinguishable by its position on the form and role of universals in deliberation. According to the first view, universals take the form of rules. Deliberation is modeled in the practical

[14] There is a particularly clear expression of this point in McDowell 1996, 23. Sarah Broadie does *not* hold this view, although in other respects, she should be understood as subscribing to the sensibility theorist's reading of Aristotle. For Broadie, one deliberates not in light of any general conception of the good. Rather, one deliberates in light of particular aims, where we are to understand that there is *no* overriding notion of the way that these particular aims should be understood altogether – no *theory,* in other words (Broadie 1991, 234 ff.). For the response to Broadie's argument against the Grand-End view, see Kraut 1993.

syllogism, and these rules serve as the major premise of the practical syllogism.[15] According to the second view, universals take the form of theories of the *kalon,* where the theory is like a 'blueprint' that expresses a general, but determinate conception of the good life, replete with a mapping of the relative value or weight of an agent's various commitments.[16] Some commentators have claimed that there needs to be an explanation of the manner in which the practical reasoner moves from this very general conception of the good life to the selection of a specific rule to use in deliberation. Hence, one version of the 'blueprint' account intersperses a linking principle between the general conception of the good life and the selection of the specific rule.[17] On this account, deliberation is modeled on the practical syllogism, where the major premise takes the form of principle derived from the 'blueprint' conception of the good.

A third view assimilates the ethical universal to a scientific theory. Thus, according to C.D.C. Reeve, the universal in question is composed, in the first place, of matterless first principles – for example, 'we all aim at *eudaimonia*' and 'every *nous* chooses what is best for itself.'[18] These matterless principles explain the sense in which

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[15] See Allan 1995. For a critical discussion of Allan's view, see Cooper 1975*,* 47 ff.
[16] Initially,'blueprint' was the negative term used by McDowell to characterize theory-views about deliberation (McDowell 1996, 1998). However, the term continued to be used in the secondary literature to denote the view because it aptly illustrates the nature of the position. I follow that practice in using 'blueprint.'
[17] See Irwin 1998.

[18] Reeve 1995. Reeve argues that unconditional scientific knowledge (*episteme haplos*) of ethics is possible if one considers the fact that only matter makes unconditional scientific knowledge impossible. But there are immaterial principles in ethics – namely, *nous.* We have *nous* of ethical first principles – for example, *eudaimonia*, is the activity of *nous,* claims Reeve (22-9).

ethics can be a demonstrative science (*epistêmê haplos*). As matterless principles, they hold 'by necessity' and scientific knowledge is about what holds 'by necessity' (e.g. *An . Pr.* 1.13, 32b4-10). While practical knowledge is about matters that hold by necessity, it also concerns things that are 'for the most part' (*hôs epi to polu*)(e.g. *An Pr* I.13, 32b4-10). Facts about such matters take the form of contingent, non-universal truths. For example, 'wealth promotes happiness' is true, by Aristotle's lights, 'for the most part.' For it is true in *most* cases, but not all cases. According to Reeve, such claims are true in the same sense that the facts of physics are true. For example, it is true, by nature, that 'humans have five fingers' and that 'honey cures fever' (*Met. E.* 2, 1027a22-6). Thus, knowledge of ethical universals is like knowledge of the necessities that constitute natural laws in the physical and biological works. If the comparison between the natural sciences and politics holds, knowledge of ethical universals will be like knowledge of scientific universals – albeit those of a natural science.[19]

3 The Methodology of the Dissertation

Interpretive debates about the merits of the particularist reading of Aristotle's ethics have come to a standstill because the possible lines of interpretation have been developed.[20] Why revisit the issue?

I believe there are texts which are relevant to the interpretation, but which have been neglected – namely, texts from the Hippocratic Corpus. For they develop the very themes that we find associated with particularism in Aristotle's ethics: the complexity of

[19] Reeve 1995, 12-15.
[20] The last state of the art discussion of the issue was Irwin 2000.

cases and the need to deliberate about cases in the face of incomplete and imprecise information. I believe that studying the Hippocratic Corpus' treatment of these issues can shed light on the interpretive question about Aristotle.

In turning to the Corpus to settle a question about Aristotle, the dissertation develops a distinct kind of methodological approach to the study of Aristotle's ethics. It treats Aristotle's text as if it were an instance of a genre of a fifth and fourth-century Greek scientific writing - specifically, writing on the practical sciences such as medicine, rhetoric or politics. I mean 'genre' loosely here as anything that includes the motifs or *topoi* that tend to be associated with the practical sciences. Included in this genre are works like: Isocrates' *Against the Sophists,* the Hippocratic treatise *On Ancient Medicine,* and Aristotle's *Nicomachean Ethics.* All make mention of certain *topoi* which I take to be associated with the practical sciences. These include discussions of: method; the nature of inquiry and discovery; the difficulty of acquiring a *technê,* the inxactness of practical knowledge; the high levels of variety in the phenomena with which practical sciences are concerned (*diaphora*); notions of progress and the writer's conception of his place in the progress of the scientific program; the distinction between abstract and practical or useful knowledge; the distinction between deliberative and non-deliberative arts; errors in the application of the science; application of the doctrine of the mean with respect to particular cases, and phenomena that take place 'for the most part.' Some of these features are shared in common with all scientific texts, and not just texts on practical science – for example, a discussion of method. However, many of them are peculiar to discussions of practical science.

Rather than surveying all works on practical science of the period, the dissertation deals with medical texts primarily. I have focused on medical texts for three reasons. First, medicine is a practical science in much the way that politics is a practical science for Aristotle. Both are inexact sciences. By 'inexact science,' I mean a science that deals with (a) knowledge that consist of truths that hold 'for the most part,' (*hôs epi to polu*) and with (b) perception of particulars *qua* particulars (i.e. rather than as instantiations of universals). Second, Aristotle himself often compares political science to medicine, and this gives us good reason to think that medical treatises of the period might have something revealing to tell us about Aristotle's ethics.[21] Third, as I have already suggested, there are striking thematic similarities among Aristotle's *Nicomachean Ethics* and a group of texts in the Hippocratic Corpus -particularly those on regimen. In the dissertation, I focus on some of these features, including: the notion of exactness (*akribeia*) in science, the status of sciences in which claims hold 'for the most part' (*hôs epi to polu*) or 'mostly' (*polu*), and consequent modes of expressing principles in that science.

My methdology is to assess the merits of the particularist interpretation of deliberation in the light of the aforementioned parallels between Aristotle ethical treatises and treatises in the Hippocratic Corpus. I provide a comparative analysis of the *Nicomachean Ethics* and the Hippocratic Corpus, showing that there is significant thematic similarity overlap between Aristotle's account of deliberation and the Hippocratic Corpus's presentation of medical deliberation. I also show that, while

[21] Numerous scholars have provided a comparison between Aristotle's ethics and the Hippocratic Corpus with this point in mind. The best, I think, is Jaeger 1957.

treatises of the Hippocratic Corpus express many of the same concerns and concepts that are found in textual evidence invoked by the particularists, they do not support a particularist interpretation of medical practice. Rather, in the Hippocratic Corpus, general theories and principles play an action-guiding role in medical deliberation, and they help us to see how analogous case may be true of ethical deliberation on Aristotle's account.

I supply two arguments against particularist readings of Aristotle's account of deliberation. The first presents a counterexample to the particularist's inference from (1) inexactness in a science to (2) the no-principle view. That is, Aristotle claims that (1) politics is not an exact science. On the basis of this and related claims, particularists have inferred that Aristotle (2) denies a role to action-guiding principles in deliberation. The Hippocratic treatise *On Ancient Medicine* provides the counterexample. For, its author claims that (1) medicine is not exact. Nevertheless, the author endorses a role for action-guiding principles through which the doctor can deliberate about patient's cases.

The second argument also presents a counterexample to the particularist's inference from (1) inexactness in a science to (2) the no-principle view. On a particularist reading of Aristotle's doctrine of the mean, the standard (*horos*) in light of which an agent selects the mean is not constituted by principles. Rather, it is constituted by a contentless conception of the good that becomes determinate only in specific situations. Once again, *On Ancient Medicine* tells against such a reading. For it offers an account of the mean very much like Aristotle's – namely, Aristotle's mean "relative to

us" (*pros hêmas*). Nevertheless, *On Ancient Medicine* also endorses a role for principles in the selection of the mean.

4 The Outline of the Chapters

Chapters 1 and 2 present an overview of Aristotle's account of deliberation and the main interpretations of the account.

Chapter 1 shows that Aristotle does not give a full characterization of the standard by which the *phronimos* is said to deliberate. It discusses the two main interpretive accounts of deliberation (*bouleusis*) - namely, the particularist and generalist interpretations. It establishes that we can negotiate between these interpretations by exploring parallels between Aristotle's ethics and medical treatises of the Hippocratic Corpus. The chapter also provides an introduction to the texts of the Hippocratic Corpus and explains why one might be warranted in thinking that Aristotle was familiar with the concerns expressed in the Hippocratic Corpus.

Chapter 2 reprises much of the content of chapter 1, but in greater detail. It gives an overview of Aristotle's account of deliberation and a more detailed explanation of the generalist and particularist interpretations of deliberation. It also provides an account of the textual evidence for the particularist interpretation, including Aristotle's remarks about: 'exactness' (*akribeia*), the 'particular' (*kath hekasta*), perception, claims that hold 'for the most part' (*hôs epi to polu*), the 'outline' (*tupos*), and 'variation' (*diaphora*).

Chapters 3 and 4 take the textual evidence for the particularist interpretation of deliberation and re-position that evidence in the context of fifth and fourth century scientific thought.

Chapter 3 places the textual evidence for the particularist reading in the context of Aristotle's scientific thought about the features of exact and inexact sciences. It begins by offering a brief history of the term *akribeia* and a discussion of Plato's likely influence on Aristotle's understanding of *akribeia.* It offers an analysis of three criteria Aristotle uses to define the exact science in the *Posterior Analytics.* It also shows that politics was not an exact science for Aristotle, and it presents an analysis of the sense in which politics failed to be an exact science. The chapter concludes with a summary of the terminology Aristotle used to express the idea that a science was not exact – for example, the term 'outline' (*tupos*).

Chapter 4 draws important parallels between the Hippocratic Corpus and Aristotle's ethics. As indicated above, the existence of such parallels grounds the methodological approach I bring to the question about the merit of particularist readings of Aristotelian deliberation. The chapter presents the following parallels. (1) Just as Aristotelian politics is not exact (*akribeia*), medicine also lacks exactness (*akribeia/ atrekês*). Similarly, (2) just as claims in politics hold 'for the most part' (*hôs epi to polu*), claims in medicine also hold 'mostly' (*hôs epi to pleiston, polu, de polu*). Moreover, medical writers claim – as Aristotle claims about politics - that only schematic accounts of medicine can be given, a point they express by writing that medical claims hold 'in summary' (*en kephalaioi*). (3) Finally, medical writers also appeal to 'variation' (*diaphora*) to explain inexactness in medicine, just as Aristotle appeals to *diaphora* to explain inexactness in politics.

Chapter 5 presents a counterexample to the particularist's interpretive claim that (1) an attribution of inexactness to a science can be equated with (2) a no-principle view. The chapter begins by focusing on a range of skeptical objections made to the medical art in

the fifth and fourth century Greece, one of which was the lack of exactness (*akribeia*) in medicine. The chapter recalls the particularist claim that the inexact science is a science that does not endorse true action-guiding principles for deliberation. The chapter then examines the discussion of inexactness in the Hippocratic treatise *On Ancient Medicine.* The chapter shows that, while the author claims that medicine is inexact, he nevertheless endorses action-guiding principles for medical deliberation. I suggest that an analogous point might be made about Aristotle's account of deliberation. That is, Aristotle's claim that politics is inexact is consistent with the endorsement of action-guiding principles for the deliberating agent.

Chapter 6 also presents a counterexample to the particularist's equation between (1) an attribution of inexactness to a science and (2) a no-principle view. This chapter deals with that interpretive claim in the context of the doctrine of the mean. The chapter begins with a discussion of Aristotle's doctrine of the mean and presents the particularist's reading of the doctrine of the mean. For the particularist, the standard in light of which an agent selects the mean is not constituted by principles. The chapter argues against such a reading by showing that *On Ancient Medicine* presents a very similar account of the mean. Nevertheless, as the chapter shows, the standard according to which one selects the mean in *On Ancient Medicine* is constituted by action-guiding principles.

5 Texts

It is quite natural to ask about an exegetical approach that seeks to use one text to prove something about another text. One what grounds might such an approach be merited? As I hope to show in chapters 3 and 4 of the dissertation, there is significant

overlap between Aristotle's account of practical knowledge and the Hippocratic Corpus's account of medical deliberation. As a preliminary step in establishing as much, it is important to explain what the Hippocratic Corpus is and why Aristotle might have been familiar with it. Hence, the rest of the currect chapter presents a description of the Hippocratic Corpus, a summary of its contents, and an account of the various reasons for thinking that Aristotle might have been familiar with the Corpus and its concerns.

The rise of rational medicine in Greece can be divided into two periods, the first lasting from c. 420-370. The period can be distinguished by its departure from magico-religious science. Whereas previous forms of medicine resembled magic, the new medicine adopted the techniques and methodologies of exact sciences such as mathematics and geometry, which were devloping at the same time.[22] Establishing authorship of treatises during this period has proven difficult. Nevertheless, it is known that Hippocrates and his pupils at Cos were active during the period, and many of the core treatises of the Hippocratic Corpus were probably composed by members of the school.[23]

Whereas there is considerable difficulty tracing works in the Hippocratic Corpus to any particular author, identifying particular authors is possible during the second period of medical history, which comprises the remainder of the fourth century. During this period, it has been possible to follow the views of individual physicians, scientists and philosophers such as Diocles of Carystus, Mneistheus, and Praxagoras of Cos. These writers were regarded as working strictly within the field of medicine. Others writers of

[22] See Nutton 2004, 103-114, and Lloyd 1987, 1-49.
[23] Jouanna 1975.

the period, however, also work within the field of medicine, but their works have tended to be regarded not exclusively as medical in theme. Among these we might include: Plato (*Timaeus,* esp. 72d), Aristotle (*History of Animals,* VII, 602b12-605b21), and Theophrastus (*On Vertigo and Dizziness*).

We have three sources for the history of medicine in the first period: (1) the Hippocratic Corpus, (2) the Anonymus Londinesis and (3) doxography. The Hippocratic Corpus is a body of medical treatises in which various genres are represented. Some treatises are adressed to broad readership composed of both specialists and lay people; some are aimed at specialists; and some are notes meant to be used by the physician. Still others are manuals or handbooks meant for the use of other physicians. Most of the Hipppocratic Corpus is thought to have been composed in the time of Hippocrates (460-370); however, some are believed to have been composed after Aristotle's time.

The Hippocratic Corpus can be divided into three main groups of treatises. The first consists of (1) a core group of writings thought to have been composed by Hippocrates and his circle of disciples. These are often referred to as the *Coan* treatises, since they were composed by Hippocrates or members of his school, which was on the island of Cos, one of the traditional homes of the Asclepiad family (along with the island of Cnidus). The second is the (2) work of the Cnidian writers, a group of physicians and scientists thought to be affiliated with a school of medicine on Cnidus, the second traditional home of the Ascelpiad family. Finally, there are (3) the treatises that were written outside the Coan and Cnidian schools. This group can be divided into two sub-

groups. The first includes a number of treatises that were written outside the Coan and Cnidian circles, but under the influence of the Asclepiad teachings.[24]

The (1) core group of the Hippocratic Corpus, the Coan works, includes: *The Hippocratic Oath, Fleshes, Regimen, On Wounds in the Head, On Fratures, On Joints, In the Sugery, Mochlicon, Epidemics, Airs Waters and Places, The Sacred Disease, Aphorisms, Regimen in Acute Diseases,* and *Prognostic*. Some of these works are surgical treatises which may have been used as manuals for treatment of battle wounds. One group of these treatises – including works such as *On Wounds in the Head* and *On Fractures* – tends to be thorough and pay scrupulous attention to detail. A second group of surgical treatises – including *Mochlicon*, for example – is less precise and reads more like lecture notes or summaries of more detailed works.

Second, there is a group of works that were probably written by itinerant physicians. These include the famous *Epidemics,* which is a summary of individual case studies conducted in and around Thessaly. *Airs, Waters and Places* also reports the experience of a doctor traveling from city to city, recording the predominant medical conditions there, the seasons at which diseases in those regions occur, characteristics of the place, and other comparable features.

Finally, there are a number of treatises which are not classifiable. These include: *The Sacred Disease,* which gives a scientific treatment of epilepsy; *Prognostic,* which presents the famous Hippocratic facies, i.e. the facial expression indicating that death is at hand; *Regimen in Acute Diseases,* a treatise on regimen; the *Hippocratic Oath,* which records the oath taken by Hippocrates' students at Cos; *Aphorisms,* a collection of

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[24] I follow Jouanna's classificatory scheme. See Jouanna 2001.

unsystematic remarks about medicine – the treatise probably most read and commented upon by Medieval and Early Modern scholars of medicine; and last *Precepts,* a collection of remarks about prognosis, or the art of predicting the course of illness.

The second group of Hippocratic treatises are the Cnidian works.[25] These include: *Cnidian Sentences,* the preamble to *Regimen in Acute Diseases, Diseases,* and *Internal Affections.* The Cnidian treatises are different from Coan treatises in several respects. First, they place a greater emphasis on the importance of classification. Second, they place less emphasis on the recording of actual practice – the sort of observations that one sees in the Coan treatise *Epidemics,* for instance. On the other hand, the Cnidian treatises describe symptoms in great detail, so it cannot be said that, in terms of observation, the Cnidian treatises are inferior to those of the Coan school. Third, the Cnidian treatises favor treatment through purgatives and emetics over treatment through change in diet (regimen), perhaps prompting the observation in the Coan treatise *Regimen in Acute Diseases* that the Cnidian school does not place enough trust in treatment through change in diet. Finally, one does not see the remarks on method in the Cnidian treatises that one sees in some Coan treatises (e.g. *Regimen in Acute Diseases*).

The third group of Hippocratic treatises are the works that are neither Cnidian nor Coan. It is convenient to divide this group in terms of periods of composition. The first of these groups of treatises are probably composed on the intellectual periphery of the Coan and Cnidian schools. For they were composed in the period coinciding with the composition of the Coan and Cnidian groups of Hippocratic Corpus. In some cases, they are reacting to ideas promoted by the Coan or Cnidian schools. Take *On Ancient*

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[25] For discussion of the Cnidian school, see Lonie 1965 and Lonie 1978.

Medicine, for example. It was probably not composed in either the Coan or Cnidian schools, but the treatise is clearly written during the same time period (420-370). Moreover, it is written in response to ideas promoted by some treatises among the Coan works.

Among the third group of treatises, some are philosophical. By 'philosophical,' I mean that they inherit the Presocratic tradition of inquiry into the fundamental constituents of nature and their arrangement. In this group are: *Fleshes, Regimen, and Sevens*. *Regimen,* for example, presents a general Heraclitean view of the body and of nature. It is composed of the interaction between fire and water, extinguishing one another "in measures" (5).

However, other treatises among this group are *anti-philosophical*. They suggest that medicine is not a branch of philosophy and need not delve into the inquiry regarding nature. Instead, knowledge of the human body and of the effects of various substances on the body is sufficient for medical practice. One may say that this group of treatises is the intellectual parent to the Methodism that developed in third century ancient Greek medicine. Among this group of treatises, we may include: *On Ancient Medicine* and *The Nature of Man*. *On Ancient Medicine* will be discussed at length below. *Nature of Man,* thought to be written by Polybus, criticizes the view that the human body is composed of the elements fire, earth, air and water.

In the second sub-group of treatises in the Hippocratic Corpus, we find those that were composed outside of the fifth and fourth century, some of which are even thought to have been composed during the Middle Ages. These include: *The Heart, Precepts, Decorum, Physician, Affections, Anatomy, Crises, Dentition, Excision of the Foetus,*

Eight Month's Child, Generation, Critical Days, Diseases IV, Diseases of the Girls, Nature of Women, Prenotions of Cos, Superfoetation, Sight, Decree of the Athenians, Letters. Sources: Anonymous Londinensis[26]

Now that we have seen a description of the Hippocratic Corpus and its contents, we can ask what evidence there is to show that Aristotle was familiar with the Hippocratic Corpus.[27] Aristotle was born to a medical family. Both Aristotle's parents were descendants of Ascelpius. As a male descendant of Asclepius, Aristotle's father, Nicomachus of Stagira, was a member of the Asclepiad guild. Nicomachus served the Macedonian court as a physician and acted as both friend and doctor to King Amyntas of Macedon in the late fifth century.[28] There is some speculation that Nicomachus would have known about the *Epidemics,* a collection of individual patient case studies. For the first and third books of the *Epidemics* consist of studies from Thasos and Abdera, which are close to Nicomachus' home, Stagira (Aristotle's birthplace). The dates of composition for *Epidemics* I and III match Nicomachus' dates. Therefore, it is not unreasonable to think that Nicomachus might have been influenced by the author of these treatises.[29] Although Nicomachus died when Aristotle was young, Aristotle's interest in biology may have been kindled by his father's studies.

The Aristotelian Corpus does not contain any treatises written about medicine, specifically. However, a number of sources suggest that Aristotle wrote treatises on medicine. For example, Diogenes claims that Aristotle wrote the following

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[26] See W.H.S. Jones's edition of the Anonymous Londinensis (Cambridge, 1947).
[27] For further discussion of this point, see Nutton 2004, 118-120. See also Van der Eijk 2005, 80-3.
[28] Barnes 1995, See Diogenes Laertius 5.1 for more on Aristotle's father.
[29] Lloyd 1968, 3.

medical works: *On Health and Disease* (*Peri hugeias kai nosou*); *Dissections* (*Anatomai*); *Medical Issues* (*Iatrika*); *On the Failure to Generate Offspring* (*Huper tou mâ Gennan*); and *On Remedies* (*Peri Boâthâmatôn)*.[30]. Similarly, Galen suggests that Aristotle wrote a treatise called *A Summary of Medicine*.[31] Finally, there are references to works on medicine in Aristotle's own treatises, for example: *On Length and Shortness of Life* 1, 464b32; 480b22-30 and *Parts of Animals* II.7, 653a8. The line at 480b22-30 is thought to be a reference to a lost treatise, *De Sanitate et Morbo.*[32]

The Lyceum's doxographical project in medicine also suggests that Aristotle had an interest in medicine. The project was directed at the theoretical sciences, mathematics, physics and theology. Eudemus worked on the histories of mathematics and theology, while Theophrastus and Meno composed the work on the physics. Meno's share in the task was a medical doxography. The work is now lost, but a part of it –that which covers the views of Hippon, Philolaus and Plato – is preserved in the second part of the Anonymous Londiniensis papyrus.[33]. Medicine is included in the doxography of physics, despite the fact that it has a practical component. Some scholars surmise that the theoretical and practical parts of medicine could be distinguished, and only the theoretical part of medicine is included in the doxography of physics.[34] As Leonid Zhmud points out, Meno's medical doxography neglects entirely to discuss the application of

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[30] For discussion, see Van der Eijk 1999.
[31] See Galen's commentary, *On the Elements According to Hippocrates* (Hipp. De. Nat. hom. Com.) 1. 25-6.
[32] James Longrigg 1993, 149-50.
[33] For discussion, see Zhmud 2006, 125-9 and Van der Eijk 2005, 74. We know of Meno only that he was Aristotle's student. As Galen tells us, the *Iatrikâ Sunagogê* is ascribed to Aristotle; yet it is likely to have been written by his student Meno, and hence, it is called *Menoneia* (*In Hipp. De. Nat. hom Com.* I, 25-6)
[34] Zhmud 2006, 127-8.

generalizations about medicine. It therefore appears to treat medicine as a theoretical science, or to neglect that aspect of medicine which would have constituted an applied science. Similarly, Meno's work on medical doxography was confined to the study of the causes of diseases. Again, this seems to indicate that Meno treated medicine as a theoretical science, insofar as a theoretical science would have been one that engages in the study of causes. Meno would perhaps have been holding to the Academy's definition of a science as that which studies first causes.

Finally, Aristotle's interest in medicine is suggested by the significant thematic overlap between his work and the Hippocratic Corpus. Aristotle thought the investigation of biology was central to the theoretical study of nature. Indeed, his study of zoology alone constitutes roughly a fourth of the entire Aristotelian Corpus. The study of human anatomy forms an important part of the main zoological treatise *History of Animals* (*HA* I.7-17). Studies of human anatomy also form an important part of other treatises in the Corpus – for example, Aristotle's writings on the causes of longevity and death (*On Youth and Old Age,* 3; *PA* III.5); cooking and mixture (*Meteorology* IV); digestion (*On Sleep,* 3; *On Youth and Old Age*); respiration (*On Youth and Old Age,* 7-27; *On Breath*); the role of heat in the body (*On Youth and Old Age*; *Generation of Animals* II.3 ff); blood (*PA* II.2-6); the brain (*PA* II.7) the flesh (*PA* II.8); vessels (*PA* II.9; III.5) and the lungs (*PA* III.6)

Consider, too, Aristotle's treatment of specific topics in human health.[35] For example, there are several detailed discussions of women's bodies - topics in sex,

[35] For more discussion, see Van der Eijk 2005, 74. See also van der Eijk 1999, 493-4 and 1995, 452-3.

menstruation, pregnancy and birth (*History of Animals* VII and X; *Generation of Animals* I and II). *Generation of Animals* deals with the various features of children that can be enhanced in gestation (e.g. intelligence), as does the Hippocratic treatise *Regimen* (Book I). *On Divination in Sleep* and *On Dreams* respond to the tradition of using dreams to determine the best course of treatment for a patient, as does Hippocratic treatise *Regimen* (Book IV). Like several Hippocratic treatises, Aristotle associates longevity with moistness and fluidness, on the one hand, and dryness and fixedness with old age and death (*On the Length and Shortness of Life).*

Now that we have considered the sense in which Aristotle's interests were consistent with those of the Hippocratic Corpus, it is time to establish the most important grounds for comparing Aristotle's ethics with Hippocratic Corpus – namely, the extensive use of the medical analogy in the ethics.[36]

The medical analogy has a long history in Greek literature.[37] One dimension of the analogy is the idea that the moral expert is like a healthy person. Aristotle draws on this aspect of the analogy when he compares the healthy person's perception of sensory qualities and the ideal moral agent's perception of the morally salient features of a situation. The healthy person will perceive certain things as sweet , bitter, or hot, etc. A less healthy person will not perceive these things in the same way. For example, given a cold, he may be insensitive to the subtler flavors of his food. Similarly, the ideal moral

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[36] Medicine and ethics are frequently compared: *NE* 1104a9; 1094a8; 1096a33-4, 1097a10; 1097a17; 1097a19; 1102a21; 1104a9; 1112b4; 1138a31;1138b31; 1141a32, 1143a3; 1143b27; 1143b33; 1144a4; 1145a8; 1180b8; 1180b27; 1181b2; *EE* 1214b32, 1216b18; 1217b39; 1218b2; 1219a15; 1220b24; 1226a37; 1236a18-21; 1237b2; 1246b28; 1249b5, b12.

[37] For discussion, see Lloyd 2004*,* 183 ff. and Jaeger 1957, 54-66.

agent will take stock of a situation in a certain sort of way, seeing certain things as bad or good to a certain degree and in particular ways.

A second important dimension of the medical analogy is the idea that moral excellence is like physical excellence. Aristotle draws this point out with the well-worn theme that practice makes perfect. Just as one keeps his strength or health by exercising and eating well, one keeps his moral virtue by performing appropriate actions repeatedly (1104a27b3; cf. 1106a29 ff.).[38] Moral excellence and physical excellence are also similar in that we have control over neither contracting sickness and becoming healthy nor over becoming bad or virtuous (1114b30, 1115a1-2). Finally, moral excellence and physical excellence are alike in their use of the doctrine of the mean. Just as the doctor applies the doctrine of the mean to determine what sort of diet a patient should have, an agent applies the doctrine of the mean to determine how she should act (or rather, the statesman applies the doctrine of the mean to determine how to cultivate good citizens).[39]

The primary influence on Aristotle's use of the analogy is Plato's development of the analogy. Aristotle follows Plato's model in some central ways. Like Plato, he envisions statesmanship as an activity of *caring* for one's constituents (1258a27, 11097a11, 1287a25).[40] Aristotle also treats *phronêsis* - at least in its guise as statesmanship – as a form of *universal* knowledge (*NE* X.9, 1180b21) For entitlement to

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[38] It is worth mentioning in connection with this point that, to describe the state of the soul, Aristotle uses a medical term for the state of the body – *hexis.* For the use of the term in the Hippocratic Corpus, see, for example, *Regimen in Acute Diseases* 11.316.
[39] There is a disanalogy here, according to Lloyd, for Aristotle recognizes that there is a big difference between determining the amount of food that Milo ought to eat and determining the *moral* mean in any given situation. The latter is far more complex (Lloyd 1968, 75).
[40] The statesman or legislator's job is to care for the people in the city: *NE* 1180a25 ff.

act in the caring capacity is only earned through possession of a right account of the good.

But there are some important ways in which Aristotle departs from the Platonic model. For he regards knowledge of the good as relativized to a domain (*NE* I.6, 1096a17-29).[41] Just as the doctor does better to consider each patient separately, the *phronimos* does better to consider each situation in its particularity. That is, the *phronimos* must know not only what the general rules of ethics are; he must in addition know about all the particular features of any given situation (*NE* VI.7, 1141b15-20). Aristotelian *phronêsis* also involves assessment of particular situations, in virtue of which he regards *phronêsis* as involving lack of exactness (*akribeia*). Note that Plato had claimed that *phronêsis* was the least inexact of the sciences. The knowledge required of the *phronimos,* on Aristotle's reading, is said to be both universal *and* particular. Aristotle's point, rather, is that *phronêsis* also consists in knowledge of particulars, and as a result, *phronêsis* is not an exact science like mathematics.

Finally, Aristotle sees *phronêsis* as a decidedly practical activity, whereas Plato had only grudgingly allowed that the wise person would take part in politics.[42]. The analogy between medicine and ethics shows that ethics is a practical, rather than theoretical, kind of knowledge. Plato had used the analogy to make a point about the care

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[41] τὸ δ' ἀγαθὸν λέγεται καὶ ἐν τῷ τί ἐστι καὶ ἐν τῷ ποιῷ καὶ ἐν τῷ πρός τι, τὸ δὲ καθ' αὑτὸ καὶ ἡ οὐσία πρότερον τῇ φύσει τοῦ πρός τί παραφυάδι γὰρ τοῦτ' ἔοικε καὶ συμβεβηκότι τοῦ ὄντος· ὥστ' οὐκ ἂν εἴη κοινή τις ἐπὶ τούτοις ἰδέα. ἔτι δ' ἐπεὶ τἀγαθὸν ἰσαχῶς λέγεται τῷ ὄντι καὶ γὰρ ἐν τῷ τί λέγεται, οἷον ὁ θεὸς καὶ ὁ νοῦς, καὶ ἐν τῷ ποιῷ αἱ ἀρεταί, καὶ ἐν τῷ ποσῷ τὸ μέτριον, καὶ ἐν τῷ πρός τι τὸ χρήσιμον, καὶ ἐν χρόνῳ καιρός, καὶ ἐν τόπῳ δίαιτα καὶ ἕτερα τοιαῦτα, δῆλον ὡς οὐκ ἂν εἴη κοινόν τι καθόλου καὶ ἕν· οὐ γὰρ ἂν ἐλέγετ' ἐν πάσαις ταῖς κατηγορίαις, ἀλλ' ἐν μιᾷ μόνῃ.

[42] For a discussion of the different ways in which Aristotle and Plato use the medical analogy in ethics, see Jaeger 1957 and Lloyd 2003, 184 ff.

of the soul and the sense in which the soul – like the body – needs to be maintained in health.[43] Aristotle, on the other hand, uses the analogy to make clear the *practical* nature of ethical knowledge. Just as the doctor must know about particular patients and be practically efficacious in actual situations, the *politikos* must know about particular situations and how to be practically efficacious in them. For example, as Aristotle points out in *NE* I.4, the *politikos* does not need to know about the *good* in general. Rather he needs to know about the good in specific contexts. Aristotle construes the good as a kind of opportunity (*kairos*) or measure (*metron*). Each science of opportunity deals with a different sort of opportunity. In medicine, for example, one deals with opportunity with respect to food. Aristotle envisions medicine as one of several sciences of opportunity (*kairon*) or moderation (*metrion*) (*EE* I.8 1217b37; *NE* 1096a32), and in particular, as the one that studies food (1217b39) Thus, the *politikos* needs to know about the opportune (*kairos*) and expedient (*sumpheron*) in particular situations that relate to the *human* good, just as the doctor, for example, needs to know about the opportune moment with regard to health and particular patients (*EE* I.8, 1217b35-41; cf. *NE* I.6, 1096a32, 1096b33).

Conclusion

In this chapter of the dissertation, I introduced my project and its methodological assumptions. I attempted to show that that Aristotle does not give a full characterization of the standard by which the *phronimos* is said to deliberate, and I discussed the two main interpretive accounts of deliberation (*bouleusis*) - the particularist and generalist

[43] See, for example: *Gorgias*. 501ab; *Phaedrus* 270cd; *Laws* 857cd. In *Phaedrus,* Plato develops the famous image of the philosopher dividing up the soul at its joints, just as the medical doctor divides the body up at its joints. The comparison between the health of the body and soul is a commonplace. See, for example, Isocrates, *Antidosis,* 183.

interpretations. I suggested that we can assess the merit of the particularist reading by exploring parallels between Aristotle's ethics and treatises from the Hippocratic Corpus. I provided some reasons for thinking that Aristotle was familiar with the concerns expressed in the Hippocratic Corpus.

The next chapter deals with many of the same topics, but in a more detailed fashion. It explains Aristotle's account of deliberation and the generalist and particularist interpretations of deliberation. It provides an account of the textual evidence for the particularist interpretation, including Aristotle's remarks about 'exactness' (*akribeia*), the 'particular' (*kath hekasta*), perception, claims that hold 'for the most part' (*hôs epi to polu*), the 'outline' (*tupos*) and 'variation' (*diaphora*). This familiarity with Aristotle's position on deliberation and the particularist reading of deliberation will help us in later chapters to see why the medical corpus tells against the particularist reading of Aristotelian deliberation.

Chapter 2

Particularist Readings and their Alternatives

The first step towards recognizing that Aristotle is not a particularist is to examine his account of deliberation. A conception of the *kalon* or living well (*eu prattein*) guides the virtuous person's deliberation. Scholars have interpreted the content of this conception in multiple ways. The most important difference in these interpretations is that between (a) generalists, according to whom the content of the conception is a body of action guiding principles, and (b) particularists, according to whom the conception is contentless. With this account of the particularist reading of Aristotelian deliberaiton in hand, we will be well placed to see in the next chapters that the textual evidence for the particularist reading has been misinterpreted.

The chapter begins with an introduction to Aristotle's account of deliberation, or *bouleusis*. I explain that deliberation is informed by a conception of good action (*eu prattein*) or the noble (*kalon*). In the second part of the chapter, I consider in greater detail some of the accounts of practical knowledge sketched in chapter 1. These include (1) the generalist views that the universals guiding deliberation are (a) rules or (b) blueprints from which rules are derived. I also discuss (2) the particularist position that the conception of the good is a contentless principle that takes definite shape in only particular decision-making contexts. I finish the second section of the chapter with a discussion of the textual grounds for ascribing the particularist position to Aristotle.

1 Aristotle's Account of Deliberation

Deliberation is *the* characteristic form of practical wisdom (*NE* VI. 1140a31).[44] It is a form of teleological reasoning, or reasoning in light of a goal (*telos*). In particular, it is reasoning about the best way to achieve a goal. For example, one might reason in light of his desire to have a vacation to Europe in the summer as follows: 'if I save up money by avoiding extravagant purchases, and if I work like a demon in the month of May, I can afford to take the summer vacation to Europe.' While this is a decent plan, it is not the best one. An even better plan is the following: 'if I save up money by avoiding extravagant purchases, and if work at a steady, hard pace for a few months in the spring, I can afford to take the summer trip.' Excellent deliberation requires not merely that one figure out how to execute his plans. Rather, it requires that one determine how *best* to execute his plans.

There are many kinds of goals in light of which one might make plans, and thus there are a wide range of cases in which one engages in teleological reasoning. Aristotle sometimes clarifies the teleological aspect of deliberation by comparing it with technical reasoning. When one is wearing his doctor's cap, he reasons in light of health. That is, he thinks about the best ways to make his patients healthy. Similarly, when one is wearing his rhetor's cap, he reasons in light of persuasion, for he thinks about the best ways to persuade an audience. Deliberation works in the same way. When one is

[44] ὅλως ἂν εἴη φρόνιμος ὁ βουλευτικός.

wearing the *phronimos*'s cap, he reasons in light of a conception of the good life or good action.[45]

Neither deliberation nor technical reasoning concern what is 'about the goal' (*peri tôn telôn*). Rather, the end having been established (1112b15), one reasons about things that are *towards* the goal (1112b12). For example, the doctor does not consider 'if he will heal his patients'(b13). If the doctor were considering whether he should cure a patient or cold-bloodedly kill the patient, he would no longer be thinking in his capacity as a doctor. Rather, he would be thinking in his capacity as a villain. The doctor reasons only about the 'how" and the methods or the 'through what' of healing. Again, the case is the same with deliberation. For one does not deliberate about whether he will pursue the *kalon*. Rather, he deliberates about how and through what methods he will pursue it.

While there is this similarity between technical reasoning and deliberation, there are also key differences between the two. First, deliberation does not concern any particular subject matter, but matters in general (*holôs*)(1141a28).[46] Aristotle claims that the person of practical wisdom calculates "with a view to some good end which is one of those that are not the object of any art" (VI.5, 1140a29-30).[47] By contrast, the technical goal is specific; it concerns a part of life (*kata meros*)(1140a27). There are two ways we can take the disanalogy on offer. (I do not promise to settle the matter here.) On the other hand, the disanalogy may imply that health and happiness are aims of different scope, but that they are not different in kind. From the perspective of the doctor *qua*

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[45] Aristotle refers to this conception alternatively as: *eudaimonia, eu prattein,* the *kalon, eupraxia,* or *eu zên* (*NE* II.3, 1105a1; VI.5, 11140a28; 1140b6-9; *EE* 1230a27-35).
[46] ποῖα πρὸς τὸ εὖ ζῆν ὅλως
[47] πρὸς τέλος τι σπουδαῖον εὖ λογίσωνται, ὧν μή ἐστι τέχνη

doctor, health is a final end; and similarly, from the perspective of the doctor *qua phronimos,* the *kalon* is a final end. We might think that, from each perspective, there is no difference in kind here, but merely of content and scope. However, Aristotle suggests that the perspective from *phronêsis* is the important one (*NE* VI.13). If the *phronimos*'s perspective is the important one, then we see that there is a difference in kind between health and the *kalon* as aims. For one pursues *kalon* with no further aim in mind, but one pursues health with a further aim – namely, the *kalon* (or *eu prattein*). If this is so, then health and happiness may be different sorts of aims; one is absolutely final in the way that the other is not.[48]

Second, deliberation is distinct from all other forms of teleological reasoning in that its goal is the *kalon*. It is important to clarify the sense in which one can reason in light of such a goal. In order for a process of reasoning to qualify as deliberation, it must link up with a conception of goodness at some point. That is, a general conception of the good must enter in one's deliberation at some point such that the conception guides the

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[48] For a discussion of these and related points, see Broadie 1991, 190-8. Broadie argues that Aristotle's discussion of the craft analogy is unclear. She raises three problems for the craft analogy. First, the end of craft is determined, whereas the end of practical wisdom is not, by definition; but what should we make of this disanalogy? Second, what is the difference between ends sought in good practical deliberation and ends sought in bad practical deliberation? Third, there seems to be a difference between the craftman's deliberation about his end, and the craftsman's end. What is it? Broadie claims that the ambiguous discussion of the craft analogy leaves us with two possible views of practical wisdom. On the one hand, practical wisdom resembles medicine in acting and deliberating on the basis of a specific picture of the end. This ethical picture figures in the premises of all the wise man's deliberations about particular problems. On the other hand, it may be the case that the technical picture is dispensable, since it is only a means to health. "On this model, practical wisdom is like the ability to balance," according to Broadie (198). As Aristotle says, in practical matters, we don't need full specification of the grounds on which we act. Only minimal clarity is required.

decision one makes. If this is true, an objection might go, there seem to be very few cases in which we deliberate. For it seems that one seldom engages in a process of reasoning that brings one back to thoughts of one's overall conception of the good. This is an interesting point, for it raises a question about the range of cases in which we make decisions in light of our conception of the good life. Perhaps we reason in light of an idea of a conception of the good seldomly – e.g. only when facing momentous decisions.

However, it is possible to push back on this thought by considering the following. There is an *implicit* conception of the good at the back of much of reasoning, and this implicit conception of happiness might be invoked if the agent were pressed about her reasons for making certain choices. For example, suppose that Sally decided to attend a friend's wedding, despite the fact that the cost of attending would be very expensive. 'Why did you decide to attend the wedding, Sally?' one might ask. Sally answers: 'because I care about my friend.' This is likely as far as she has pushed her own thought process, being satisfied that her care for her friend is a good enough reason to attend the wedding. But she might be pushed for further reasons. Why do you care about your friend? She answers: because we have a strong friendship. But why do you care about friendship? She answers: because friendship is part of a good life. There, according to Aristotle, the train of questions should end, for it does not make sense to ask anyone why she should care about good life. After all, we all desire to be happy (*NE* I.4, 1094a20).

Lest happiness appear to be an abstruse goal, it is important to see that, for Aristotle, we are not after just any old kind of happiness. That is, we are not pursuing the happiness of antelopes, squirrels or bees. Rather, the happiness in question is *human* happiness. Just as there is some distinct notion of health for each kind of animal - for the

bumble bee, a solitary life, and for the honey bee, a communal life (*HA* 623b6-12) – so, too, is there some distinct form of happiness for human beings. Indeed, there is a distinct good for all kinds of animals (*NE* 1141a26—34). Deliberation will concern only that distinctly human happiness. We are able to get purchase on the conception of the good life in question by considering the function of the animal (*NE* I.7). In the case of human beings, for example, our function is wrapped up in our identity as rational and political animals. The result is that the good life for humans will involve the cultivation of the intellect and promoting of good political communities – and, of course, the realization of the *kalon* or *eupraxia.* This sort of aim is not appropriate for living things that do not share the same set of of capacities.

We have seen that the agent deliberates in light of a conception of the *kalon* or *eu prattein.* This deliberation issues in choice (*prohairesis*) of an action in specific circumstances. For Aristotle, it is not enough that one perform the correct action. Rather, one must perform that action with the right intention, for actions are only called just and temperate if they are performed as (*hôs*) the just or temperate person would perform them (*NE* II. 5, 1105b6-8; cf. 1105a30-1). *Prohairesis* is a reasoned intention in the sense that it is a decision informed by the process of deliberation – hence, the reasoning. The *prohairesis* is a voluntarily-made choice, and Aristotle claims that it is the best indicator of one's character (*NE* III.3, 1111b5-6).

Prohairesis has a complicated structure. First, it consists of an evaluation of particulars (1142a21-3, 1143a28-31). Things are evaluated by the extent to which and the manner in which they realize the *kalon*. The evaluation takes the form, roughly, of

the sentence that '*x* is the good thing to do, all things considered' (where the 'all things considered' stands for the process of deliberation). We can think of the evaluation as a way that a particular scene looks to an agent phenomenologically or as a characterization of situations, as judged by agents. I mean to imply nothing here as to whether the evaluation takes the form of a perceptual judgment or a propositional judgment. For our purposes, it matters only that the judgment concerns *particulars.*

Thus Aristotle claims that deliberation concerns both universals and particulars (1141b15-6; 1180b20 ff;). For example, deliberation concerns both the fact that white meat is better for the health (the universal) and also the fact that this particular morsel of food is white meat (the particular)(1141b16-21). This is what Aristotle has in mind when he claims that the best practitioners are those that have experience, which is knowledge of particulars, and knowledge (i.e. of universals). Just as the medical doctor should have both knowledge of particular patients and of universals about human nature (*NE* X.9; I.5), so too must the person of practical wisdom have knowledge of both his own case and of universals.

Consider a more developed example of judging particulars. In George Eliot's *Middlemarch,* the main character is a young, idealistic woman, Dorothea Brooke, who has made a bad marriage to a much older man, the Reverend Causabon. Casaubon is working on a tome about the relationship between religion and mythology (*The Key to All Mythologies*), and this book is his life's work. Dorothea has been acting as a secretary to him in this work, but has increasingly little regard for the project and for her husband. As her interest in both declines, Causabon discovers that he is dying, and he asks her to give a solemn promise to continue the project once he has passed away. Dorothea must decide

whether to make the promise. Ultimately, after a period of difficult deliberation, she decides that she will promise to complete the book.[49]

Dorothea's decision is based, in part, on her evaluation of particulars. For example, much of Dorothea's deliberations in this period are marked by painful specific memories. She recalls with bitterness, for example, that after Causabon was informed by the doctor of his terminal illness, he coldly informed her of as much as they walked in the garden and would not take her arm. The specific gesture of not taking her arm seems to Dorothea to encapsulate what has been wrong all along with the marriage: Causabon has never treated her as being a part of his life.[50] I mention this because of the important role that specific pictures and images play in deliberation. In order to understand someone's reaction to a situation and the sense in which the reaction makes sense, we may have to call to mind the specific images that provoke a person or make him or her regard a situation as being of a certain kind.

There are other evaluations of particulars that have bearing on Dorothea's choice. For instance, Dorothea initially thinks of her future, which she imagines unhappily as a life toiling in her library on a project in which she finds little worth. But other evaluations of particulars push her in the opposite direction. Dorothea pictures Causabon's past – the years worth of solitary and determined labor on his project.[51] Her vivid imagining of Causabon both laboring with futility on a project bound to failure and

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[49] Eliot 1981, 463.
[50] Eliot 1981, 413.
[51] "…Dorothea's pity turned from her own future to her husband's past – nay, to his present hard struggle with a lot which had grown out of that past: the lonely labour, the ambition breathing hardly under the pressure of self-distrust; the goal receding, and the heavier limbs; and now at last the sword visibly trembling above him!" (Eliot 1981, 465).

his realizing as much in the period of his impending death inspires her with a sense of pity. She feels she cannot step on a "bruised heart." Ultimately, Dorothea decides to take on the project because she feels herself to be a compassionate person - the sort of person who acts as a vehicle for the happiness and fulfilment of others.[52] These are the sorts of evaluations of particular features of one's situation that have bearing on the deliberative process and which explain the choice that an agent ultimately makes.[53]

Note that the way the scene appears to Dorothea is closely related to her character. She is an compassionate, willful and idealistic person, and *as a result,* she evaluates particulars in a certain way. A different person, for example, might have thought that promises were easily broken, and thus would not have been as wracked by worry as Dorothea in deciding whether to give her promise. Hence, Aristotle claims that one's character has bearing on the way he or she reads situations (*NE* 1113a30-3; cf. *EE* 1229a21-6; 1230a31).[54]

Note, too, that the evaluation prompts the decision. In part, deliberation is the difficult process of arriving at an assessment of various elements of a decision-making context. One must decide, for example: how important is compassion? How important is the pain I will endure? How important is the pain the others will endure? There is a kind of balancing act between a proto-decision and one's evaluation of one's situation. For example, at the beginning of the deliberative process, the prospect of years spent laboring

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[52] "Neither law nor the world's opinion compelled her to this – only her husband's nature and her own compassion…." (Eliot 1981, 467).

[53] According to the particularist, the evaluation of particulars *fully* explains the decision. According to the generalist, by contrast, an agent's independent conception of the good must also be invoked to explain the agent's decision.

[54] For discussion, see Fortenbaugh 1964. Fortenbaugh argues that, for Aristotle, moral virtue helps the agent judge (*krinein*) the morally salient particulars.

on the failed book project appears entirely unappealing to Dorothea. However, upon reflection, this prospect comes to seem less important than other commitments. We might read Dorothea as having re-evaluated the particulars of the situation so as to bring her evaluations more closely in line with one's projected choices: e.g. 'the work on the book project will not be *so* bad.' Through reiterations of this process, one might bring evaluation fully in line with the choice.[55]

In its directedness towards particulars, *prohairesis* is not merely evaluative. It is motivational as well. To see this, it is helpful to constrast Aristotle's position with a Humean account of motivation. According to a basic Humean view of moral motivation, it is possible to make the evaluation that '*x* is the appropriate thing to do' or that '*x* is good' without thereby being motivated to do *x.* For example, one can recognize that there is a reason for doing something - one ought to keep promises to the people to whom one has made promises - without having the corresponding desire (I *want* to keep the promise). The lack of appropriate desires is to be explained by a failure of habituation or moral cultivation.

On Aristotle's account of *prohairesis,* there can be no breakdown between the evaluation that '*x* is the good thing to do, all things considered,' and the desire to do *x.* Thus, we cannot ask of a person who has made a *prohairesis* to do *x* –yes, but will he try to do *x*? He will most certainly carry out his plan, provided that the agent is not akratic

[55] In some cases, we can imagine that people are not really free to choose, such that they are forced to bring their evaluations into line with the 'choice,' since no other option is fully available to them. This is arguably what we do when we rationalize.

and provided that nothing happens to intefere with her plans. We can see an example of such a case in Dorothea's situation. She fully intends to make the promise to complete Causabon's book. But in an implausible instance of good timing for Dorothea, Causabon passes away *just before* she is about to utter her promise.

Prohairesis has the interesting property of being both an evaluative state – i.e. knowledge – and an impulse. It is an evaluative state in the sense we have just seen. But it is an impulse or motivational state in distinct sense. There are other kinds of impulse: *epithumia* and *thumos* among them. *Prohairesis* differs from *epithumia* and *thumos* (*NE* III.2, 1111b16-8) in that it requires rational capacities. Thus, the animals also have *epithumia* and *thumos,* but they do not have *prohairesis* (1111b12-3).

This point brings us to the second aspect of *proharesis* – namely, the fact that *prohairesis* is carried out in a context of considerations or facts that one might take into account as one deliberates. They might be thought of as constituting the realm of relevant facts in light of which one deliberates. The context of considerations includes human affairs (1112a28; 1141b8-9). As before, we rule out matters such as: bee affairs, and elephant affairs and other such matters, for these do not concern us as human beings. While deliberation concerns *human* affairs, it does not concern all human affairs. For we deliberate about only those human affairs which are directly relevant to to our own cases. For example, the Spartan does not deliberate about the Scythian constitution (1112a28-9). He may entertain some speculation about the Scythian constitution, but this speculation is not the same as deliberation. On the other hand, the Spartan might deliberate about his own constitution, provided that he is in the position to have some effect on its

amendments. If he were to speculate about how it could be improved without being in the position to change it (e.g. through voting), he would not be deliberating about the constitution. A Spartan helot, then, does not deliberate about Spartan affairs, though he is a Spartan. For he is not a citizen and thus not in the position to endorse rules of self-government.

Part of the reason for the restriction of deliberation to relevant matters is that deliberation is *practical.* Recall that deliberation concerns what is up to us and doable (*eph' hemin*) (1112a31; cf. 1141b10-11). One cannot deliberate about something that he has no power to effect or which is unrelated to him. The deeper point may be that, when we think about matters the outcome of which bear on us directly – not just in *any* way, but insofar as our goodness as people is concerned - we bring to bear on our thoughts a certain kind of urgency and need to interfuse our values with our actions. This quality is probably lost from the distant and casual theoretical reflection that, as a Spartan, one might have about the various pros and cons of the Scythian constitution. After all, something is really at stake in deliberation – one's own good or advantage.

The idea that deliberation concerns knowledge that is relevant to us brings up a second point. For knowledge of our own *particular* cases might be thought to be the most relevant to us. Aristotle claims that *phronimos* is someone who is good at determining what good and expedient with regard to human affairs, but more particularly with regard to himself (*ta heautô agatha kai sumpheronta*) (1141b30; cf. 1140a26-7).[56] We might reasonably conclude from this claim that deliberation concerns thoughts about

[56] φρόνησις μάλιστ' εἶναι ἡ περὶ αὐτὸν καὶ ἕνα

one's own welfare, specifically.[57] But even if this were an apt interpretation, it is a far cry from the idea that the *phronimos* pursues his own self-interest and can be characterized as someone who is very good at determining how best to serve naked self-interest. As we saw in chapter 1, the *phronimos'* deliberation is guided by a notion of the 'admirable' (*kalon*). The *phronimos* is motivated by a desire to realize the *kalon.* Thus, we can think of the *kalon* as regulating the one's deliberation about his own affairs. While it may be true that the *phronimos* takes into consideration his own affairs, in particular, it is also the case that his thoughts about promoting his ends are governed by a a desire to realize the *kalon.*

Because deliberation is directed at matters that are relevant to particulars – such as the features of our specific lives - it is deemed as taking place 'usually' or 'for the most part' (*hos epi to polu*)(1112b8-9).[58] The idea is that whatever patterns human life might exhibit, they are subject to exception and a great deal of 'variation' (*diaphora*). For example, it is 'usually' (*hos epi to polu*) the case that wealth contributes to *eudaimonia* (*NE* I.4, 1094b18-9). However, it is sometimes the case that wealth does not promote *eudaimonia.* Imagine, for example, the case in which wealth made a person unusually jealous of his money so that, instead of making him better off, it makes him only more miserly than he would have been otherwise.

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[57] For the distinction about *phronesis* as it applies to the city and as it applies to one's own private life, see Isocrates *To Nicocles.* For a comparable distinction, see *NE* VI.8, in which Aristotle claims that there is political wisdom about the state, or statesmanship, and practical wisdom about one's own affairs and that these are the same *hexis,* but different in 'being.'

[58] τὸ βουλεύεσθαι δὲ ἐν τοῖς ὡς ἐπὶ το πολύ, ἀδήλοις δὲ πῶς ἀποβήσεται, καὶ ἐν οἷς ἀδιόριστον

Hos epi to polu might refer to one of two things. On the one hand, it might refer to statistical frequency, i.e. the frequency with which certain events take place.[59] For example, 'the nine o'clock train to New York is on time, *for the most part.*' In such cases, we mean that, nine times out of ten, the nine o'clock train happens to be on time. (Suppose that the railroad engineer prided himself on getting the train to the station promptly at 9:00 am.)

Hos epi to polu might also be a reference to the frequency with which natural phenomena take place in accordance with nature (*kata phusin*).[60] For it is not always the case that natural phenomena happen as they ought. That is, it is *usually* the case that natural norms hold, but not always. By 'natural norms,' I have in mind the idea that nature exhibits certain patterns. For example, humans typically have five fingers; mares reproduce; and bats echolocate. It is almost always the case that nature successfully delivers five-fingered humans, reproducing mares and echolocating bats. However, sometimes nature delivers "monstrosities" (*terata*).[61] For example, human children are sometimes born with six fingers on each hand, rather than five; mares might be barren;

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[59] See Chisholm 1966 for this view.

[60] For the association between *hos epi to polu* and *kata phusin,* see GA 777a17-21; *PA* 663b28; *Meta.* 1027a8-28. For discussion of this interpretation of *hos epi to polu*, see Judson 1991, Winter 1997, and Irwin 2000.

[61] Aristotle has very interesting things to say about the various types of cases in which the natural has has not been realized. On the one hand, there is the 'incomplete' animal (*ateles*) that has yet to mature – e.g. the child is an 'incomplete' human being in this sense. On the other hand, the 'limited' animals (*peiromata*) will never mature. They possess some defect or deformity that prevents them from attaining the correct form. There are two main types of *peiromata.* There the *terata,* or 'monstrosities.' For example, a mare that cannot reproduce congenitally is a *peiromata* and *para phusin* in this sense (GA IV.4, 770b9). But even normal and reoccuring features of nature can be *peiromata.* For example, females are *peiromata* in this sense because females are undeveloped males (*GA* II.3 737a27). See Hicks for these helpful distinctions as they apply to the *De Anima*'s discussion of incomplete animals (415a27, 425a10, 432b22-4).

and the bat's sensory machinery might on occasion be impaired. These must be congenital problems to count as indications that natural phenomena hold '*hos epi to polu,'* since the bat's failure to echolocate because of an injury or the mare's forced sterilization does not show a failure of *nature,* per se. Rather, it shows that some other factor has compromised the animal's functioning.

On this view of *hos epi to polu,* it may in fact be the case that, statistically speaking, claims that hold *hos epi to polu* are stastistical norms. However, for Aristotle, something stronger is meant by *hos epi to polu,* as the association between *hos epi to polu* and *kata phusin* shows. For claims that hold 'for the most part' are claims that are almost always true just because nature makes it so. In this regard, the phenomena that are caused by nature should be contrasted with those that happen by luck (*tuche*), or by skill (*technê*), or because of the failure of matter (*hule*), as is the case with Aristotle's monstrosities (*terata*).

It is important to see that biological norms are teleological, for Aristotle – i.e. they tend to promote certain ends. For example, self-preservation is one of the goals of the human being, and the design of human fingers comes in very handy in this regard. For the various configurations that the fingers can adopt make the human being adept at tool use and weaponry, which in turn promotes self-preservation (687b2-22). Similarly, the perpetuation of one's species is the aim of all animals, according to Aristotle (*Physics* VIII). Reproductive abilities promote the perpetuation of the species. Thus, we say, these norms are norms because they tend to promote the goals of the species.

But why does any of this make ethical norms like biological norms? The teleological dimension of biological norms helps us to see why ethical norms are anything like biological norms. Ethical norms are norms in virtue of the fact that they tend to promote human goals. Thus, Aristotle claims wealth is *usually* condusive to happiness (*NE* 1094b18-9). For most of the time, being wealthy helps with happiness; yet, sometimes it compromises happiness.[62] Similarly, as Aristotle points out in the *Eudemian Ethics,* the external goods that men strive for are naturally good (*agatha phusei*, 1248b28). However, they are not good for everyone, since they are of limited or incorrect use for the intemperate and unjust. They are good or bad according to one's character (*dia tas hexeis*)(1248b27-30).[63] The point is that, just as five fingers promote self-preservation for humans, wealth and other external goods tend to promote happiness.

The final part of the structure of *prohairesis* is the end or standard (*telos, skopos, horos*) in light of which we deliberate. The *telos* is a goal in light of which one deliberates.[64] There is a particularly clear statement of this point in the *Eudemian Ethics*:

> But since the doctor has a standard (*horos*) by reference to which he distinguishes (*krinein*) what is healthy for the body from what is not, and with reference to (*pros on*) which each thing (*hekaston*) up to a certain point (*mechri*) ought to be done and is healthy, while if less or more is done health is the result no longer, so in regard to actions (*praxeis*) and choices (*haireseôs*) of what is naturally good (*phusei*) but not praiseworthy, the good man (*agathôn*) should have a standard

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[62] Indeed, modern psychological has established as much! Studies show that, if wealth is pursued with the right sorts of aims – namely, utilitarian goals such as helping one's family, enhancing one's ability to pursue other aims – wealth does, indeed, make people happy. By contrast, pursuing wealth as an end in itself – studies show – tends to produce unhappiness.

[63] τὰ γὰρ περιμάχητα καὶ μέγιστα εἶναι δοκοῦντα ἀγαθά, τιμὴ καὶ πλοῦτος καὶ σώματος ἀρεταὶ καὶ εὐτυχίαι καὶ δυνάμεις, ἀγαθὰ μὲν φύσει ἐστίν, ἐνδέχεται δ' εἶναι βλαβερά τισι διὰ τὰς ἕξεις

[64] For discussion, see Broadie 1991, ch. 4, *passim.*

> (*horon*) both of disposition (*hexeôs*) and of choice and avoidance with regard to excess or deficiency of wealth and good fortune, the standard being…as reason (*logos*) directs; this corresponds to saying in regard to diet (*trophê*) that the standard should be as medical science and its reason direct (1249a21-b5)[65]

The doctor has a notion of health according to which he administers to a patient either a stronger or a weaker diet (e.g. of wine, say). He prescribes less or more, any deviation from the appropriate mean results in a loss of health. In the same way, the good man (*agathôn*) deliberates with reference to a standard "of disposition and of choice both concerning both avoidance and use of wealth, poverty and good fortune.'[66] This standard is 'as reason [directs]' (*to hôs logos*). In the case of human being's deliberation, the *telos* is *eu prattein,* or more specifically, the *kalon* in the case of the virtuous person. That is, one deliberates in light of a goal of living or acting well and a notion of the sorts of dispositions and choices that promote such a goal.

As we saw earlier, there are a number of determinants of the conception of *kalon* or *eu prattein.* First, a human being deliberates in light of the specifically *human* good, and not the good of any other being – e.g. the bumblebee. As such, the *telos* must express the fact that man is a rational and political. Consequently, a person ought not to

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[65] ἐπεὶ δ' ἐστί τις ὅρος καὶ τῷ ἰατρῷ, πρὸς ὃν ἀναφέρων κρινει τὸ ὑγιεινὸν σώματι καὶ μή, καὶ πρὸς ὃν μέχρι ποσοῦ ποιητέον ἕκαστον καὶ εὖ ὑγιαῖνον, εἰ δὲ ἔλαττον ἢ πλέον, οὐκέτι· οὕτω καὶ τῷ σπουδαίῳ περὶ τὰς πράξεις καὶ αἱρέσεις τῶν φύσει μὲν ἀγαθῶν οὐκ ἐπαινετῶν δὲ δεῖ τινα εἶναι ὅρον καὶ τῆς ἕξεως καὶ τῆς αἱρέσεως καὶ περὶ φυγῆς καὶ περὶ χρημάτων πλήθους καὶ ὀλιγότητος καὶ τῶν εὐτυχημάτων. ἐν μὲν οὖν τοῖς πρότερον ἐλέχθη τὸ ὡς ὁ λόγος· τοῦτο δ' ἐστὶν ὥσπερ ἂν εἴ τις ἐν τοῖς περὶ τὴν τροφὴν εἴπειεν ὡς ἡ ἰατρικὴ καὶ ὁ λόγος ταύτης.

[66] I have provided my own translation here, since the Barnes translation obscures the point I wish to emphasize in the passage – namely, the content of the *horos* according to which the good person deliberates.

adopt as an end a solitary life outside of the city (*Pol.* 1253a2-4)[67] or a life spent mindlessly in the pursuit of the next pleasure (*NE* 1095a8; 1095b19-22). Similarly, the person deliberates in light of the the good in his or her own case – i.e. her own personal good. For example, Dorothea Brooke deliberates in light of the human good, but in light of her own personal goals as well – namely, commitments to compassion and to the project of helping others achieve their aims. In this way, Aristotle helps us understand how the conception of one's ends might take shape.

2 Interpretations of Deliberation

It is quite natural to ask for more detail about the end or standard in light of which we deliberate. How, precisely, it is structured? Does it take the form of a theory of the good life or of good action? Might it take the form of a set of lexically ordered principles? Might it have far less content than that? In this section of the chapter, I will consider several interpretations of the content of the *telos* that guides the deliberative process. First, I present (1) the generalist views that the universals guiding deliberation are either (a) rules and (b) blueprints from which rules are derived. Then I present (2) the particularist position that the conception of the good (the *kalon*) is a contentless principle that takes definite shape in only particular decision-making contexts.

1a. Rules

According to the rule-case interpretation of deliberation made prominent by D.J. Allan and followed by Gauthier and Jolif, practical reason posits or 'determines'

[67] φανερὸν ὅτι τῶν φύσει ἡ πόλις ἐστί, καὶ ὅτι ὁ ἄνθρωπος φύσει πολιτικὸν ζῷον, καὶ ὁ ἄπολις διὰ φύσιν καὶ οὐ διὰ τύχην ἤτοι φαῦλός ἐστιν, ἢ κρείττων ἢ ἄνθρωπος.

(*horidzesthai)* rules as expressions of good action (*eu prattein*). For example, a woman might determine that fulfillment of one's duties as a wife is an expression of *eu prattein.* Once the relevant rule has been determined, it is applied to a particular situation and results in a choice (*prohairesis*) to perform an action in particular circumstances. Then practical reason issues an 'order' (*keleuei*, *epitattei*) to the appetitve faculty. If desire obeys, it is desire that converts the judgment about the good action into a wish (*boulêsis*) to perform a specific action.[68]

Two scenarios might prevent this process from taking place. First, the rule determined by practical reason may be general. If this is the case, practical reason subsumes particular cases under rules.[69] The result is a decision about what to do *now,* and again, reason issues an order to desire in order that a wish for the action be formed. Second, the rule determined by practical reason may be sufficiently precise, but it may not be clear how to execute the rule. For example, it may be clear that Hamlet should accuse his stepfather Claudius of murder, but it may be unclear how, when, and in what manner he should make this accusation. In this case, practical reason engages in instrumental reasoning and determines the manner in which best to perform an action.

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[68] See Allan, 74-5.

[69] In designating this form of reasoning 'rule-case' reasoning, I am following McDowell 1998. While the rule-case account of deliberation is associated with D.J. Allan (Allan 1953) a version of the rule-case interpretation of deliberation was also popularized by Gauthier and Jolif, but in terms of the efficient and formal causes (Gauthier and Jolif 1970). They characterize the roles of the practical intellect in terms of the formal and efficient causes of deliberation. As a formal cause, deliberation involves the specification of ends. It posits general rules. Practical wisdom also determines the conformity of particular goals to those rules. As an efficient cause, deliberation involves the specification of means by which to achieve the end.

Again, the result of this process of reasoning is a judgment that one should perform *x* action now.

Two notions of 'determination' (*horidzesthai)* might be in use here. One the one hand, consider the sense in which the Secretary of the Treasury determines the interest rate. The Secretary is, in effect, creating what was not already there. This is to be contrasted with the sense in which the astronomer determines the distance between the moon and the Earth. In this case, there is a fact about the distance, and the astronomer is ascertaining the fact.[70]

As D.J. Allan claims, rule-case deliberation involves determination in the former sense – namely, in the sense that the Secretary of the Treasury determines the interest rate. Moral rules, on this conception of practical reasoning, are produced by the practical intellect rather than ascertained by the practical intellect as if they were objectively existing objects of thought. Moreover, they are construed independently of desire, according to Allan. On his account, deliberation is not a process of discovering that one has deep-seated desires for certain ends.[71] For example, deliberation is not the process of discovering that one does really, in fact, care about being a vehicle through which others can fulfill their projects, rather than pursuing one's own projects. Instead, deliberation operates independently of desire in its rule-setting stage, determining rules to which one should be committed, desired or not.

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[70] Allan 1953, 75.

[71] As Allan remarks, "it can hardly have been [Aristotle's] view that reason merely lights up the scene in order to reveal an end which has already been effectively, thought blindly and instinctively, chosen by desire" (Allan 1953, 76).

Once one has determined the general rule that ought to be followed, there is the project of determining whether specific and relevant action types fall under that rule.[72] For the deliberative process must be made relevant to an agent's own case. So, for example, Dorothea might ask whether the keeping of promises to a husband (a specific action type) falls under the more general rule that one fulfill one's duties as a wife. If it is determined that the rule does subsume the action type, then one has a rule to follow that is directly relevant to her own case – namely, that one ought to keep promises to a husband, Following this specific rule is an expression or instance of good action, rather than a means to fulfilling one's *telos,* according to Allan.[73]

Once the appropriate relevant rule has been determined, the reasoner must determine how to realize the rule – i.e. through means-ends reasoning. So, it may be the case that, though Dorothea knows that she should keep the promise, she has yet to determine how precisely she should express as much. When will she do it? Where? How? These sorts of questions are addressed during the stage in which the agent engages in means-ends reasoning about the realization of the rule.

To illustrate these points in the moral case, consider Dorothea from *Middlemarch* again. In the process of deliberation, her faculty of practical reason performs the three functions sketched above. First, it posits the following as an expression of *eu prattein*: 'fulfill one's duties as a wife.' At this stage, Dorothea has only acknowledged that this is

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[72] I use the idea of action types to describe Allan's view. However, this is a bit of overinterpretation for the sake of clarity, since Allan does not distinguish between action types and instances of action in his account of Aristotelian deliberation (Allan 1953, 1955)

[73] For a discussion of the distinction between means and instance and its role in Allan's interpretation, see Sorabji 1973, 202-4.

a good action or an expression the good. She believes that fulfilling one's duties as a wife is the right thing to do, whether she personally desires to do this or not. Indeed, in reflecting about the matter, she naturally refrains from confusing thoughts about what she wants and what is right.

After determining that fulfilling one's duties as a wife is the right thing to do, Dorothea reflects that this is an extremely general judgment and not very helpful, as far as action-guiding considerations go. For example, while she recognizes that it is good to fulfill one's duties as a wife, she is not sure if sacrificing one's own projects for a husband's project counts as an instance of fulfilling one's duties as a wife. But the question about her own projects weighed against her promises to a husband is the very dilemma that Dorothea faces. Thus her faculty of practical reason must undertake a second task – namely, figuring out whether particular instances of actions fulfill the rule in question. Does promising to finish the book count as an instance of the rule that fulfill one's duties as a wife? Ultimately, Dorothea concludes that the act of promising to complete her husband's project does, in fact, fall under the rule that wives fulfill duties to husbands. Her deliberation thus issues in the conclusion that she make the promise.

Finally, there is a question about the manner in which Dorothea should make this promise. After all, Causabon is ill and only, at times, able to entertain sustained conversation. So, Dorothea has to think about the means by which she might make this promise. Through her faculty of practical reason, Dorothea determines that she should approach Causabon during his afternoon walk in the garden on the forthcoming day. Reason orders the appetitive faculty to form the wish to take up this action in pursuit of

the goal of fulfilling her duties to her husband. If Dorothea is not akratic, she will form the desire.

The most important result of the widespread adoption of the rule-case interpretation has been to introduce the debate that has proved to be a central one about practical reason in the latter half of the twentieth century – as Allan himself put it: "what, in [Aristotle's] system, is the part played respectively by *reason* and *desire* in the formulation of the end or good for man?"[74] While commentators have subsequently demurred from accepting the view that practical reason "determines" the end – in the strong sense that Allan conceived of "determination" – they have nevertheless taken seriously the idea that reason plays a prominent role in the determination of ends. This is certainly a reversal from the main view promulgated in first decades of the 1900's, according to which practical reason played *no* role in setting the ends for man (since virtue did this).[75] Most commentators now accept the view that reason plays a role in setting ends. [76]

The interpretation of deliberation as relevant to the agent's case has not been universally accepted. For example, John Cooper objects to the idea that rule-case reasoning terminates in a decision about an action in a particular situation. Rather, Cooper suggests, the purpose of deliberation is to arrive at the rule which can be used, subsequently, as the major premise of the practical syllogism. Thus, deliberation issues

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[74] Allan 1973, 72.
[75] See Burnet, Walter and Zeller for this reading.
[76] Sorabji 1973. Sorabji argues, for example, that commentators have tended to minimize the role that intellect plays in moral reasoning. In response, he points out that the intellect plays a prominent role in three areas: *prohairesis, phronêsis* and moral education.

in choices of action *types,* rather than particular actions.[77] That is, deliberation issues in the subscription to the specific rule 'one ought to keep promises to husbands' rather than in the choice that 'I, Dorothea Brooke, ought to keep my promise to my husband Causabon, and I ought to do this by discussing the matter with him in the garden tomorrow during his daily stroll.'

Cooper's objection targets the assumption that deliberation is incomplete until the agent can hit upon an action he can immediately perform.[78] According to Cooper, a close reading of Aristotle's discussion of practical perception in *NE* VI.9 shows that practical perception is *not* perception of particulars. Instead, according to Cooper, these passages from *NE* VI. 9 show only that deliberation involves consideration of action types – i.e. as opposed to particulars. Commentators develop a false contrast between universal and particular in these passages (1141b14-23, 1142a11-23). They assume that the term often translated as 'particular' (*to kath'hekaston*) and the term for 'this' in those passages refers to individual objects. However, it can be shown that, while Aristotle sometimes uses the term "this" as a reference to particulars, Aristotle does not always use the term in this way. Sometimes he uses the term to reference particular *kinds*: e.g. man, horse, as opposed to animal.[79]

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[77] Cooper 1975, 23. "Aristotle only requires that deliberation issue in a decision to perform an action of some definite, specific *type,* and it is a matter of indifference to him whether the time for implementing the decision is the time at which it is made, or somewhat later on.. And even in the case where the time for action coincides with the time of decision, deliberation's work is done as soon as an action of a suitable specific type is hit upon as a means of achieving, or beginning to achieve, the end in view."
[78] Ibid.
[79] Ibid, 28-9.

What is the motivation for this revision of the standard view about deliberation? The issue is about the proper characterization of the deliberative process. Is it a process through which one thinks generally about the sorts of actions which count as good? Or is it a process through which one determines how, specifically, one ought to act in the circumstances in a way that depends heavily on moral perception? Cooper favors the former interpretation for the following reasons. First, we might want to resist the view that the practical syllogism forms part of the process of deliberation and thus the idea that deliberation is syllogistic in form. According to a standard reading of Aristotle, the practical syllogism is the last part of the deliberative process. Deliberation is not over until the agent arrives at an action he can perform. This is the picture suggested by Aristotle's remarks in *NE* III, which can be naturally read as the point that the agent arrives at a decision only after he has considered whether the action captured by the decision is *practicable.* For Aristotle claims that deliberation concerns what is up to us and doable (*peri tôn eph hêmin kai praktôn*) (1112a31; 1141b10-11). Most commentators take Aristotle to mean that deliberation must establish, in part, that the means needed to carry out the decision are available. Hence, the thought that deliberation partly involve perception.

But we might want to resist this account of deliberation on the grounds that it gives a phenomenologically false picture of deliberation.[80] According to Cooper, the standard account assumes that the we are interested in carrying out the decision *right then and there.* However, we often postpone carrying out our decisions. To see Cooper's objection, consider the following example. Suppose that you have a bad headache, but

[80] Ibid, 26-7. Cf. 51-2.

you decide to take aspirin, rather than migraine medicine, which would alleviate the pain better, but would also make you sleepy. Need it be the case that, in the course of deliberation, you establish what it would take actually to have the medicine in your mouth? No, according to Cooper. "He knows where the aspirin is and what it looks like, so he does not need to "bring the starting-point back to himself" by noting that *there* (mentally pointing) is the bathroom or (once standing before the open medicine-chest) that *that* is the aspirin, or that *this* (an act of grabbing) is taking."[81] These additional thoughts are not part of deliberation. Rather, they are the work of perception.

A second reason to resist the idea that deliberation involves means-ends reasoning is that it pushes us to think that deliberation is characterized by moral perception, rather than, say, reflection on the rules that we think are indicative of good action. Recall that the earlier stages of Dorothea Brooke's deliberation about promises and husbands. Her reflection was quite general, for it concerned the question: what is right, *in general*? That is, Dorothea reflected on the nature of relationships generally and the extent to which the husband-wife relationship called for sacrifices of one of the partner's projects. She thought generally about the gravity of making a solemn promise to a dying person. By contrast, her reflection about the terms under which she should actually make the promise and her specific grounds for making the promise reflected considerations about her own life: the degree to which Causabon had cut her out of his life, the degree to which he was a sensitive man in need of compassion, the degree to which she personally had a commitment to compassion for others and to helping others realize their projects. Then, of course, there is the quotidian reflection about the actual means by which to realize

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[81] Ibid, 23.

one's decisions – e.g. by waiting to discuss the promise until tomorrow in the garden during a daily stroll.

Suppose that, as a commentator, one wants to highlight the sense in which moral reflection concerns the former stage – namely, the stage in which one thinks about what is right. Suppose too that one wants to drive a wedge between relfection about what is right and moral perception of the kind that the particularist emphasizes. If so, one might want to follow Cooper's lead and interpret deliberation as a process that does not involve means-ends reasoning and that just involves a stage of reflection on moral problems during which we consider what is right.

1b. Blueprint

The next main interpretation of deliberation is one according to which the *phronimos* has a filled-out conception, theory, or blueprint of the good that guides his decisions. By 'blueprint' or 'plan,' one should understand, at the very least, a determinate and well-defined plan of the good life – one that takes the form of basic principles which are lexically ordered with respect to one another. For example, one's plan for life might include both commitment to career and to one's children, but in such a way that the commitment to career is weighted more heavily than the commitment to one's children. Cooper describes the plan as follows:

> The life defined by such a plan – ends together with weights or other ordering principles – would be regarded as a single comprehensive end which one has constantly in view and which one is seeking to realize in each and every decision one makes" (Cooper 1975, 96).

This blueprint or plan is acquired through habituation, first of all, but is later enhanced by knowledge of the grounds according to which some values are privileged over others.[82] To make *eu prattein* a plan is to pursue a second-order end that one's plan be effected or that one's life realizes a plan – hence Aristotle's requirement that one pursue an ultimate end as his single object of pursuit.[83]

Terence Irwin subscribes to a blueprint picture of deliberation. According to Irwin, the conception of happiness (H) is arrived at by "considering myself and my life as a whole, since the final good has to be something whole and complete…." (65). Included in "myself and my life as a whole" are the multiple stages of life, one's capacities, desires and aims (65). The *phronimos* takes an impartial position in deliberating about his life, according to Irwin.

> "The fact that I am now at this particular stage of my life, and the fact that I am especially interested in this particular project or aim, will not be allowed to warp my conception of myself as a whole extended both over different times and over different desires and capacities. Other people fall short of the holism and impartiality of the wise person's point of view" (66).

The problem with the others who cannot sustain impartial reflection on their lives is that they are susceptible to false notions of the good life. Granted, these conceptions may be holistic. However, their general and holistic conceptions of life are dominated by immediate goods – e.g. sex or pleasure. Such people tend to oscillate between life pictures that are dominated by these immediate goals – whatever they happen to be at that

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[82] Sarah Broadie describes the picture in the following way: "a wished for end on which deliberation focuses is a comprehensive panorama of the good in which the agent's values and priorities are all subsumed or represented, either in terms of some interminably complex state of affairs to be brough about or in terms of some action to be done providentially designed to take care of them" (Broadie 1991, 234).

[83] For the idea that desire that the plan be fulfilled as a second-order desire, see Cooper 1975, 96-7.

moment - and life pictures in which the desirability of the immediate goals are tempered by long-standing or enduring goals. In addition, such people fail to see that the oscillation in ends at which they aim is caused by the deeper structural problem of having both the short-term and the long-term goals (66).

Irwin argues that, since the general conception of happiness is *so* general, additional linking devices are needed to explain how one can move from the general conception of *eudaimonia* to the major premise (a rule) that informs the practical syllogism.[84] For Irwin, the process of deliberation is envisioned syllogistically, and to the extent that deliberation is a syllogism, there is a question: how does one select the relevant major premise in any given situation? Indeed, how does one go from the conception of happiness to the major premise? The explanation is a linking device. The linking device is an end that I pursue on a particular occasion. For example, I may pursue generosity in a particular situation. However, my pursuit of generosity, as a matter of course, can be derived from my conception of happiness.[85] If agents accept that a general conception of happiness is their end, they also allow that this conception of happiness should determine the end in the particular situation. This end – say, generosity, determines which major premise I should adopt in the situation – for example: choosing to give money over not giving money. Ends and major premises should

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[84] See the interchange between Irwin 1988 and McDowell 1988. Irwin introduces the linking principles, technically, to explain the possibility of *akrasia.* McDowell has worried about this conception of linking rules; he complains that there is no evidence for any such thing in Aristotle's texts.

[85] "To claim that H should determine R is to claim that the end I rationally aim at on a particular occasion should be, or should be ultimately derived from, the end I recognize as my ultimate good." (Irwin 1988, 65).

preserve that impartial quality of the conception of happiness. They should represent particular aims and rules that the agent would endorse from an impartial perspective. They will also agree that these should be the principles that guide action (66-7).

Two points should be noted in order to avoid misunderstanding. First, all reasoning in practical decision-making can be traced back to that conception of happiness. Nevertheless, it is not required, on this picture, that one consciously reflect on the conception of one's end in every deliberative situation. Rather, it is required merely that one be able to justify his or her decision in light of the plan. Second, though one pursues a single plan of life, on this reading, that single plan may have a variety of ends – some political, some philosophical, some personal. Hence, in pursuing the single plan, one is not necessarily in the grip of the pursuit of a single kind of life or single kind of goal. In this way, the blueprint account of deliberation is not tied to value monism.

Some critics of the blueprint model of deliberation have focused on the sense in which this account of *eu prattein* resembles a technical conception. For commentators who accept the analogy between craft (*technê*) and *phronêsis*, there will be a something like a 'technical picture in *phronêsis,* just as there is one in *technê.* That is, those who accept the analogy between craft and *phronêsis* also accept the idea that *phronêsis* has something like a technical picture, just as craft does. For example, Sarah Broadie – referring to 'blueprint' or "picture" has in mind the sort of organized body of knowledge that constitutes a craftsman's training. [86] Consider, for example, the theory of health in

[86] For a description, see Broadie 1991. "The wished for end on which deliberation focuses is a comprehensive panorama of the good in which the agent's values and priorities are all subsumed or represented, either in terms of some interminably complex

the case of medicine. The theory of health consists of the tried and true observations that one finds in a doctor's textbook. This is the 'technical picture' to which a craftsman appeals.

One might criticize the blueprint model on the grounds that it makes deliberation too easy. As Sarah Broadie points out, we can imagine a rich and complex moral theory from which one might arrive at choices about particular situations. But such an account is implausible if it is meant to account exhaustively for all forms of moral reasoning. For it means that deliberation takes the form of deductive reasoning, thus placing all the burden or difficulty of moral reasoning on the conjuring of the right moral theory. Once the right theory is in place, deduction happens as if an afterthought.

A number of additional objections can be made. First, the blueprint model does accomodate revision as a matter of course. But it seems unlikely that one would arrive at an unchanging moral theory. We frequently revise our values or goals on reflection. Not only is it improbable that anyone might have an unchanging plan for the good life, it may not be desirable to have such a plan. There are certainly important virtues associated with the person who admits ignorance about what is good – for example, humility in the face of a truly difficult question. Similarly, there may be vices associated with the possession of a well-defined plan for life (self-righteousness, a tendency to be judgmental and dogmatic). Moreover, on some conceptions of good life – those which emphasize the importance of experience and experimentation, say - having a well-defined plan of life is *un*desirable.

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state of affairs to be brought about or in terms of some action to be done providentially designed to take care of them" (234).

2 Particularism

The third account of deliberation to consider is the particularist's. According to the particularist's interpretation of deliberation, *eu prattein* is a content-less conception of the good, and this conception simply amounts to the sum total of propensities to read or perceive particular situations in light of the *kalon.* These can be thought of as the deliverances of a perceptual faculty, or perceptual scenes. Because the deliverances of a perceptual faculty are so fine-grained and variable, there can be no set of rules to which they neatly correspond. *Phronêsis,* on this reading, involves perception of particulars. On this view, Aristotle means to say that decisions (*prohaireseis*) issue *solely* from perceptual judgments. No further processing – in the form of consultation of principles – is necessary.

The particularist rejects the view that moral reasoning resembles theory building and deductive reasoning – the sort of account we have just seen in the blueprint and rule-case models of deliberation. The central feature of those models to which the particularist objects is the idea that deliberation resembles deductive reasoning.[87] That is, one possesses a correct theory of the good – say, a sort of blueprint or plan according to which various goals are represented and ranked in order of importance. Once one is acquainted with the non-moral facts of particular situations, one is in the position to make the required deduction. E.g. (1) My theory of the good requires that I fulfill my duties to my husband; (2) here is an opportunity to fulfill those duties; and (3) *therefore,* I should fulfill them. The particularist argues that, on this conception of deliberation, too much work goes into the theory-building or rule-casting aspect of deliberation and not enough

[87] McDowell 1998, 27-8.

into the difficult weighing of various alternatives against one another and the seeing of the morally salient features of the situation.

The particularist will also object to the blueprint and rule-case interpretations of deliberaiton on the grounds that, first of all, Aristotle often claims that there are not universal truths in ethics (cf. 1009b12-23). Hence, it is unclear why the other interpretations help themselves to numerous universal – like entities (i.e. rules) in ethics. Second, the others account cannot make sense of Aristotle's remarks about the role that perception plays in *phronêsis*. According to the blueprint account, the function of perception in *phronêsis* is to acquaint the agent with his surroundings and then to use the deliverances of perception to decide which rule to invoke. The same goes for the rule-case interpretation. As McDowell puts it, " in the "rule"-"case" picture, the most obvious role for perception is to contribute awareness that certain conditions, which are in fact the conditions specified in a rule, are satisfied."[88]

There are two problems with these readings of the role of perception in moral reasoning. First, Aristotle seems to be suggesting that moral perception plays a far more robust role than merely acquainting agents with the fact that the right conditions hold for the application of a rule. Rather, Aristotle seems to be suggesting that moral agents see situations in different ways, depending on their characters. (Aristotle says that things appear differently to people, depending on their character.[89]) If this is so, then perception

[88] McDowell 1998a, 28.
[89] For discussion, see Woods 1986 and Loudon 1991. For the relevant texts in the *Nicomachean Ethics,* see: III.4, 1113 a15-31; III.5, 1114 a31-b8; X.5, 1176 a3-30.

acquaints agents not merely with non-moral facts, but with moral facts as well, and thus that moral perception plays all the difference in motivating good conduct.

While the sensibility theorist's account is motivated by a rejection of the blueprint model, it is also motivated by a reading of certain passages about inexactness and perception. Particularist readings are persuasive on the following textual grounds:

1 First, Aristotle claims that the subject matter of ethics is inexact. The subject matter (*hulê*) of politics is human good (*ta anthropina agatha*), and about such matters, there is much variability (*diaphora*)(1094a16). According to Aristotle, matters concerning the human good are either good or bad, depending on the situation. As a result, we should not seek the same exactness (*akribeia*) in politics as we might in other sciences.[90] For matters in politics hold only 'for the most part' (1094b21). As a result, we must indicate the truth 'in outline' (*en topoi*) (e.g. 1094b11-27). These passages have been taken to indicate that Aristotle views the subject matter of ethics as too fluid and variable to admit of codification, as the particularist suggests.[91]

2 Second, Aristotle claims that *phronêsis* involves perception, and he insists that *phronêsis* involves perception of particulars.[92] Since *phronêsis* is practical (*praktikê*), and practice is concerned with the particular (*kath hekasta*), *phronêsis* involves

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[90] Ethics is inexact (1094b13; 1104a1-9; 1141a16-19). The educated person (*pepaideumenos*) knows as much and does not seek the same exactness (*akribeia*) of expression in politics that one seeks in the demonstative sciences (1094b13; 1104a1-9; 1141a16-19). The educated person does not require a demonstrative proof from a speechmaker (*NE* 1094b11-27).

[91] This is the view developed by John McDowell (McDowell 1979) and Martha Nussbaum (Nussbaum 1990).

[92] II.9, 1109b20-4; III.5, 1114a31-b8; VI. 5, 1126b3-4; VI. 11, 1143a35-b5; VI.8, 1142a18-30. Practical knowledge concerns both universals and particulars (1141b; cf. 1142a13; 1142a22-4). Judgment (*krisis*) is in perception (1142a23-30).

perception of particulars (1141b15, b16). Familiarity with particulars comes from experience (1142a13). The result is that learned people are not necessarily wise, for they may lack experience (*empereia*)(1141b3-5). Similarly, while young people can be good at math and such things, they cannot be wise, for they lack experience (1142a15-9). The emphasis on the perception of the particular suggests that practical knowledge is expressed through perception of the morally salient features of a situation, rather than through any expressible or contentful claims. Similarly, the image of the *phronimos* as experienced in life suggests that *phronêsis* cannot be expressed in terms of knowledge or contentful claims. For it is strange to imagine that the experienced person is wise because he or she knows some rules by which to live. Rather, the experienced person seems simply to *get* it naturally – i.e. without overthinking things.

3 Finally, Aristotle distinguishes *phronêsis* from *technê* and *epistêmê.* One might take this to mean that practical reasoning is neither technical or scientific reasoning. If one assumes that both technical and scientific reasoning can be modeled syllogistically, one might construe Aristotle's point as a denial of the claim hat practical reasoning is a form of syllogistic or deductive reasoning. The apparent absense of any such rules in the discussions of deliberation seem to underline the suggestion that deductive reasoning is not part of the paradigm of practical reasoning (*NE* III.5, VI.4).

How does the particularist account for the role of rules given his account of ethical knowledge? Rules are summaries of wise decisions or generalizations from past decisions.[93] They summarize, in particular, *wise* decisions – for example, that such and

[93] Irwin 1988, 101.

such a thing was expedient in such and such a case. What I have in mind here is something like a football team's play book. The playbook show how the ball should be moved down the field. It specifies what each player is responsible for, and how each maneuver is supposed to work. Notice that these playbooks can be very precise. Suppose, for example, that the Arizona Cardinals football team has drawn up a set of tactical principles that have helped them win against the Philadelphia Eagles in the past.[94] The idea is that a rules summarize wise decisions just just as the playbook summarizes the successful past plays.

The function of rules is *heuristic* for the particularist[95] They aid in the decision making process, but they do not necessarily determine what one should do. For one can disregard the advice of my rules just as one can disregard the advice of a trusted councilor. The mere fact of disregarding the advice is not wrong. It is just that, on some occasions, a person seem to know better. Let me provide an example of the way we might understand *heuristic* here.[96]: Consider the Arizona Cardinals' list of tactical maneuvers again.. Suppose that Kurt Warner realizes on the third down that, by

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[94] The inspiration for this example is Irwin 1988, 123.

[95] The view not mentioned here is that the function of rules is *justificatory*; they justify individual decisions, or they serve as the authorities against which individual decisions are judged. (One could also say that, on this view, particular judgments are correct to the extent that they conform to rules.) For example, on this view, I would describe my decision not to lie in such and such a case as correct just because I have adopted the rule that it is wrong to lie. That rule, in my mind, serves as a justification of my decision.

[96] Irwin claims to give a formal definition in the following statement, but it seems less than satisfactory, since "priority of perception" is defined as a thesis about the function of rules, rather than a thesis about the function of perception in moral judgment: The dispute seems to be about…theoretical normative priority. Are the true principles true to the extent that they summarize the particular perceptual judgments of virtuous agents, or are the particular judgments correct in so far as they conform to true general principles? (Irwin 1988, 103, 124). For discussion of Irwin's notion of 'priority of perception,' see McKeever and Ridge 2006, 12-4.

disregarding the principle that the quarterback should not run, the team can get a first down. He disregards the rule, *seeing* that another strategy will work well here. He makes the renegade play and gets the first down. The coach does not give much thought to the fact that Warner has disregarded the playbook. He is pleased that the play worked, and thinks to himself: that Kurt Warner. He's an inspired quarterback – the idea being that Kurt Warner is the kind of person who knows when to use the play book to make a call and when to use his own discretion. Thus, by *heuristic* here, I mean to capture the idea that we are morally permitted to disregard rules if our perception of particular situations prompts us to act differently.[97] Rules are only aids to good decision-making, but not definitive of good decision-making.

We should attempt to avoid misunderstandings and caricatures of this position about rules. First, one might think that, according to the particularist, moral expertise is the art of knowing when to make exceptions to the rule – i.e. the art of an unprincipled person. Given the degree to which we are prone to self-deception, does it not seem on the whole better for us not to be allowed to decide, perhaps whimsically, or in a self-serving manner, when we feel like we know better than the rules? Thus, an objection to the particularist's construal of rules might go: is this process of *seeing* a kind of free-for-all, haphazard and unprincipled act of pure discretion? If so, it's not for me. Here, the particularist may respond that the act of perceptual discretion that is called for is undergirded by a set of emotional propensities. In the ideal case, these are habituated correctly. If habituated correctly, the person wil feel the appropriate emotions, motivations and responses to situations.

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[97] Irwin 2000, 124.

A second possible misunderstanding is the idea that the moral expert *either* follows the rule book *or* he throws it to the wind, using his own expert discretion. That is: whenever our principles seem to fall short, we ought to use perception to settle the situation. This is a false dichotomy where the particularist's expert is concerned. The agent is *not* to be conceived as someone who, in grasping that the rules do not cover his case, says to himself: aha! I will now use perception to settle the matter. That is, he is not to be regarded as employing either rules or discretion to make decisions. Rather, each process is to be envisioned as informing the other.[98] Consider, for example, the way that the practically wise person simultaneously makes use of both rules and particular features of a situation.

The basic feature of the particularist's account, for our purposes, is the rejection of the idea that deliberation appeals to action-guiding principles. As we have seen, the particularist accepts that deliberation may appeal to action guiding principles as *heuristic* devices. But these principles are not definitive of good decision-making. Their role in decision-making is always secondary to moral perception, or the seeing of the morally salient features of the situation. In future chapters, I will question the extent to which this account of deliberation maps on to Aristotle's account of deliberation.

Conclusion

This chapter presented an overview of Aristotle's account of deliberation, an account of the generalist and particularist interpretations of deliberation. We saw that the generalist

[98] For discussion, see Nussbaum 1990, 78-9. For a full account of this position, see Barbara Herman's account of 'reason-responsive desires' in Herman 1993. See also McDowell 1996.

appeals to action-guiding principles for deliberation and that the particularist allows only that such principles play a heuristic role in the decision-making process. We also briefly considered the textual evidence for the particularist reading of Aristotle's ethics. The evidence included Aristotle's remarks about 'exactness' (*akribeia*), the 'particular' (*kath hekasta*), claims that hold 'for the most part' (*hôs epi to polu*), the 'outline' (*tupos*) and 'variation' (*diaphora*).

The next chapter will reposition that textual evidence in the context of Aristotle's scientific thought about exact science. I will show that the evidence can be usefully repositioned in a debate about the status of the various sciences in ancient Greek thought. Some were considered more science-like than others because they had the properties associated with the 'exact' (*akribeia*) sciences such as geometry and arithmetic. Repositioning the textual evidence for particularist readings of Aristotle's ethics will help us to see why that evidence does not, in fact, support the particularist interpretation.

Chapter 3

Exact Science in the *Nicomachean Ethics*

In the previous chapter, we saw that there is a question about the extent to which a conception of the good informs the choice of action in a particular situation. I sketched several explanatory accounts – among them, the particularist account, according to which the conception of the good that guides deliberation takes shape only in particular situations through a process of grasping the morally salient features of the situation. We saw that the reading of Aristotle as a particularist is based on Aristotle's claims that politics lacks exactness; that the subject matter of politics is human good; and that there is much variability about such matters. Indeed, matters in politics hold only 'for the most part.' As a result, we must indicate the truth 'in outline.' The particularist uses these passages to suggest that Aristotle views the subject matter of ethics as too fluid and variable to admit of codification.

In this chapter of the dissertation, I would like to place Aristotle's remarks about these features in their broader context as a feature of scientific discourse in fifth and fourth-century Greece. In the period's literature on *technê,* there was widespread agreement that exactness was the mark of a true *technê*. In turn, exactness was associated with measurement, method, rigorous proof and mathematical abstraction. By contrast, the inexact sciences were associated with the lack of these features. Indeed, the natural sciences like medicine and political science dealt with matters that were not easily codifiable in mathematical terms.

The first part of this chapter describes the history of the exact sciences in Aristotle's era and the influence of Plato's late philosophy on Aristotle's understanding of exact science. The second part of the chapter provides a discussion of three criteria that Aristotle uses to define the exact science. In the third part of the chapter, I discuss the sense in which political science fails to be exact. Aristotle's claims about exact science and politics and his explanation for the lack of exactness in politics. I also discuss a possible link between exact science and the notion of 'difference' (*diaphora*) that we find in Aristotle's works. I conclude the chapter with a brief summary of various terms Aristotle uses to convey the idea that a science was inexact.

1 The Exact Sciences

The term '*akribês*' has a pre-philosophical origin. It was related to the *technai* involving carpentry or sculpture.[99] The word was used to indicate that the craftsman's project showed a great degree of finish or detail. For example, in Aristotle's *De Caelo,* the term is used to compare the sphere that composes the material world with the celestial world. Aristotle claims that the matter from which this sphere is composed does not have the same "regularity and finish" as the enveloping, celestial matter (287b19). This use of *akribês* to mean careful craftmanship is also seen in the *Nicomachean Ethics*. Aristotle claims:

> Wisdom in the arts we ascribe to their most finished (*akribestatois*) exponents, e.g. to Phidias as a sculptor and to Polyclitus as a maker of statues, and here we mean nothing by wisdom except excellence in art (*NE* VI.7, 1141a9-11).

[99] For discussion of the term '*akribês*,' see Schiefsky 2005, 13-4. For discussion of the notion of exact science, see Lloyd 1999. Lloyd argues that, while the model of exact science – in particular, the notion of demonstrationwas one of the great achievements of Greek science, it was also problematic in that it encouraged dogmatic over-mathematization of phenomena. "Time and time again, Greek scientists interpret their subjects as far as posible as branches of pure mathematics" (Lloyd 1999, 121).

As Stewart points out, the use of *akribestatois* here is synonymous with wisdom. Any craftsman – e.g. carpenter, sculptor, poet or musician – who excelled in his art was also referred to as wise or *sophos.*[100] As the passage goes on to suggest, the most exact craftsman is excellent insofar as he has a grasp of the fundamental principles of his craft. Or, as Aristotle puts it, the wise person has not only knowledge of the first principles (*archai*), but also of the truth of the first principles (a17-8; cf. a19). Hence, wisdom (*sophia*) is the "most finished" (a16-7) of the forms of knowledge.[101]

But, in its main use, the term '*akribês*' applies to the well crafted speech or argument. This sense of the term can be seen in Aristotle's *Rhetoric*. There, Aristotle claims that the written style of rhetoric tends to be 'more finished' (*akribesteron,* 1413b 9; cf. 1355a25). The sense of craftedness here sometimes refers particularly to discussions that include thorough explanations or great detail. The defendant's speech that gives more thorough argumentation or evidence of a point would have been 'finished' (Antiphon, *Third Tetralogy,* 4.3.1). But in this latter context, the word had both a negative and a positive connotation. For it is possible to give a sketch of one's argument – a sketch that gets the basic point across all the while recognizing that the subject deserves a more detailed, fuller treatment. So, for example, in Plato's *Statesman*, Socrates contrasts a discussion that has been 'sufficient' with one that is truly exact

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[100] Stewart 1892, 54. Aristotle's explanation of the sense in which a *technê* is exact is clearly idiosyncratic. Lear discusses this passage and suggests that the sculptor's art is exact to the degree that the sculptor adeptly realizes form in the marble – hence, the relationship between form and *akribês* (Lear 2004, 111). Lear is right to doubt this reading, for Aristotle identifies *akribês* with knowledge of causes, as I suggest below.

[101] Stewart suggests that the *sophia* of an artist such as Phidias of Polyclitus (*NE* VI.7, 1141a10-11) would have used "technical skill guided by artistic ideals which the artist's own genius supplies" – his gloss on '*hosper kephalan exousa'* (a19).

(284d)[102] But it is also possible to go into too much detail and obscure the main lines of one's argument. Indeed, this can be done purposefully, in the manner of a sophist. Hence, Isocrates writes in his speech *To Philip* that one can best understand the willingness of a city to go to war if one reviews "neither in general terms nor yet with *excessive detail* the principal facts in their present situation" (*To Philip,* 46). Similarly, in the second *Tetralogy,* Antiphon suggests that 'subtlety' of argument indicates that a speaker is engaging in sophistry.

Akribês was often associated with measurement. Thus, in Plato's *Philebus,* Socrates ranks the *technai* by the exactness each can achieve in measurement (55d-56c). Some are more closely related to knowledge, and others are less so. For example, the *technai* more closely related to knowledge are 'purer' (55d). Those less closely related to knowledge are less so. The former are futher characterized as being the sciences of arithmetic, measurement and weighing (55e). These are contrasted with the sciences which operate by conjecture and through experience, perception, and knack (55e). Achievement in these arts is gotten through practice and toil (55e). For example, music might attain harmony through guesswork, rather than through measurement (56a). The result would be lack of clarity about the pitch, rather than certainty (56a; cf. 59c).[103]

Sciences which proceed in this manner, according to Socrates, include: medicine, music, farming, navigation and generalship. All are less mathematical and precise. The real *technai* are those that use measurment and tools, all of which give it certainty and make it more like genuine knowledge (*epistêmê*) than the other arts. These crafts

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[102] For a similar use of the idea of *akribês,* see *Historia Animalium,* 487a12.
[103] τὸ σύμφωνον ἁρμόττουσα οὐ μέτρῳ ἀλλὰ μελέτης στοχασμῷ

include: shipbuilding, housebuilding, building, and carpentry. They use tools of measurement like the compass, rule, and the line (56c). With the distinction between the mathematical and non-mathematical sciences in mind, Socrates proposes that the arts be divided into two classes: those that are more exact like building, and those that are less exact, like music (56c).

In a more limited use – one that is derived from Plato's works *akribês* was associated with the objects of study themselves. The nature of the object of study made the science exact or inexact. For Plato, the stable structures behind apparent change are the proper objects of study. Hence, in the *Philebus,* Socrates suggests that some properties make an object the proper study of an exact science: purity (59c), an unmixed quality (59c), absence of inequality (*anisos*), and 'reality' (59c; cf. *Republic,* 522c-531c).[104]

Plato's remarks are a reprise of the familiar position that the most true and the best sciences study what *really* exists, rather than what is merely apparent. In the *Philebus* passage, for example, Socrates claims that arithmetic should be distinguished into two kinds. The first form is for the people, and the second, for the philosophers. The former calculate with unequal units like armies and oxen. The latter deal only with units that are identical to all other units. With this distinction in mind, arithmetic and measurement used for practical purposes is unlike philosophical geometry. For arithmetic, as philosophers practice it, is 'more clear' in that it has the higher amount of exactness (57c; cf. 58c).

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[104] ἀεὶ κατὰ τὰ αὐτὰ ὡσαύτως ἀμεικτότατα ἔχοντα

2 Aristotle and the Criteria of Exact Science

The influence of Plato's notion of an exact science as one that studies what really exists can be seen in Aristotle's understanding of the exact sciences. Aristotle also uses the term *akribês* to distinguish the exact sciences from the inexact sciences. Every science deals with a particular subject matter or studies a particular kind of object, considered in a certain respect or aspect (*Meta* M.3, 1077b33). Like Plato, Aristotle conceives of the most exact sciences as those that study the ontological entities that are most real.

Aristotle provides three defining criteria for the exact science in the *Posterior Analytics*.[105] He writes:

> One science is more precise (*akribestera*) than another and prior to both (1) if it is at the same time of the fact (*tou hoti*) and of the reason why (*di hoti*) and not of the fact separately of the science of the reason why; and (2) if it is not said of an underlying subject and the other is said of an underlying subject (e.g. arithmetic and harmonics); and (3) if it depends on fewer items and the other on an additional posit (e.g. arithmetics and geometry) (I mean by an additional posit, e.g. a unit is a positionless substance, and a point a substance having position – the latter depends on an additional post.) (*Posterior Analytics,* I.27, 87a31-36). [106]

The three criteria show us that an exact science: (1) studies explanations in addition to facts; and (2) studies objects in abstraction from their matter. Finally, an exact science studies objects (3) stripped of *most* of their properties – matter and others.

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[105] For discussion, see Lear 2004, 109 ff.

[106] Ακριβεστέρα δ' ἐπιστήμη ἐπιστήμης καὶ προτέρα ἥ τε τοῦ ὅτι καὶ διότι ἡ αὐτή, ἀλλὰ μὴ χωρὶς τοῦ ὅτι τῆς τοῦ διότι, καὶ ἡ μὴ καθ' ὑποκειμένου τῆς καθ' ὑποκειμένου, οἷον ἀριθμητικὴ ἁρμονικῆς, καὶ ἡ ἐξ ἐλαττόνων τῆς ἐκ προσθέσεως, οἷον γεωμετρίας ἀριθμητική. λέγω δ' ἐκ προσθέσεως, οἷον μονὰς οὐσία ἄθετος, στιγμὴ δὲ οὐσία θετός· ταύτην ἐκ προσθέσεως.

According to the first criterion, an exact science studies facts through their explanations rather than by simply studying the facts.[107] For example, one may know that 'the sky is blue.' But it is an entirely different matter to know that 'the sky is blue,' all the while knowing, in addition, *why* it is blue.

To see Aristotle's meaning fully, it is necessary to review the distinction between understanding the fact the 'that' (*hoti*) and the explanation the 'because' (*di hoti*).[108] To grasp the 'because' (*di hoti*) is to have the ability to demonstrate the fact (*hoti*) from prior and immediate facts (*An. Post.* 71b21). Priority is a reference to causation and, in particular, the relationship of causes to one another. A cause is prior to another if it is the cause of another. For example, if *a* is the cause of *z,* then *a* is therefore prior to *z.* Immediacy is also a reference to relationships among causes and in particular, the proximity of causes to some result. A cause is relatively proximate to a result, if it is more directly the cause of that result than some other cause. For example, *a, b* and *c* might all be the causes of *z,* and *a* the cause of *b, b* the cause of *c,* and so on. . In this case, *c* is more directly the cause of *z* than *a* or *b.* Thus, *c* is the proximate cause of *z* with relation to *a* and *b.*

An example will illustrate the nature of Aristotle's claims about priority and proximity. Suppose that you use a telescope to observe that the planets are near to the Earth. With your naked eye, you observe that they do not twinkle. You also suppose that the two phenomena are related – i.e. the fact that the planets do not twinkle and that they

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[107] Barnes rightly notes that Aristotle's concern in the chapter is not between understanding a fact and an explanation, but rather between understanding a fact through its explanation and understanding a fact, but not through its explanation (Barnes 1993, 155).

[108] For discussion of the distinction, see *Posterior Analytics,* I.13.

are also near. But there are several questions to ask about the way in which these two phenomena might be related. First of all, what is the order of explanation? Do planets fail to twinkle because they are near to the Earth? Or is it the case that they are near to the Earth because they do not twinkle? As it turns out, planets do not twinkle because they are near. For Aristotle, getting the order of explanation correct is identifying the right 'middle term' of a demonstration (78a23-b33). Aristotle frames this point in another way by noting that a science like harmonics, which deals with actual chors and sounds, does not provide explanations of the phenomena that it studies. Instead, arithmetic provides those explanations (*Post An,* I.13, 79a1-7; cf. *Post An* I.7; I.10). That is, both study relations among numbers, but arithmetic concerns itself with the explanations of chords and sounds (79a3-7). It is only *qua* knower of arithmetic that the phenomena of harmonics can be explained (cf. *Post An* I.10, 76b4).

Second, what is the most direct cause of the planets' not twinkling? Planets do no twinkle because they are near – this is true. But is there some explanation that has more explanatory power? We might say – supplementing the Aristotelian account that the better explanation is the following. If a relatively large amount of light from a source reaches the eye reaches the eye, the source does not appear to twinkle. If a small amount of light from the source reaches the eye, the source appears to twinkle. Since the planets are close to the Earth, a relatively large amount of the light rays reflected from their surface reach the Earth. Thus, nearness does explain why the planets do not twinkle, but is not nearness *per se* that explains the lack of twinkling. Rather, it is the amount and the velocity of light rays, or the intensity of light given from a source that indicate whether

something will twinkle. Hence, we might say that light intensity, rather than nearness, is the proximate cause of the planets' twinkling (or failure to twinkle).

With these two ideas in hand – priority and proximity – we are in a position to see the nature of the exact science. An exact science is one that provides both the prior and proximate causes of the phenomena in question. It would be a science, in effect, which provided an explanation of the fact that the planets' not twinking, and it would explain this fact by appealing to the most helpful (or proximate) explanations – namely, the fact that the intensity of light rays reaching the eye accounts for the extent to which a source may or may not twinkle.

The second criterion for an exact science is that the science is not "said of an underlying subject" (*hupokeimenon*).[109] Aristotle refers here to a distinction between sciences that study objects *qua* enmattered objects – thus having a *hupokeimenon* - and those that study objects abstracted of their form. For example, a biologist studies plant and animal life, all of which exhibit shapes, quantities, relations of numbers, and so on. The mathematician studies the same objects, but without taking into account the matter of these things. The mathematician is not interested in real, enmattered spores in nature, as the biologist might be. Rather, he is interested only in the properties of the spore that can be abstracted from its matter – namely, its spherical shape (*Met.* XIII.3; (*Post An* I.13, 79a8-12). Similarly, the biologist might be interested in pinecones and the material which allows them to best serve as seed transporters. By contrast, the mathematician

[109] Reeve reads Aristotle's claim here as being a point about matter. The criterion "states in other terminology – matter is the underlying thing to which it refers – that exactness in a science is a function of its level of abstraction from matter" (Reeve 1995, 140).

might be interested only in the fact that the pinecone displays the pattern of the Fibonacci series. For Aristotle, sciences like mathematics which study objects abstracted from their matter are more exact than those which do not (*De Cael,* 306a27; *Met.* 995a15-6).

According to the third criterion for exact science, a science is more exact if it (a) "depends on fewer items and (b) "posits few principles." To claim that an exact science depends on fewer items means that an exact science deals with objects that have relatively few properties. In the *Metaphysics,* Aristotle refers to this state as 'simplicity' (*to haploun*) simplicity is the state of the object having the fewest properties.[110] To the degree that we deal with things that are prior in formula and simpler, knowledge has greater accuracy, i.e. simplicity. Aristotle goes on to define simplicity in terms of abstraction of magnitude, movement, and, in particular, irregular motion.

> A science which abstracts from the magnitude of things is more precise if it abstracts from movement, but if it take account of movement it is most precise if it deals with the primary movements, for this is the simplest (*haploustatê*), and of this again uniform movement is the simplest form (*Met.* XIII.3, 1078a10-14).[111]

The object of study may be 'without magnitude' (cf. *Met.* 1025b26-1026a). The object of study may be with or 'without motion.' The object can be not only motionless, but it may have uniform motion of the kind that is primary. What sort of objects does Aristotle

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[110] This claim may be related to Plato's remarks about purification in the *Philebus* (55e).

[111] αἰ ὅσῳ δὴ ἂν περὶ προτέρων τῷ λόγῳ καὶ ἁπλουστέρων, τοσούτῳ μᾶλλον ἔχει τὸ ἀκριβές· τοῦτο δὲ τὸ ἁπλοῦν ἐστίν, ὥστε ἄνευ τε μεγέθους μᾶλλον ἢ μετὰ μεγέθους, καὶ μάλιστα ἄνευ κινήσεως, ἐὰν δὲ κίνησιν, μάλιστα τὴν πρώτην· ἁπλουστάτη γάρ, καὶ ταύτης ἡ ὁμαλή. ὁ δ' αὐτὸς λόγος καὶ περὶ ἁρμονικῆς καὶ ὀπτικῆς· οὐδετέρα γὰρ ᾗ ὄψις ἢ ᾗ φωνὴ θεωρεῖ, ἀλλ' ᾗ γραμμαὶ καὶ ἀριθ– τὸ ψεῦδος. ἄριστα δ' ἂν οὕτω θεωρηθείη ἕκαστον, εἴ τις τὸ μὴ κεχωρισμένον θείη χωρίσας, ὅπερ ὁ ἀριθμητικὸς ποιεῖ καὶ ὁ γεωμέτρης. ἓν μὲν γὰρ καὶ ἀδιαίρετον ὁ ἄνθρωπος ᾗ ἄνθρωπος· ὁ δ' ἔθετο ἓν ἀδιαίρετον, εἶτ' ἐθεώρησεν εἴ τι τῷ ἀνθρώπῳ συμβέβηκεν ᾗ ἀδιαίρετος. ὁ δὲ γεωμέτρης οὔθ' ᾗ ἄνθρωπος οὔθ' ᾗ ἀδιαίρετος ἀλλ' ᾗ στερεόν.

have in mind? Mathematical objects serve as one likely category. As items of thought, mathematical objects lack dimension and motion. But Aristotle also has in mind items like planets. They are in motion, but in regular or circular motion. Hence, the study of the planets (e.g. through astronomy) is more exact than the study of physics since the latter studies objects that exhibit irregular motion.[112]

Aristotle also claims that an exact science posits relatively few additional principles. The meaning here can be clarified by considering a distinction between mixed and pure definitions. In *Metaphysics* 1030b15, Aristotle refers to the distinction between mixed (*ek prosthesiôs*) and pure definitions (*ex aphaireseôs*) (cf. *Cael*. 299a17). A mixed definition is one in which the definiendum cannot be defined without reference to the special sort of thing in which they inhere. So, for example, snubness can be only in a nose. But whiteness can be in a man, a plant, an animal, etc. Hence, 'snubness' will yield a mixed definition, while 'whiteness' will not (*Met.* VII.5, 1030b14-27; cf. *Cael*. 299a17). 'Mixed' here means something like 'parasitical,' for there can be no concept of snubness without the prior concept of a nose. Similarly, there can be no science of geometry without the prior notion of number. In hypothesizing that there is magnitude – or numerous spatial units – geometry presupposes that there is number. Yet, number is hypothesized by arithmetic. Hence, geometry is parasitic on the arithmetic. Again, we see that geometry is less exact than arithmetic.

Before moving on to the next topic, it is important to see that an exact science is not just one category of science types among others for Aristotle. Rather, it is the quintessential form that science takes. The best sciences or the most scientific sciences

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[112] For discussion, see Ross, *Commentary on the Metaphysics,* 417.

are the exact sciences. For the most exact sciences are those that deal, most of all, with the first principles (*Met.* I.2, 982a25). The science that deals with the first principles is the most knowable (982b1-2), and the most knowable thing is the knowledge pursued for its own sake (982a30-1). While the science that studies first principles is therefore the least necessary, it is also the best (983a10-11). To the fullest extent, this science is first philosophy, or theology.

3 *Politikê* as an Inexact Science

We have seen that Aristotle uses the term *akribês* to capture the notion of an exact science – namely, a science which focuses on first principles and studies phenomena in such a way as to abstract from them as many qualities as possible. But Aristotle also uses the term to reference other, related ideas as well.[113]

First, Aristotle sometimes writes as if cognitive states were inexact or exact. For example, the states associated with perception are relatively inexact, while those associated with *epistêmê* and reason are more exact. Similarly, Aristotle claims that there can be greater exactness in theoretical statements than in the statements of perceptual facts. "We ought not to require the same accuracy (*akribeian*) in theory as in the facts given by perception" (*Pol.* 1328a20). In the *Nicomachean Ethics,* Aristotle defines wisdom as the "most finished" (*akribestaton*) kind of knowledge (*NE* VI.7, 1141a 16).

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[113] For the association between non-deliberative sciences and exact sciences, see *NE* III.3. ("In the case of exact and self contained sciences, there is no deliberation" (*NE* III.3, 1112b1 ff.).) For a discussion of the various kinds of measurement, see *Met.* X. 1, 1053a. For more on the idea that mathematics is the most exact science, see *Met.* 995a; *De Caelo,* 306a27. For the use of *akribês* as acuteness in sense perception, see e.g. *De Anima,* 421a20; *History of Animals* 494b16. For the idea that excellence is more exact than any art, see *NE* II.6, 1106b14. For more on the ways that the sciences and their objects are distinct – e.g. mathematical versus natural science – see *Met.* 1025b7, 1064a7.

Finally, in the *Posterior Analytics,* Aristotle claims that *nous* is the most precise (*akribestaton*) state of understanding, for it exceeds *epistêmê* in accuracy and truth (*Post An* II.19, 100b8).

Exactness also refers to written accounts (*logoi*) (*HA* 753b14-8; *Pr. A,* 46a29; 24b14; *EE* II.10, 1227a11; *NE* 1174b2; *Topics* 153a11; cf. *Phy.* I.9, 192a35). Consider the following passage.

> The whole account of matters of conduct must be given in outline (*tupôi*) and not precisely (*akribôs*), as we said at the very beginning that the accounts (*logoi*) we demand must be in accordance with the subject matter; matters concerned with conduct and questions of what is good for us have no fixity, any more than matters of health. The general account being of this nature (*katholou logou*), the account of particular cases (*ho peri ton kath hekasta*) is yet more lacking in exactness (*t' akribês*); for they do not fall under any art or set of precepts, but the agents themselves must in each case consider what is appropriate to the occasion, as happens also in the art of medicine or of navigation (NE II. 2, 1104a1-8). [114]

Two accounts (*logoi*) are mentioned here: (1) the 'general account'(*katholou logou*) and (2) the account of particular cases (*ho peri ton kath heksta logos*). Aristotle claims that neither is exact (1104a6-7). The first account's lack of exactness explains the second account's lack of exactness: "the account of particulars is even less exact because the account of the universals is inexact" (1104a5-7). *Logos,* notoriously, can mean many things (e.g. speech, the written word). However, the use in this passage seems to refer to the account of politics itself i.e. the lecture addressed to those who are "hearing" or learning about political science (I.4, 1095b5-6).

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[114] ὁ περὶ τῶν πρακτῶν λόγος τύπῳ καὶ οὐκ ἀκριβῶς ὀφείλει λέγεσθαι, ὥσπερ καὶ κατ' ἀρχὰς εἴπομεν ὅτι κατὰ τὴν ὕλην οἱ λόγοι ἀπαιτητέοι· τὰ δ' ἐν ταῖς πράξεσι καὶ τὰ συμφέροντα οὐδὲν ἑστηκὸς ἔχει, ὥσπερ οὐδὲ τὰ ὑγιεινά. τοιούτου δ' ὄντος τοῦ καθόλου λόγου, ἔτι μᾶλλον ὁ περὶ τῶν καθ' ἕκαστα λόγος οὐκ ἔχει τἀκριβές· οὔτε γὰρ ὑπὸ τέχνην οὔθ' ὑπὸ παραγγελίαν οὐδεμίαν πίπτει, δεῖ δ' αὐτοὺς ἀεὶ τοὺς πράττοντας τὰ πρὸς τὸν καιρὸν σκοπεῖν, ὥσπερ καὶ ἐπὶ τῆς ἰατρικῆς ἔχει καὶ τῆς κυβερνητικῆς.

Such passages strike me as significant because they suggest that Aristotle is referring to his own account. I refer to this literary phenomenon as *authorial self-reference*.[115] By this, I mean the author's reference to himself as a writer and the reference to his work as a written work. There are several common examples of authorial self-reference – first, the case in which the author directs a reader to some other portion of the text. The author may say, for example: "as I wrote earlier" or "as I explain elsewhere." Another example is the case in which the author explains that or why something is *not* addressed. The author may say: "this is not worth writing about." Finally, the author may refer to *his* achievement in writing something. For example, he may write: my predecessors have neglected the issue, but in writing this, I will ameliorate the situation. Such phrases foreground the author's conception of himself as a writer and his conception of his work as a *written* work.

An important case of authorial self-reference, insofar as our analysis of Aristotle is concerned, is that in which the author claims that the account given in writing is *schematic*. By 'schematic,' I mean that the account is unfinished, lacking in detail, or leaving out some information. For example, in giving directions, one might say: "go straight for about a mile until you see a McDonalds; then, turn right." The phrase "about a mile" is not exact. One could make it exact by saying: "1.2 miles." Consider a second example: the dictum that you should return what you've borrowed. What if you have borrowed a knife from a person who has turned out to be a maniac? Should you return it?

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[115] For a discussion of authorial self-reference, see Lloyd 1987. Lloyd focuses on the tendency of Hippocratic writers to distinguish themselves from the predecessors in the proem of a treatise with the use of the first person pronoun. For a similar treatment of the issue, see Dean-Jones 2003, 113-4.

No, but in other cases, you should return what you've borrowed. What other cases? It would be an arduous task to discuss them all. So, we keep the simple dictum: return what you have borrowed. But we recognize that the dictum, as stated, leaves out information. So, by 'schematic,' I mean to imply nothing about the nature of the information in question and whether it could, in principle, be set out. That is, it could, in principle, be written down, but it may take too long to do so.

We can find references to schematic accounts in the Hippocratic Corpus. These are passages that make reference to the wealth of cases to discuss and the prospect of writing about all these cases. Time and efficiency do not permit that all the cases can be addressed. Therefore, the reader must make inferences based on the material provided. Consider, for example, *On the Sacred Disease,* the Hippocratic treatise dealing with epilepsy. The author claims that the manifestations of epilepsy are too numerous to describe. "Many other instances, of various kinds [of cases of epilepsy], could be given, but time does not permit us to speak of each separately" (*On the Sacred Disease*, 1).[116] He therefore discusses only a few such cases, and these are supposed to be representative of the many.

Similarly, the author of *On Joints* reports that he can give only a schematic account of the wiring or threading together of a broken jaw. The reader must form a general sense of the procedure from the text, with the understanding that he will only truly learn how the operation works when he performs it. The text explains that, if the jaw is broken across completely, one should adjust or realign the jaw, and then the teeth should be fastened together. To do this properly, the teeth must be fastened together with

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[116] Consider also and *On Breaths,* 15 and *On Fractures,* 31.

a thread. While a gold thread is best, a linen thread is adequate. The thread should be tied at the ends and left on the jaw until the bone heals (32-3). The reader must operate from the description of the operation in these two chapters. The author owns that a more detailed description might be wanted, but that it would be impossible to give. "It is not easy to give exact (*atrekês*) and complete details of an operation in writing (*en graphê*); for the reader should form an outline (*hupotupeisthai*) of it from the description (*ek tôn gegrammenôn*)" (*On Joints,* 33).[117] Presumably, the meaning is that operations, in particular, are difficult to describe fully and a manual about operations can give only an incomplete account.

This foray into the idea of a schematic account helps us to read the passage from the *Nicomachean Ethics* above. When Aristotle claims that the account of the universals and particulars lacks exactness (1104a6-7), he means that the accounts in question are schematic. Indeed, the account of the particulars is more so. Recall that Aristotle explains the lack of exactness in the account of particulars by saying that the particulars "do not fall under any art or set of precepts, but the agents themselves must in each case consider what is appropriate to the occasion, as happens also in the art of medicine or of navigation." This explanation bears a great deal of resemblance to the idea that, when following dictums, one takes the dictum to be a *general* rule – i.e. one that needs to be thought about in light of a specific situation. Thus, you generally return what you have borrowed. But if you have borrowed a certain kind of thing (a weapon) from a certain kind of person (bloodthirsty), it may be best not to return what you have borrowed.

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[117] See Littré 1839-1861,vol. 4, 71-2.

We have just seen that exactness is a term of description for *accounts.* Let us now consider the various reasons why an account might not be exact. Aristotle has two answers to this question. First, the precision of the account must be consistent with the aim of the account. If the aim of the account is practical, less precision is demanded. Second, the precision of the account must be consistent with the subject matter of the account. If the subject matter is inherently variable – as the subject matter of politics is – then we can expect that the science which studies this subject matter is less exact than other sciences. Aristotle states:

> We must also remember what has been said before, and not look for precision in all things alike; but in each class of things such precision as accords with the subject matter and so much as is appropriate to the inquiry. For a carpenter and a geometer look for right angles in different ways; the former does so insofar as the right angle is useful for his work, while the latter inquires what it is or what sort of thing it is (*ti esti*) for he is a spectator [118] of the truth. We must act in the same way, then, in all other matters as well, that our main task may not be subordinated to minor questions. Nor must we demand the cause in all matters alike; it is enough in some cases that the fact be well established, as in the case of the first principles (*NE* I.7, 1098a20-b2). [119]

Let us first consider the claim that the precision of the account should be consistent with the aims of the inquiry.

Accounts take their form based on their various purposes. That is, the same information can be explicated in different ways or adjusted to different purposes. For

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[118] *Rep.* 475e.

[119] Περιγεγράφθω μὲν οὖν τἀγαθὸν ταύτῃ· δεῖ γὰρ ἴσως ὑποτυπῶσαι πρῶτον, εἶθ᾽ ὕστερον ἀναγράψαι….μεμνῆσθαι δὲ καὶ τῶν προειρημένων χρή, καὶ τὴν ἀκρίβειαν μὴ ὁμοίως ἐν ἅπασιν ἐπιζητεῖν, ἀλλ᾽ ἐν ἑκάστοις κατὰ τὴν ὑποκειμένην ὕλην καὶ ἐπὶ τοσοῦτον ἐφ᾽ ὅσον᾽ οἰκεῖον τῇ μεθόδῳ.καὶ γὰρ τέκτων καὶ γεωμέτρης διαφερόντως ἐπιζητοῦσι τὴν ὀρθήν· ὁ μὲν γὰρ ἐφ᾽ ὅσον χρησίμη πρὸς τὸ ἔργον, ὁ δὲ τί ἐστιν ἢ ποῖόν τι· θεατὴς γὰρ τἀληθοῦς. τὸν αὐτὸν δὴ τρόπον καὶ ἐν τοῖς ἄλλοις ποιητέον, ὅπως μὴ τὰ πάρεργα τῶν ἔργων πλείω γίνηται. οὐκ ἀπαιτητέον δ᾽ οὐδὲ τὴν αἰτίαν ἐν ἅπασιν ὁμοίως, ἀλλ᾽ ἱκανὸν ἔν τισι τὸ ὅτι δειχθῆναι καλῶς, οἷον καὶ περὶ τὰς ἀρχάς.

example, one might present Aristotle's ethics in the form of an introductory book for undergraduates whom one hoped to improve morally through the presentation. By contrast, one might present the same information, but in serious scholarly monograph, where there is no hope of moral improvement. Consider another example. Suppose that we were charged with giving a lesson about the right angle. If our audience were composed of builders or carpenters, we should present information that is useful with respect to their work. But if our audience were composed of geometers, we would aim for a very different kind of account. Namely, we would tell the geometers 'what right angle is' and 'what sort of thing it is' (*ho de ti estin ê poion ti*).

One might think that the two types of accounts introduced in the examples map onto Aristotle's distinction between the practical or theoretical sciences, but I want to keep the notion of an account and its aim distinct from the notion of a science and its aim. The examples given above help us see how we can keep these apart. One can give a practical account of the nature of right angles to builders. But one can also give a theoretical account of the right angle to geometers. Similarly, one gives a theoretical account of a practical science when one writes a scholarly monograph. But one gives a practical account of a practical science when one addresses undergraduates with the hope of improving them morally. The contents of a practical science can be relayed with either a practical or theoretical aim in mind. It depends on the audience and the purpose of giving the account in the first place.

If the *Nicomachean Ethics* were to fall into the category of practical or theoretical account it is likely that Aristotle regards it as an account of the builder's sort – namely, one that imparts information in a way that is useful for the work, for he states on

numerous occasions that the purpose of the *Ethics* is practical (*NE* II.2, 1103b26-9; *EE* I.5, 1216b16-25). Though, this is not to say that it falls squarely in the same camp as the builder's account, since the aim of politics is good action (*eupraxia*), rather than products such as speeches, health or houses. That is, a distinction should be drawn between political science, which has *eupraxia* as its aim, and productive sciences such as rhetoric, medicine and housebuilding, which all aim at the production of things – speeches, health and houses, respectively. When I use 'practical' from here on, I shall mean practical in that former sense in which political science is practical.

How is information presented in the practical versus the theoretical accounts? The *Eudemian Ethics* provides two important points of guidance about this point – more than that offered by the *Nicomachean Ethics.* As we learn from the *Eudemian Ethics,* first of all, knowledge of the nature of virtue is insufficient to make one good. While it may be the case that one becomes a geometer upon learning geometry, one does not become virtuous upon learning about virtue (*EE* I.5, 1216b4-10). There is a disanalogy between the theoretical and practical sciences in this regard. While it is true of the theoretical sciences that one acquires the relevant virtue in learning about the associated definitions, it is not true of practical disciplines. As Aristotle claims, "we do not wish to know what bravery is but to be brave, nor what justice is but to be just…." (b21-23).[120]

While the practical and theoretical accounts are different in this last respect, the accounts (*logoi*) in practical and scientific inquiries alike should be given 'philosophically' (*philosophôs*)(*EE* I.6, 1216b35-6). By 'philosophical,' I mean that the

[120] οὐ γὰρ εἰδέναι βουλόμεθα τί ἐστιν ἀνδρεία, ἀλλ᾽ εἶναι ἀνδρεῖοι, οὐδέ τί ἐστι δικαιοσύνη, ἀλλ᾽ εἶναι δίκαιοι

inquiry must always provide an explanation for phenomena. That is, it should provide not merely the facts, or what is apparent, but the 'because' (*dia ti*, b37-8). As mentioned earlier in the chapter, the 'because' refers to the direct and prior cause of a phenomena. For example, the reason for the planets' failure to twinkle is the nearness of the planets. The planets do not twinkle *because* they are near. But if it is true that both practical and theoretical accounts must be philosophical, we can draw the interesting conclusion that the practical account need not be intellectually or scientifically uninteresting – quite the opposite. Aristotle means that, in order to be practically effective, one must know the 'because.'[121]

But what does this mean for Aristotle's claim that the precision of the account must be consistent with the aim of the account? For one, it does not mean that the practical account can neglect explanations. But what type of explanation does Aristotle have in mind? Will we find the same reasons in a practical account that we find in a theoretical account? I suggest that the *Eudemian Ethics* passage we have been considering provides us with a clue. The context of the *Eudemian Ethics* passage shows that Aristotle's worry is about *types* of arguments. He aims to show that not all points

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[121] There are a number of passages which seem to be in conflict with this point. First, note that the *EE* prologue passage which may seem to suggest that Aristotle draws a stronger distinction between theoretical and practical sciences, such that the latter have *no need* of theoretical knowledge (*EE* I.1, 1214a8-14). A second apparent conflict is more easily dispatched. Aristotle claims that the starting points (*archai*) in ethics are the facts (*NE* I.4, 1095b7). He also claims that politics is concerned with the τὸ ὅτι. Both passages thus seem to suggest that politics is *not* concerned with the *di hoti.* But I suggest that we read both passages as referring to *starting points* (*archai*), rather than arguments from starting points. It is perfectly admissible that the starting points of a science be *to hoti,* since they are supposed to be indemonstrable. The question is about the arguments that follow from those starting points. Are there any such arguments? The *EE* I.5 passage suggests that there are in practical accounts.

must be argued for with a reasoning argument (*meta logou*, 1217a2). "For there are some who, though thinking it to be the mark of a philosopher to mark no arbitrary statement but always to give a reason, often unaware give reasons foreign to the subject and idle" (1216b40-1217a3).[122] In some cases, the argument from perception (*tois phainomenois*) is sufficient (a13).

In saying this, Aristotle probably means the following. First, some make the false assumption that the philosophical method the giving of rational arguments for *all* claims. Hence, Aristotle claims that there are some who think that it is the mark of a philosopher not to speak in a 'likely way' but always to give an argument (*legein alla meta logou*, 1217a1-2). But some arguments may be based on perception. Indeed, some arguments *should* be based on perception, rather than reason. For both the argument from perception and from reason may end up with the same conclusion. But the argument from reason will have reached the conclusion in the wrong way.

Aristotle may be making the very sound point that arguing for some things in ethics – though one may be able to present a good argument and though ones argument may be true – is inappropriate and shows a lack of sense. Philosophers are quite guilty of this. For example, suppose some philosophers are talking about 'love,' and one claims: "I cannot say that I am in love until I know the definition of love." This is true, in a sense. One cannot truthfully utter "I am in love" without knowing what she means. However, this also represents an overextension of the theoretical stance. There is certainly a sense in which one can fall in love and truthfully utter "I am in love," without ever knowing the definition of love. Indeed, Aristotle's point seems to be that the person

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[122] οὐ δεῖ πάντα τοῖς διὰ τῶν λόγων, ἀλλὰ πολλάκις μᾶλλον τοῖς φαινομένοις

who insists on having the definition has missed something. As he would say, the person is uneducated or uncultured (1217a8).

If practical accounts rest on facts of perception, as the *Eudemian Ethics* passage suggests, then we have an explanation for the relative inexactness of practical accounts. Recall that Aristotle regards some cognitive states as being less exact than others. For example, states of perception are less exact than states of knowledge. Recall the following claim: "we ought not to require the same accuracy (*akribeian*) in theory (*epi tôn logôn*) as in the facts given by perception (*tôn gignomenôn dia tês aisthêiôs*) (*Pol.* 1328a20). I leave it to another paper to determine what Aristotle meant in claiming that the facts of perception are less exact than those associated with *logos.*

4 *Diaphora* and *Akribeia*

Now that we have considered one explanation for the lack of precision in a philosophical account, let us consider a second explanation for the lack of precision. As Aristotle claims, precision should be sought in accord with the subject matter (*hupokeimenên hulên*) (1098a a27-29, 1104a3, 1094b13). So, in order to establish why political science might be lacking in exactness, we should inquire about its subject matter. How does Aristotle mean to characterize the subject matter of political science such that it makes political science inexact?

According to some commentators, the fundamental explanatory features here are matter (*hulê*) and 'for the most part.' Matter explains why political phenomena are only 'for the most part' – the latter being a locution for the idea of (a) statistical frequency or

(b) natural necessity.[123] Generalizations, and therefore arguments, in politics hold only *hos epi polu* because they concern entities that are enmattered. Numerous passages throughout the corpus support this point (e.g. *GA* 763b25 ff.; *Met* 1025b26 ff.). Recall that we have some evidence that Aristotle viewed enmattered-ness as an obstacle to exact science. For example, in the *Metaphysics,* he claims that the accuracy (*akribeia*) of mathematics can be achieved only in "the case of things which have no matter" (*Meta,* II.3, 995a). Similarly, in the *Meteorology,* he argues that disorganized and relatively formless kinds of matter – e.g. flesh and fire – are especially difficult to define accurately (IV.12, 390a19).

Granted, the fact that the objects of political science are enmattered explains why political science is not exact. But it is not the whole explanation. We ought also to pay attention to the idea of *diaphora,* or variation. *Diaphora,* in the sense I will describe here, is variation, and in particular, the individuating features of an entity. This can be represented as variation along a set of categories: what, where, why, whom, to what extent, etc. I would like to argue that *diaphora* too, can explain why political science lacks precision. That is, political science seems to be inexact in that it depends on *variation* (*diaphora*) – i.e. individuating features of a person's condition and environment.

First, let me distinguish the use of *diaphora* above from the more conventional notion of *diaphora* that Aristotle uses in his logical works. Aristotle uses the term *diaphora* in a technical sense, where it means the distinguishing feature of a species (i.e. *differentia*). For example, the human being is an animal, but the feature that distinguishes

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[123] For discussion of *hos epi to polu,* see Reeve 1995, 17-22.

it from other animals is its ability to reason. Any definition consists of the genus plus a differentia. Hence, in the *History of Animals,* Aristotle writes:

> Variations (*diaphora*) are manifested in modes of subsistence, in habits, and in actions as follows: some animals live in water and others on land. And of those that live in water some do so in one way, and some in another: that is to say, some live and feed in the water, take in and emit water, and cannot live if deprived of water, as is the case with the great majority of fishes; others get their food and spend their days in the water, but do not take in water but air, nor do they bring forth in the water…. (*Historia Animalium,* I.1, 487a14-22; cf. *Met* X.3, 1054b-1055a; cf. *Met.* VII.12).

In this passage, Aristotle explains that an animal may be analyzed according to certain categories, including: subsistence, habits, actions, and habitat.

There is another way in which Aristotle uses the term *diaphora,* where it means, in a related but more general sense, 'individuating feature.' What I have in mind by 'individuating feature' can be illustrated by the following example. Suppose that you are given a loan. In general, we tend to think that one ought to pay back a loan. Your intention, in keeping with the norm, is to pay back the loan. But what if you have a conflicting duty? Suppose, for example, that your father is about to lose possession of his house to mortgagers, and you are in the position to help him regain possession of his house through supplying some of your loan on his behalf. Would it be appropriate to pay back the loan speedily? The decision presents some difficultly because one wants to fulfill both obligations. But in the end, it is probably best to postpone payment of the loan. The right thing to do is to use the money to fix the problem for your father.

There are two things to notice about this scenario. First, when deliberating about situations that present conflicting duties, one considers multiple claims: duties to lender, duties to the father and duties to oneself. One needs to ask: what duties do I have here?

To whom do I have the duty? How can the claims of these duties be compared? Second and obviously, decision-making is difficult because one has multiple and possibly conflicting obligations to weigh against one another.

We are now in a position to see what *diaphora* as 'individuating feature' may mean. I have in mind the idea that a situation will have particular features that a decision maker must take into account. The decision maker in the story above, for example, must take into: the duty to repay the loan, the person to whom the duty is owed, the amount of the loan, the circumstances under which the loan was given, and so on.

Aristotle uses *diaphora* in this sense in the following passage from the *Nicomachean Ethics*:

> Surely all questions are hard to decide with precision (*akribôs*). For they admit of many variations (*diaphoras*) of all sorts in respect both of the magnitude of the service and of its nobility and necessity.

He explains the case in the following manner:

> But that we should not give the preference in all things to the same person is plain enough; and we must for the most part (*hôs epi to polu*) return benefits rather than oblige friends, as we must pay back a loan to a creditor rather than make one to a friend. But perhaps even this is not always true; e.g. should a man who has been ransomed out of the hands of brigands ransom his ransomer in return, whoever he may be (or pay him if he has not been captured but requests payment), or should be ransom his father? It would seem that he should ransom his father in preference even to himself. As we have said, then, generally (*katholou*) the debt should be paid, but if the gift is exceedingly noble or exceedingly necessary, one should defer to these considerations (*NE* IX.2, 1164b28-1165a4; cf. *EE* 1244a).

In this passage, Aristotle explains that, as a general rule (*katholou*), one ought to repay one's debts. However, there are cases in which one has a conflicting duty, such that paying one's debts is *not* the thing to do. For example, suppose that your father were abducted and his captors demanded a ransom. Would you, having earlier secured a loan

from the bank, opt to pay the bank back rather than using the loan to pay the debt? Certainly you would not. Hence, there are cases in which paying back loans is not the right thing to do, even though it is generally (*katholou*) the right thing to do.

What does it mean to claim that there are variations (*diaphorai*) in terms of magnitude of the service, nobility and necessity? Stewart suggests that the reference to *kalon* and *anankê* stands for the claim that the moral ideal versus that of material necessity. The final lines of the passage show that the gift (i.e. the loaned amount) may be more or less noble. It is the noble thing to do, for example, to ransom one's father before oneself. Similarly, one's circumstances may be more or less dire. It may not be possible to pay back the loan immediately, if the situation is dire enough. It is in this respect that the loan can present questions of nobility or necessity.

The lesson of such cases is twofold. First, it is not possible to state unequivocally whether a loan ought always to be repaid. In general, it is not possible to achieve certainty about any of these rules, where "feelings and actions" are concerned: "discussions about feelings and actions have just as much definiteness as their subject matter (*NE* IX. 2, 1165a5-14). This is a reprise of Aristotle's earlier methodological remarks (1094b11-27; 1098a26-33). Second, the reason for the difficulty, according to this passage, is *diaphora,* or the fact of particular and individuating features of a case. As Aristotle goes on to explain in more detail, these features take the form of questions about the person to whom one repays the loan or gives the gift:

> That we should not make the same return to every one, nor give a father the preference in everything, as one does not sacrifice everything to Zeus, is plain enough; but since we ought to render different things to parents, brothers, comrades, and benefactors, we ought to render to each class what is appropriate and becoming (*NE* IX.2, 1165a14-7; cf. *NE* III.1, 1110a27-35).

We should not avoid the task of giving an account in each case, according to Aristotle, but do the best we can (1165a35).

I want to suggest that *diaphora* in this second and looser sense as 'individuating feature' explains Aristotle's remark that the subject matter of political science makes it unapt for exact science. *Diaphorai* are those variations between paying a father's ransom versus paying a friend's ransom (to whom?), between paying back a generous loan versus a smaller loan (what quantity?), and so on. These sorts of things must be brought to the table when deliberating about what to do. I believe that Aristotle thought of these features as the very features which prompt him to say that matters in political science hold only 'for the most part.' In the next chapter, I develop this idea in more detail, explaining what those individuating features of a person's condition and environment might be and the way in which we can find the same account of deliberation and *diaphora* in the Hippocratic Corpus.

We have now seen ways to explain why an account of politics might be inexact. First, the account has a practical aim, rather than a theoretical aim – namely, to make people good. The result is that less precision is required from the account. But this lack of precision should not be envisioned as a relaxing of explanatory standards. That is, even the person giving the practical account must provide a 'because' to back up his claims. However, the explanation in question may rely upon facts of perception, rather than rational arguments. Since the former are less exact than the latter, Aristotle will claim that the practical account is relatively inexact.

Second, the account of politics is inexact because of its subject matter. Most commentators explain this point by appealing to matter (*hulê*) – i.e. enmattered objects are prone to variation and the breaking of patterns determined by form. While I do not think that this is incorrect, I believe it is not the entire story. Aristotle also appeals to the notion of *diaphora* to characterize the nature of the subject matter of politics and the sense in which politics is inexact. *Diaphora* refers to the variations or individuating features of a situation that are introduced into the deliberations of agents. They include matters such as: to whom? How much? To what extent? How long? And so on.

5 Terminology for Inexactness

With this explanation of the inexactness of politics in hand, we can move on to consider briefly the various artful ways of communicating the fact that the account in question is not exact. One such idea is that of the outline, or *tupos.* For example, Aristotle claims that the "whole account of matters of conduct" must be given in outline (*tupôi*) and not precisely (*akribôs*)." *Tupos* originally referred to a 'blow': hence, its related meanings: impression, mould, engaving, or sculpture. For example, Aeschylus uses the term to describe the appearance of Argonaut women in *Suppliant Women.* They appear to have the "Cyprian impress" that craftsman give to their images of Cyprian women. Similarly, Plato sometimes refers to the idea of the soul as being a mould on which a stamp can be imprinted (*Th.* 191d, *Rep.* 377b). [124]

[124] The references to '*tupos,*' in particular, are numerous. Aristotle uses the term in the dative: 'in outline': *De Anima,* 413a9, 416b30, 424a16. *Politics,* 1276b19; 1302a19; 1323a10; 1335b5. *Topics* 101a18, 101a22, 103a1, a7; 105b19; The uses in the *Nicomachean Ethics* are especially numerous (at eleven). In some cases, Aristotle means 'for example' (*tupôi,* Cat. I.1, 1b28; I.10, 11b20).

Aristotle uses *tupos* to refer to an outline. Because detail would be contrary to the purpose of the inquiry, an outline of the idea is sufficient. Hence, in the *Topics,* Aristotle writes that only an outline of deduction is needed. He contrasts an outline of the definition with a more precise definition. The outline, according to Aristotle, is sufficient for our ability to understand what follows.

> The foregoing must stand for an outline (*tupôi*) of the species of deduction. In general, in regard both to all that we have already discussed and to those which we shall discuss later, we may remark that that amount of distinction between them may suffice, because it is not our purpose to give a precise definition (*akribê logon*) of any of them; we merely want to describe them in outline (*tupôi*): we consider it quite enough from the point of view of the line of inquiry before us to be able to recognize each of them in some sort of way (*Top.* I.1, 101a18-24).

The purpose of the treatise is to get at the nature of *dialectical* deduction (110a23). Hence, the discussion of deduction, at large, takes one away from the purpose of the inquiry. With that in mind, Aristotle defines deduction; the two kinds of deduction, demonstration and dialectical deduction; and fallacies briefly (100a25-101a17). Each is the subject of its own inquiry in other treatises. *Epistêmê* is the subject of *Prior Analytics* and of *Posterior Analytics,* insofar as they are treated as one work (*Pr. An.* I.1, 24a10-11). Deduction is the subject of the *Prior Analytics.* Aristotle claims that it must be dealt with before proceeding to a discussion of demonstration, since demonstration is a kind of deduction (*Pr An,* I.4, 25b27-31). Demonstration is dealt with in the *Posterior Analytics. Fallacies* are treated in *Sophistical Refutations.* Of course, dialectical demonstration is the subject of the *Topics.* Aristotle's claim in the passage, then, can be read as the point that, in effect, 'this is the subject of another work.'

A second reason for giving an outline is to offer a summary of the text to come.

For example, Aristotle writes in an introductory section of *Historia Animalium* that his aim, so far, has been only to convey a summary of the topics that will be dealt with in the rest of the treatise:

> These preceding statements, then, have been put forward in outline (*en tupôi*), as a kind of foretaste (*geumatos*) concerning the number and sorts of things we will consider (*theorein*), because we will speak with more precision (*akribeias*) about them later, so that, to begin with, the variations (*diaphora*) and common properties (*sumbebekota*) will come into view (my translation) (*Historia Animalium,* I.6, 491a7-10).

These sorts of remarks are also often accompanied by a promissory note. The outline will be filled in later in greater detail (*Historia Animalium,* 487a12, 491a8), by others (*NE* I.7, 1098a25), or in a more appropriate place (*De An* II.6, 416b30).

A term closely related to *tupos* in its use is *graphos* or *perigraphos.* Both *graphos* and *perigraphos* have the connotation 'picture' or 'sketch.' Aristotle uses *graphos* and *perigraphos* to capture the idea of a sketch that can be filled in or made more detailed. Hence, he writes:

> Let this service as an outline (*perigraphos*) of the good, for we must presumably first sketch (*hupotupesthai*) it roughly, and then later fill in the details (*anagrapsai*). But it would seem that anyone is capable of carrying on and articulating what has once been well outlined (*perigraphos*)….(*NE* I.7, 1098a20-4; cf. 1113b21, 1113a15-6).

Similarly, in *Generation of Animals,* Aristotle explains the order in which different parts of the body are generated in an embryo using *perigraphos* as a metaphor. He claims that the upper half of the body develops first, then the lower half. Each organ, meanwhile, takes on the inchoate shape it will more definitely adopt later. Aristotle compares this process with that of the artist who first draws his main lines, only later filling in the colors.

> All the parts are first marked out in their outlines (*perigraphais*) and acquire later on their color and softness or hardness, exactly as if nature were a painter producing a work of art, for painters, too, first sketch (*hupograpsantes*) in the animal with lines and only after than put in the colors (*Generation of Animals,* II. 6, 743b20-22).

A rendition of a thing in broad brushstrokes can be either good or bad, to the artist's purpose or not. It can enhance the important aspects of an image; but it can also obscure important information. Aristotle takes the latter view when he remarks in the *Metaphysics* that an outline of the nature of substance shows that it is not predicated of a subject, but it is that of which other things are predicated (VII.3, 1029a7-8). The account, as it stands, is unclear (1029a8). Moreover, the account in outline form suggests that substance is matter. Further reflection shows that the latter point is unacceptable: substance should be separable and individual, but matter is neither (1029a27-8).

Conclusion

In the previous chapter, we saw that the particularist interpretation of Aristotelian deliberation is based on Aristotle's remarks about inexactness and exactness, the variability in the subject matter of politics (1094a16), the claim that politics hold only 'for the most part' (1094b21), and the idea that principles in politics can be expressed only schematically, or in 'in outline' (e.g. 1094b11-27). According to the particularist, these passages show that, for Aristotle, there are no principles according to which we deliberate about ethical matters.

In this chapter of the dissertation, I have attempted to place Aristotle's remarks about *akribeia* in the context of scientific thought in Aristotle's time. We saw that Aristotle associated exactness with a class of sciences that are characterized by simple and abstract objects of study. We also saw that politics is not an exact science for

Aristotle, and we considered some of the reasons why this might be so. The *Nicomachean Ethics* presents a practical account of politics, and the degree to which precision can be achieved in such an account is small; similarly, the subject matter of politics makes any account of politics imprecise. I suggested that *diaphora,* or variation, might play an important role in explaining why politics is inexact from the perspective of the deliberating agent. This chapter should have shown that the texts to which the particularist appeals take on a different guise when viewed in the context of Aristotle's thoughts about exact science.

In the next chapter, we will see that many of the same ideas and concerns were echoed in the Hippocratic Corpus. Medical writers also claimed that medicine lacks exactness. They insist that claims in medicine also hold 'mostly' and that only schematic accounts of medicine can be given. For medical claims hold 'in summary.' Medical writers also appeal to 'variation' to explain why medicine lacks exactness. These are important parallels between Aristotle's ethics and the Hippocratic Corpus.

Chapter Four

Inexact Science in the Hippocratic Corpus

In the past chapter, we saw that exactness was a scientific ideal for Aristotle and that politics fell short of that ideal. Aristotle expresses this fact by claiming that politics is not 'exact' (*akribês*) and by calling attention to the fact that matters concerning the human good hold 'for the most part' (*hôs epi to polu*). Because politics has these features, one can give only a schematic account of politcs a sketch or 'outline' (*tupos*). To explain why politics is inexact, Aristotle invokes the notion of 'variation' (*diaphora*).

The purpose of the current chapter is to show that important parallels can be drawn between the aforementioned aspects of Aristotle's account of politics and the Hippocratic Corpus. (1) Just as Aristotelian politics is not exact, medicine is also described as lacking exactness. Similarly, (2) just as claims in politics hold 'for the most part' (*hôs epi to polu*), claims in medicine also hold 'mostly' (*hôs epi to pleiston, polu, de polu*. Moreover, medical writers claim – as Aristotle claims about politics that only schematic accounts can be given of empirically messy phenomena, and they express this idea by writing that medical claims hold 'in summary' (*en kephalaioi*). (3) Finally, medical writers also appeal to 'variation' (*diaphora*) to explain inexactness in medicine, just as Aristotle appeals to *diaphora* to explain inexactness in politics.

The first part of the chapter shows that medical writers describe medicine as inexact and that they use several important terms and related ideas to do so: *akribeia* and *atrekeia.* The second part of the chapter charts the use of 'for the most part' claims in the Hippocratic Corpus. It also presents the Hippocratic equivalent of Aristotle's notion of a schematic account of principles – the account given 'in summary' (*en kephalaioi*). In the third section of the chapter, I discuss possible causes of medicine's inexactness – for example, the complexity of cases and the extent to which success with patients depends on the patient's report of his or her own condition. The fourth part of the chapter shows that, just as Aristotle explained inexactness by appeal to 'variation,' medical writers also explained inexactness by appealing to 'variation.'

1 Inexactness in Medicine

Just as Aristotle describes *politikê* as inexact, ancient medicine was also described as lacking in exactness. Moreover, several of the features associated with the inexact science – namely, variation among cases (*diaphora*), phenomena that hold only 'for the most part' (*hôs epi to polu*), and the outline form (*tupos*) are also alluded to in the Hippocratic Corpus.

In the Hippocratic Corpus, *akribês* has much the same meaning it has in Aristotle's works, for it refers to the idea of precision.[125] In some cases, it refers to the idea of a careful diet or therapeutic procedures (*Aphorisms,* I.4, I.5, I.6; *De Aff.* 13; *Vectiarius* 35; *De Fract.* 8, 26). In some cases, it refers to the idea of well defined

[125] For references to *akribeia,* or the lack of it, see: *Prog.* Ch. 20 L II 168.16 ff, *Fract.* Ch. 7, L III 440.2 ff., *Art.* Ch. 69, L IV 286.7 ff, *Morb.* I. ch 16, L VI 170.2 ff. Vict. I ch.2, L VI 470.13 ff. *Vict.* III ch. 67, L VI 592.I ff., 594. I; VM ch. 9-12; *CMG* I, I 41.20.

periodicities in diseases (*De Morbis,* I.2). It is also related to the precision of one's knowledge (*VM* 9.14; 20.13; *De Diatae in Morbis* 6).

According to some treatises of the Hippocratic Corpus, medicine lacks exactness. For example, the author of *Regimen* writes that, to the extent that health consists in a balance between good eating habits and exercise, a balance between eating and exercise cannot be achieved. The balance cannot be struck with 'nicety.'[126] Here, the use of *akribês* is in reference to precise measurement.

> As I have said above, it is impossible to treat of the regimen of men with such a nicety (*akribeian*) as to make the exercises exactly proportionate to the amount of food (III.67.1-5).[127]

The basic methodological principle of regimen is that health can be controlled by diet. But *Regimen* adds successive layers of complication to that principle. The regulation of food, by itself, is insufficient to maintain health (I.2). It is also necessary to take exercise. Food and exercise have opposite effects on the body. The exercise 'uses up' the materials in the body. By contrast, food makes the body grow. Health is constituted by the correct balance between food and exercise (III.69). If food overpowers exercise or if exercise overpowers food, the patient becomes ill. The regimen for restoring the balance involves alterations to diet, to exercise patterns, abstinence, sexual intercourse, vomiting, extra walks and baths. But adjusting the amount of food needed to the amount of exercise taken is not a straightforward matter.

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[126] Compare the notion of balance here to that of '*kata logon*' in *Prohhretic* II.23 (cf. *Prorrhetic* II.1)

[127] Unless otherwise noted, all translations of the works of the Hippocratic Corpus are from the Loeb series, with the exception of *On Ancient Medicine,* for which I use Schiefsky's commentary. The Greek here is: Περὶ δὲ διαίτης ἀνθρωπίνης, ὥσπερ μοι καὶ πρόσθεν εἴρηται, ξυγγράψαι μὲν οὐχ οἷόν τε ἐς ἀκριβείην, ὥστε πρὸς τὸ πλῆθος τοῦ σίτου τὴν ξυμμετρίην ποιέεσθαι τῶν πόνων·

Other passages explain why it is difficult to find the precise balance between food and exercise. As might be expected, finding the balance requires knowledge of the strength of the exercises and the right relationship between food and exercise. But the doctor must know much more than the mere facts about food and exercise – namely, the constitution of the patient (*phusis*), his age, the season of the year, how the wind behaves where the patient lives, and other features of the place in which the patient abides. To discover the precise relation of food and exercise for any individual patient, all of this must be known.

However, there are many obstacles to knowledge of these things, such as variation among patients' constitutions, ages, places, seasons, times of year, and so on. There are also variations among food.

> As I have said above, it is impossible to treat of the regimen of men with such a nicety (*eis akribeiên*) as to make the exercises exactly proportionate to the amount of food. There are many things to prevent this. First, the constitutions of men differ (*hai phuseis tôn anthrôpôn diaphoroi*) dry constitutions, for instance, are more or less dry as compared with themselves or as compared with one another. Similarly, with moist constitutions, or with those of any other kind. Then, the various ages have different needs. Moreover, there are the situations of districts, the shiftings of the winds, the changes of the seasons, and the constitution of the year. Foods themselves exhibit many differenes; the variations between wheat and wheat, wine and wine, and those of the various other articles of diet….(III.1).[128]

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[128] Περὶ δὲ διαίτης ἀνθρωπίνης, ὥσπερ μοι καὶ πρόσθεν εἴρηται, ξυγγράψαι μὲν οὐχ οἷόν τε ἐς ἀκριβείην, ὥστε πρὸς τὸ πλῆθος τοῦ σίτου τὴν ξυμμετρίην ποιέεσθαι τῶν πόνων· πουλλὰ γὰρ τὰ κωλύοντα. Πρῶτον μὲν αἱ φύσιες τῶν ἀνθρώπων διάφοροι ἐοῦσαι· καὶ γὰρ αἱ ξηραὶ αὐταὶ ἑωυτῶν πρὸς αὐτὰς καὶ πρὸς ἄλλα μᾶλλον καὶ ἧσσον ξηραὶ, καὶ ὑγραὶ ὡσαύτως, καὶ αἱ ἄλλαι πᾶσαι· ἔπειτα αἱ ἡλικίαι οὐ τῶν αὐτῶν δεόμεναι· ἔτι δὲ καὶ τῶν χωρίων αἱ θέσιες, καὶ τῶν πνευμάτων αἱ μεταβολαὶ, τῶν τε ὡρέων αἱ μεταστάσιες, καὶ τοῦ ἐνιαυτοῦ αἱ καταστάσιες· αὐτῶν τε τῶν σίτων πολλὴ διαφορά πυροί τε γὰρ πυρῶν καὶ οἶνος οἴνου καὶ τἆλλα ὅσα διαιτεόμεθα, πάντα διάφορα ἐόντα ἀποκωλύει μὴ δυνατὸν εἶναι ἐς ἀκριβείην ξυγγραφῆναι.

The factors discussed here can be grouped conveniently into 'internal' and 'external' obstacles to knowledge. The internal are those that manifest themselves in the patient – for example, age and constitution. The doctor must know whether the patient's constitution is dry or wet. In connection with this point, it is worth mentioning that the patient's constitution might have been difficult to discern, based as it is on internal features – hidden from the doctor's view – of the patient's body. The doctor would thus have relied on signs (*semeia*) to determine a patient's nature. There are also relevant external factors. These include location, winds affecting the location, and season. Finally, there are also external factors related to food and drink. The author claims that food and drinks themselves have many variations.

Variation among all these things, the author concludes, "prevent its being possible to lay down rigidly exact rules in writing" (III.1). In the Greek, '*eis akribeiên*' functions as an adverbial clause modifying the *sungraphanai*. Hence it refers to the *written* account of medicine, rather than the subject matter. The author likely means that, given both the multitude of factors affecting the proper balance of food and exercise for any given patient and the range along which any of these factors might be relevant, all of the rules of determining the balance of food and exercise cannot be written down. For example, once it become imperative to make different versions of a rule for each age – young, adult, elderly – one can see that the number of written rules would grow by three times its original size. When we consider the prospect of doing the same for each of the categories mentioned above – constitution, age, time of year, winds, places – we can see that the number of written rules would grow exponentially.

In addition to *akribês,* the Hippocratic Corpus also uses *atrekês* to express the notion of exactness. The term *atrekês* is closely related to *akribês* but different in that it more frequently refers to accuracy in counting.[129]. Hence, Herodotus uses *atrekês* to capture the idea of an accurate count (*arithmos*) of the people in Xerxes armies (7.187; cf. 7.60). He also uses *atrekês* to refer to the *length* of time needed to make a journey – for example, whether it will take twenty days or twenty-one days (5.54).

In the Hippocratic Corpus, *atrekês* is quite commonly used to express the idea of precise measurements of length of time. For example, in *Prognosis,* the author writes that acute diseases tend to heal in certain intervals of time: typically, intervals of four to twenty days. But, the author writes, it is difficult to calculate the length of time in terms of whole days.

> So in the most acute diseases, keep on adding periods of four days, up to twenty, to find the time when the attacks end. None of them, however, can be exactly (*atrekeôs*) calculated in whole days (*Prog.* 20 L II 168.16; cf. *Fleshes,*19).[130]

This passage refers to crisis theory. This is idea that diseases displayed patterns of development with critical moments at which the disease would change – for better or worse – happening at particular intervals. The passage explains that attacks in acute diseases take place a regular intervals. These intervals may not be given in full days (e.g. four days), but rather in fractions (e.g. four and a half days).

Atrekês is also used in the Hippocratic Corpus to capture the sense in which a time interval could be exact or inexact. For example, in *Fractures,* the author writes that

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[129] For an excellent summary of the distinction between these terms, see Schiefsky 2005, 203-205.

[130] Αὗται μὲν οὖν ἐκ τῶν ὀξυτάτων νουσημάτων διὰ τεσσάρων ἐς τὰς εἴκοσιν ἐκ προσθέσιος τελευτῶσιν. Οὐ δύναται δὲ ὅλῃσιν ἡμέρῃσιν οὐδὲν τουτέων᾽᾽ ἀριθμέεσθαι ἀτρεκέως.

> It takes about thirty days altogether as a rule for the bone of the forearm to unite. But there is nothing exact (*atrekes*) about it, for both constitutions and ages differ (*diaphora*) greatly (*On Fractures.* 7).[131]

According to the author, the forearm typically heals in thirty days. But depending on the constitution of the patient, there may be some variation (*diaphora*). The passage suggests that, if the patient is especially old, for example, a broken arm may take longer to heal. If the patient is young and fit, the arm may heal more quickly. *Atrekês* can also attach to the notion of time intervals, but in the sense of *knowledge* of time intervals. For example, the author of *De Morbis* writes that it is difficult to *know exactly* the period within which a patient will die, even to the extent that it is difficult to determine whether the period will be long or short (*Morb.* I. 16).

2 'For the Most Part' claims in the Hippocratic Corpus

A number of other terms alert us to the presence of uncertainty or inexactness in medicine, including *hôs epi to polu*.[132] So, for example:

(1) Those who have frequent dislocations of the shoulder are usually (*hôs epi to pleiston/ polu*) able to put it in for themselves (*On Joints,* 2).[133]

(2) To sum up – dislocations and slipping of joints vary among themselves in amount and are sometimes much greater, sometimes much less. In cases where the slipping or dislocation is greater, it is, in general (*de polu*) harder to reduce (*On Joints* 59).

Hôs epi to polu is used in these passages to announce the status of a generalization about phenomena. It refers to generalizations to which there may be exceptions. For example,

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[131] Εν τριήκοντα δὲ μάλιστα τῇσι ξυμπάσῃσι κρατύνεται ὅστέα τὰ ἐν τῷ πήχει τὸ ἐπίπαν· ἀτρεκὲς δὲ οὐδέν. μάλα γάρ καὶ φύσις φύσιος, καὶ ἡλικίη ἡλικίης διαφέρει.

[132] See Von Staden 2007.

[133] Οσοισι μὲν οὖν πυκινὰ ἐκπίπτει ὁ ὦμος, ἱκανοὶ ὡς ἐπὶ τὸ πλεῖστον αὐτοὶ σφίσιν αὐτοῖσιν ἐμβάλλειν εἰσίν

consider the claim above that patients who frequently dislocate their shoulders can often (*hôs epi to polu*) put their shoulder joints back into place. The author is saying, in effect: patients *usually* put their shoulders back into place. In some cases – the relatively rare ones – patients are not able to fix their own shoulders. Similarly, consider the claim that the larger the dislocation, the greater the difficulty of replacing the joint. The author means that, in most cases, a greater dislocation makes replacement of the joint more difficult. However, there is the unusual case in which it does not.

Notice that the claims above are probably not merely backwards-looking. That is to say, they do not merely describe what the doctor has observed in the past. Rather, the claims apply to future treatment as well and can be useful in future treatment. For example, it is useful for a doctor to know that patients who frequently dislocate their shoulds are usually able to put them back into place. One might surmise, moreover, that the purpose of noting that something happens 'for the most part' is not to indicate that, in the past, the doctor has noted that, nine times out of ten, patients can replace their own shoulders. Rather, the purpose is to alert the doctor to the reliability of that claim as advice for future treatment. It says, in effect, that if you are the doctor, know that this almost always works, but sometimes it does not.

Hôs epi to polu occurs in other contexts as well. It acts sometimes as description of location. For example,

(1) Even when you expect bones to come away you should use in all such cases the method of separate bandages, as I said, beginning generally (*hôs epi to polu*) with

the middle of the bandage as when an under-bandage (*hupodesmis*) is applied from two heads (*On Fractures,* 32).[134]

(2) Regulate the process with a view to the shape of the wound that it may be as little as possible drawn aside or averted by the bandaging… (*On Fractures,* 32).

In this passage, the author recommends that the bandage interfere with the wound as little as possible. To accomplish as much, he recommends that the bandage be applied, one side starting from the left side of the arm, the other from the right (the method of separate bandaging). The *hôs epi to polu* applies to the place from which the bandaging should start. The practitioner should start from 'about' (*hôs epi to polu*) the middle of the bandage, so that the sides can be applied equally. The author seems to be referring to the same set of considerations we adopt when lacing shoes – i.e. start lacing so that there are roughly equal lengths on both the right and left sides of the laces.

Another important term for indicating the distinction between precision and imprecision is 'in summary' (*en kephalaioi*). It can mean giving a summary or the main point. Hence, in the *Laws,* the Athenian makes several particular statements about the proper education for children (643bd). At the end, he says in reiteration of his guiding thought, that 'first and foremost' (*kephalaion*) education consists in guiding a child towards the occupation he will one day master (643d). *Kephalaios* can also refer to giving a general idea, as opposed to a specific one. Hence, Xenocrates contrasts the term with the term 'clear' (*saphes*) in *Cyropaideia.* A soldier reports to Cyrus that he attempted to find an accurate (*saphes*) count of soldiers in the enemy's army (6.3.18). Cyrus replies that he wants a ballpark figure (*to plêthos ...en kephalaion*). In this vein,

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[134] Χρὴ δὲ, καὶ ἢν μὲν ἐλπίζῃς ὀστέα ἀποστήσεσθαι, τῷ τρόπῳ τῶν ὀθονίων ἐπὶ πᾶσι τοῖσι τοιουτέοισι τὴν ἐπίδεσιν ποιέεσθαι, ἐκ μέσου τοῦ ὀθονίου ἀρχόμενον ὡς ἐπὶ τὸ πουλὺ, ὡς ἀπὸ δύο ἀρχέων ὑποδεσμὶς ἐπιδεῖται·

the term can be contrasted with *akribeia* and compared to *tupos.* Hence, Aristotle writes that he means only to give a brief discussion of liberality, with the intention of filling in his remarks later. He writes:

> At present we are giving a mere outline (*tupôi*) or summary (*epi kephalaiou*), and are satisfied with this; later these states will be more exactly (*akribesteron*) determined (*dihoristhêtai*) (*NE* II.7, 1107b14).

In the Hippocratic Corpus, *kephalaios* refers to giving the general idea, as opposed to a specific one. So, for example:

> Speaking generally (*en kephalaion*) all parts of the body which have a function if used in moderation and exercised in labors to which each is accustomed, become thereby healthy and well-developed, and age slowly (*On Joints* 58; cf. *On Fractures,* 45; 43).

In the passage, describes specific cases in which overuse or underuse of a limb causes its atrophy – for example, the joints of the hip bone. If they are dislocated and left unreduced, the leg atrophies from misuse and lack of proper exercise. "If, then, the displacement is unreduced, the thigh bone gets short and the whole leg deteriorates, and becomes much more undeveloped and devoid of flesh because it gets no exercise" (58). The author concludes with a statement of the general principle this case instantiates. He claims that the parts of the body have a use, and function well in that use, provided that they are not overused or neglected.[135] One can observe the same use of the term, but at the beginning of the passage, where it indicates that the specific information to follow fills out the general claim (*On Fractures,* 26; cf. 31.14). Synonyms for *kephalaios* include (1) *sumpan*, where it can mean 'in general' or 'as a whole' (On Joints, 13.15); and (2) *epipan,* which means 'on the whole' or 'in general' (*On Joints,* VII.3; for an

[135] This use is similar to that we see in the passage from Plato's *Laws* above.

example that follows the use in *Cyropaideia)*. We also see the use of the general, as opposed to the specific, idea in *On Fractures* (7.6, 14.18, 31.16, 33.11).

3 The Causes of Inexactness

We have seen that the Hippocratic writers acknowledged a certain amount of uncertainty in their prescriptions, and that in expressing the idea that medicine was not exact, they used terms and ideas much like those Aristotle uses to capture the idea that politics is inexact. But to what did they attribute the cause of the inexactness?

One reason is that there were so many stages of the treatment during which the people involved – both the patient and the physician - could make a mistake. Consider, for example, one particular case: the procedure that would have lead to the healing of a broken arm. In *On Fractures,* the author claims that fractures usually heal in thirty days, but that there is nothing 'exact' (*atrekês*) about this number. He cites the difficulty in prediction as being related to the 'variation' (*diaphora*) among the patient's cases. We will come back to the term *diaphora* in a moment. But in the meantime, let us consider the obstacles to making such a prediction.

Many circumstances will affect the rate at which the arm heals. The opening chapters of the treatise convey the difficulty of getting the initial stage of the bandaging for a broken limbs correct. It is very important to make the initial set of bandages in a natural position for the arm – i.e. so that none of the bones will be in a distorted position (3.33). The experienced doctor will be able to detect as much (3.52). The bandaging process itself requires that the linen bandage be applied so that the patient's hand is a little higher than the elbow. Differential pressure should be applied at the wrappings for each part of

the arm. Finally, another set of bandages should be applied from either the top of the arm to the bottom, or the bottom to the top of the arm (4).

Whether this has been done correctly will depend on the report of the patient. The patient should report that, for the first few days, the pressure of the bandage feels as if it increases, rather than decreases. This is a sign of due measure (5.7). The patient's hand should begin to swell a little (5.9) – another sign of due measure. Hence, the author writes:

> If any of the said conditions are lacking, you may conclude that the bandaging was slacker than the mean (*metriou*)… and if you first bandaging hit the proper mean, this one should be a little tighter. (*On Fractures,* 5)[136]

The writer does not remark that the doctor's dependence on the patient's report compromised his case. However, the fact that doctors depended on patient's reports of their conditions was an important consideration for several Hippocratic writers in assessing the degree to which doctors could have exact knowledge of patient cases. (*On Ancient Medicine,* 1, 9; *Morb.* I. ch 16, L VI 170.2 ff.)

On the third day, the pressure should decrease and the bandages should loosen. If this does not happen, the doctor can conclude that the bandaging was in deficiency of the mean (5.17-8), and the next round of bandaging should be made tighter. Similarly, if the bandage was too strong to begin with, the next round of bandages should be looser (5.20-2). This careful attention to the tightness of the bandaging (5) and the position of the bandages (6) continues until a splint is put on the arm (6). Splints should be left on the

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[136] This is one of several passages in *On Fractures* which refers to the idea of the mean. In general, the treatise is excellent as an example of the doctrine of the mean put to scientific use. It uses terms related to the mean, such as: *metriotates, meso(i), epikairos* and *kairos.*

arm for approximately twenty days (7.1-4). During this period and afterwards, the patient should take a light diet, avoiding meat and wine (7).

One can imagine that, at any stage of this process, the doctor will make an error about the proper positioning of the arm in the bandage, the tightness or looseness of the bandages, the decision when to apply the splint, and the length of time during which the splint should be on the arm. The doctor's assessment, moreover, will depend on the patient's report of his own condition ("Does it feel as if the bandage is getting increasingly tight over two days time?"). Any number of mistakes can be made along the way.

Hence, the writer acknowledges, we cannot say for certain how long it will take the forearm to heal, and the claim is meant quite literally. The rate at which the bone heals could take any length of time. Thirty days is an estimate. But the author also makes clear that his aim in composing the treatise on fractures is not to give precise estimates of the length of time it take bones to heal, the number of wrappings which should be made around a broken limb, the tightness with which the bandage should be applied, and so on. Rather, the author states his aim simply as:

> This discourse (*logos*) gives a sort of normal rule (*nomos dikaios*) for the treatment of fractures, how one should handle them surgically, and the results of correct handling (7.28-30).

If anything goes wrong, moreover, the author cites lack of care in the bandaging. While the beginning of the treatise gives an overview of the proper treatment for a broken limb, the rest of the treatise provides specific information about the way to treat certain kinds of injuries.

We have just seen that Hippocratic doctors might justifiably have believed that the complexity of patient's cases – along with complicated paths of diseases – made medicine an inexact science. This point is also reflected in the broader historical trends in medical treatment of the time. Techniques of regimen became increasingly complex in the late fifth and fourth centuries, ultimately requiring that a doctor master a large range of information about particular patients and their environments in order to administer successful treatment.

Originally, regimen was not a philosophical or theory-laden science. It had consisted exclusively in the administration of food and drinks.[137] However, in the late fifth century, the doctor Herodicus of Selymbria communicated his medical findings to intellectuals and philosophers (*Rep.* 405d-406c).[138] Afterwards, there was a flurry of interest in spelling out the details of regimen in a more theoretical and systematic form. Several treatises on regimen date from this period of burgeoning theoretical inquiry: *Regimen, Epidemics, Regimen in Health, Regimen in Acute Diseases, Airs Waters Places* and *Nutriment.*

Regimen was to undergo yet more significant developments later in the fourth century in the work of Mneistheus, Praxagoras, Dieuches and Diocles of Carystus.[139] These scientists conducted more sophisticated and detailed research on regimen than their

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[137] Nutton 2004, 96.
[138] See also *Regimen* I.1, which reports that "many" have written on the subject of regimen. Similarly, see Democritus, DK 58.
[139] For the full list: Acron of Agrigentum, Philistion of Locri, Dieuches, Erasistratus, Galen (*Health,* 1-6; *On the Faculties of Foods*, 1-3). Oribasius (books 1 and 4), Hierophilios

Hippocratic predecessors.[140] For example, Mneistheus made observations of the effects of diets on children. Praxagoras advanced the study of the various structures of the body and the effects of food upon these, including the womb, heart and blood vessels. Diocles wrote a long treatise on dietetics, *Hygiene,* in which he spoke not only to the treatment of illnesses, but to the maintenance of health through exercise and proper diet.[141] Some fourth century doctors advanced regimen by writing extremely detailed studies of the effects of various foods upon the body. While this kind of work had been attempted in the Hippocratic treatise *On Regimen,* there was more widespread pursuit of the project in the fourth century. Diphilus of Siphnos, for example, gave a thorough catalogue of foods, dwelling on specific foods such as cherries, mushrooms, and mussels. He explains, in detail, the effects of green apples on the stomach, distinguishing between ripe and unripe green apples. The unripe apple causes constipation and the production of bile. The ripe apple, on the other hand, acts as a laxative.[142] Dieuches also wrote at greater length than the Hippocratics about the preparation of food. For example, he recommends that dry breads are good for treating illnesses associated with excess phlegm. He also explains the way to make dry bread: Make a dough from spelt, making sure that the flour is fine and thoroughly milled. The dough must be softer than that which could be cooked in a earthenware vessel; it should be placed on the fire, in the ashes and covered with ashes, the embers on top in order that the surface of the bread is scorched.

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[140] Nutton 2004, 125.
[141] See fragments: 176-7, 188, 191, 200, 222-3, 225, 228-9, 233.
[142] Diphilius's views are preserved in Athenaeus's *Deipnosophists.* See Book 3 for the discussion of green apples.

One of the major developments of this time period was the view that regimen dealt not only with food, drink and their effects on the body proper. Instead, as the view developed, the subject matter of dietetics included several other aspects of life as well. A doctor must take any of the following into account: the age of the patient, the season of the year, the disposition of the land (i.e. whether it is a typically arid or humid region); the patient's habits (e.g. whether he tends to have two or three meals a day, how many baths, at what time, etc.); last, he must know the patient's constitution (*phusis*). For example, the author of *Regimen in Health* claims that, the doctor must know: " age, season, habit (*ethos*), land, and physique" (2). Similarly, in *Regimen*, the doctor is expected to be familiar with the following domains of expertise: the primary constituents of the cosmos, *phusis,* food, exercise, weather, geography, and astronomy.

4 *Diaphora*

In the current section of this chapter, I would like to examine this idea of categories of information with which the doctor should be familiar in order to treat a patient. During the period from which most Hippocratic treatises date, this idea was a *topos* of many medical texts. Moreover, a semi-technical term was often used to convey the idea– namely, *diaphora* for 'variation.' I believe that this is the closest the medical corpus comes to giving a formal explanation of inexactness in medicine.

In the previous chapter, I suggested that Aristotle uses *diaphora* in at least two, distinct ways. First, there is the technical meaning of the term – i.e. the notion of *diaphora* as *differentia,* or the quality that distinguishes a species from other members of the same genus. Aristotle also uses the term to capture the idea of relevant, individuating characteristics. I suggested that this notion of *diaphora* was used in the *Nicomachean*

Ethics to explain the inexactness in political science. There, *diaphora* is a property of the subject matter of political science, such that it refers to important individual variations from case to case.[143]

In the Hippocratic Corpus, *diaphora* is less precisely defined. Like our notion of 'variation,' the term takes on several everyday meanings. For example, *diaphora* can refer to the substantive 'variation' – as in a variation in a quality for example, length. Hence, Herodotus writes that there is a small 'variation' in the *stadia* from the Mediterranean Sea to Heliopolis and from Athens to Pisa (2.7). *Diaphora* can also refer to variations as in 'it makes a variation.' Hence, in *On Joints,* the author writes, "it makes a great 'variation' if the patient lies down, and fourteen days suffice if he keeps at rest" (14).

But *diaphora* also crops up as a semi-technical term in methodological discussions.[144] A claim will take the form of: (a) multiple variations among patient's cases; and (b) the variations introduce inexactness in treatment or knowledge of patients. For example:

> Some patients that have the diseases of this kind and from these factors, succumb within a short time, others drag on much longer. For one body differs (*diaphora*) from another, one affection from another, and one season in which to be ill from another; some patients are more able to endure the stress of diseases, while others are totally incapable of enduring. It is certainly not possible to know precisely (*akribes*) and to state correctly the period within which a patient will die, not even whether it will be long or short. (*Morb.* I.16. 1-9).[145]

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[143] Passages not mentioned below, but relevant, include: *Airs Waters and Places,* 13, 24; *Prorrheticon* 2; *On Foods,* 25.

[144] For pre-Aristotelian accounts of categories, see the Pythagorean table of principles and Plato, esp. *Sophist* (being, rest, motion, same and other); *Philebus* (infinte, finite, mixture, unity and cause of unity);

[145] Οὗτοι ὁκόσοι τοιουτότροπα νουσήματα ἴσχουσι καὶ ἀπὸ τούτων, ἔνιοι μὲν δι' ὀλίγου ἀπόλλυνται, ἔνιοι δὲ πουλὺν χρόνον ἕλκουσιν· διαφέρει γὰρ σῶμα

The author's claim is that there are variations (*diaphorai*) among patients in terms of affections, seasons, bodies and capacity for endurance. Because there are such variations, it is impossible to know exactly when a patient will die. We see that *phusis* refers here to the individual constitution ("one body differs from another"). A second individuating feature of the case is the individual's capacity for endurance, and this is probably a consequence of the strength of his constitution. The *phusis* of the disease is relevant as well. Just as the human body follows a path of development delineated by its *phusis,* a disease, too, might have a *phusis,* and thus a certain path of development.

Other passages introduce additional categories of variation, as I mentioned earlier: the age of the patient, the season of the year in which the disease was contracted, the season of the year in which the patient is being treated, the disposition of the land, the patient's habits and constitution (*phusis*). Relevant categories of variations may even include weather patterns, geographical location, and patterns of stars during contraction of the illness.

These accounts invite some comparison with an Aristotelian doctrine of the categories, which also proposes that 'things that are said' (*ta legomena*) can be analyzed according to a set of ten categories including: substance, quantity, quality, relations, and so on. A more natural comparison is the group of categories in Aristotle's doctrine of the mean. In order to hit the mean in being angry, for example, the decision maker must

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σώματος, καὶ ἡλικίη ἡλικίης, καὶ πάθημα παθήματος· καὶ οἱ μὲν ταλαιπωρότεροί εἰσιν ἐν τῇσι νούσοισιν, οἱ δὲ παντάπασι ταλαιπωρέειν ἀδύνατοι. Οὔκουν ἐστὶ τὸ ἀκριβὲς εἰδέναι "καὶ τυχεῖν εἴπαντα τοῦ χρόνου, ἐν ᾧ ἀπόλλυνται, οὔτε εἰ πολλὸν, οὔτ' εἰ ὀλίγον· οὐδὲ γὰρ οὗτος ὁ χρόνος ἀκριβὴς, ὃν ἔνιοι λέγουσιν, ὡς τὰ πολλὰ, οὐδὲ αὐτὸ τοῦτο ἐκποιέει· διαφέρει γὰρ καὶ ἔτος ἔτεος, καὶ ὥρη ὥρης, ἐν ᾗ ἄν νοσέωσιν·

consider a number of features of his situation: e.g. how long to be angry? To what degree to be angry? Towards whom to be angry? But the tendency among medical writers to classify the various items relevant to a patient's case might equally be part of the classifying tendencies that we see most of all in the Hippocratic school of Cos (*Regimen in Acute Diseases,* 1; cf. *Diseases* II.A). For example, according to *Regimen in Acute Diseases,* the Cnidians were responsible for categorizing twelve diseases of the bladder and four diseases of the kidneys.

In the medical case, the most important instance of *diaphora* is *phusis*, or 'bodily constitution.' In the Hippocratic Corpus, *phusis* encompasses a set of features of a being, and in particular, those associated with it by birth. It refers also to the idea of the path of development of a being from birth to death. As Heinrich Von Staden suggests, *phusis* is the idea of a "regularly recurring cluster of characteristics by which one can always recognize a thing as what it is."[146]

In some cases, *phusis* is construed as a cause and contrasted with 'thought' as a cause. Hence, in *Epidemics,* the author writes that the various activities associated with the *phusis* of the human being proceed 'not from thought,' but automatically and 'without instruction,' which makes nature a good doctor in that it corrects itself:

> The body's nature (*phusis*) is the physician in disease. Nature finds the way for herself, not from thought. For example, blinking and the tongue offers their assistance, and all similar things. Well trained, readily and without instruction, nature does what is needed. Tears, moisture of the nostrils, sneezing, ear wax, production of saliva in the mouth, the intake of breath, exhalation, yawning, coughing, hiccoughing, in a variety of ways" (6.5.1).

[146] Von Staden 2007. Cf. Schiefsky 2005, 69-70.

The metaphor here is that the *phusis* acts as a physician. By controlling bodily functions that speed recovery – e.g. tearing, sneezing, coughing, etc. – *phusis* acts, in effect, as a physician. Some of the other examples in the passage – exhalation, yawning, and blinking – are less obviously associated with recovery from illness, but rather refer more directly to the day-to-day maintenance of the body.

In some cases, *phusis* refers to a specific individual's nature. We can see this contrast between the individual *phusis* and the study of nature (*peri phuseôs*) in the following passage from *On Ancient Medicine*.

> …It is impossible to have any clear knowledge about nature (*peri phuseôs*) from any other source than medicine….I mean this science that consists in knowledge of what the human being (*anthrôpos*) is and by what causes it comes to be and all the rest, with precision. For this I think is what it is necessary for a doctor to know about nature (*peri phuseôs*) and to make every effort to know, if he is going to do any of the things that he must: what the human being is in relation to foods and drinks (20.2-3).

This passage uses *phusis* in two ways. First, there is the mention of a study *peri phuseôs.* *Peri phuseôs* here may refer to the study of nature in the sense that the Presocratics studied nature. In this case, it means an account of human nature "from the beginning, in terms of what the human being is and how it originally came to be and from what things it was compounded" (20.1). These aspects of the study of human nature can be summarized as the study of: (1) the origins (*ex archê*) of the human being; (2) the 'what' of the human being; and (3) the material of which the human being is composed. We lack only the notion of a final cause in order to have an Aristotelian-looking account of the four causes.

But there is another use of *phusis* in the same passage, and this use should be interpreted as a notion of *phusis* of the individual:

> Hence, the natures (*ai phuseis*) of these people differ, and the variation concerns the very thing in the body that is hostile to cheese and is stirred up and set in motion by it (20.6).

In this passage, the author argues that no simplistic theory of regimen will be sufficient for making patients healthy. For example, one cannot simply adopt the principle that cheese or wine is harmful if taken in too much quantity. Instead, one must say that the extent to which cheese or wine can be harmful *depends on the constitution of the patient*. But the constitutions of people differ from one another. Hence, the doctor should say not 'simply' (*haplôs*) that cheese is harmful if one eats too much. Rather, he should explain 'what trouble, and why, and which of the things in the human being it is inimical to.'[147] Why? Foods and drinks affect the human being 'differently.'

The notion that cheese affects people differently requires a notion of the individual nature – i.e. some structure that each person has such that he does not share it with others. At the same time, however, there is certainly grounds for the claim that, in general, cheese eaten in too great a quantity tends to have a negative effect on health. Hence the author claims that 'cheese is a harmful food' (2.3). Similarly, he claims that it is true that large quantities of unmixed wine are unhealthy. It is true in the sense that "all who see this state would recognize that this is the power of wine and that it alone is responsible" (2.4). Nevertheless, the author claims, the idea is incomplete. For wine – though it is generally bad when consumed in large quantities – is bad to different degrees, depending on the drinker.[148] The conclusion of this line of thought is that the right theory of medicine is one that studies the relationship between food and people's bodies

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[147] τίνα τε πόνον καὶ διὰ τί καὶ τίνι τῶν ἐν τῷ ἀνθρώπῳ ἐνεόντων ἀνεπιτήδειον.
[148] Lloyd 1979; Lloyd 1991; Von Staden 2007; Schiefsky 2005, 226, 237, 261-2, and 304.

The doctor should be in the position to state the relationships that hold between kinds of foodstuffs and *individual* natures.

A second individuating feature of a case is the season. The seasons are typically divided into four: winter, spring, summer and fall. But they might also be divided by solstices: i.e. winter solstice, spring equinox, rising of the Pleiads, summer solstice, autumn equinox and setting of the Pleiades (Diocles of Carystus, fragment 183a.6, trans. Van der Eijk).[149] The seasons were regarded as having an effect on the development of a disease both in terms of treatment and contraction. Recovery might be easier in some seasons as opposed to others – e.g. the winter rather than the summer. A disease might also be contracted only during certain seasons.

But there were also common changes to regimen for each season – in very much the way that, during the hot summer months, people eat lighter meals. For example, Diocles recommends that, during the winter solstice, one should drink hot liquids, but diluted; one should have unmixed wine (wine without water) and decoctions of oregano; finally, one should have sexual intercourse (6). This course of regimen is recommended not merely because of the season. Rather, the more immediate cause is that, during the winter solstice, an increased amount of moisture flows downward into the lower regions of a person's body. Diocles prescribes allopathic remedies (remedy through opposites): hot drinks and undiluted wine to counteract the effects of increasingly cool and watery moisture in the lower parts of the body.

Medical advice for the seasons sometimes sounds as if it were more appropriate to a gourmet's cookbook. For example, in the Hippocratic Corpus's *Regimen,* there is a

[149] The passage is possibly spurious.

detailed list of the various properties of food and the seasons during which to take the food. Similarly, the fourth-century writer Diocles of Carystus wrote extensively about food, seasons, and their effects on health. For instance, Diocles observes that, in the winter, the following practices should be observed:

> Garlic and onions and dried fish and thick soups and especially lentil soup are appropriate to that season, and of the other dishes roasted rather than boiled food, and in general dryer ones rather than wet ones. More [appropriate] to the winter, too, are cardamom and mustard. As for drinking during dinner, one should take dark, thin wine, moderately soft, not young, mixed just a little. Appropriate to that season are roasted almonds, myrrh, roasted acorns, filberts, both boiled and roasted.

Mention is made of the food, the preparation of the food, and the appropriate wine and spices. One gets the sense that the focus of this sort of advice is less geared towards individual patients as much as towards gourmet season-specific meals. Indeed, as Diocles remarks earlier in the passage: "a bunch of white grapes is good for everyone during dinner" (7).

The focus on living well in these passages – rather, say, than treating diseases with food – reflects the fact that regimen was not solely about restoring health, but rather about living well too. We can see this preoccuption both in Diocles' writings, but also in treatises of the Hippocratic Corpus (e.g. *Regimen* III). While the term for 'regimen' *diatae,* i.e. 'diet', has a medicine-specific connotation, it has a broader meaning as well. In its medicine-specific context, it refers to a prescribed manner of life, regimen, and in particular, diet. For example, in the *Republic,* Socrates remarks that the guardians should not copy the diet (*diêtae*) of athletes, since it will make them to drowsy, like athletes who have eaten too much (cf. *Lovers,* 132), and it will be bad for their health, since even a

small departure from the prescribed diet has serious effects (*Rep.* 404a).[150] But *diêtae* has a broader meaning as well: a way of living or mode of life. For example, in the *Cyropedia,* Xenophon describes the Median 'way of life' (*diêtae*) as tacky. The Medians favor makeup and wigs; they wear purple tunics and jewelry. The Persians, on the other hand, lead a plainer life (*Cyropedia*, 1.3.2).[151] The passage above deals with diet in this latter sense – namely, as a way of life.

Another kind of *diaphora* is the age of the patient. Time of life affects health. *Regimen in Health* represents the idea as follows. The younger a person is, the drier and hotter his constitution. The older a person is, the wetter and colder his constitution (*Regimen in Health,* 2). In many cases, prescriptions are made for specific times of life: infancy and old age, for example. *Regimen in Health* recommends that infants be washed for a long time in warm water and be administed well-diluted wine (6). Diocles recommends that old people seldom wet their heads; and instead, that they content themselves with anointing themselves occasionally. In the summer, the liquid to use is olive oil mixed with water; in the winter, olive oil mixed with wine (*Fragment* 182.6, van der Eijk).

Gender should also be taken into account when recommending a regimen to a patient. There are four main treatises dealing with women in the Corpus: *Diseases of Women* 1 and 2, *Barren Women,* and *Nature of Women.* Women were recommended to have a diet that induced drying properties, since their constitutions were regarded as being naturally soft and moist. (See, for example, *Regimen in Health,* 6). Vivian Nutton notes that the

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[150] For the food/exercise specific notion of *diêtae,* see also *Regimen,*. 1.1.
[151] For the use of *diêtae* as a way of life, see : Hdt. 1.36.136 Th. I.6 Euripides. fr. 5.25.5 Sophocles, *Oedipus at Colonus*, 352, 751 (as in 'beggarly way of life').

special affordances made for women were especially noticeable where pharmacology was concerned. Substances used to treat women's ailments were markedly different from those of men, containing far more exotic and disgusting materials – for example, excrement. Nutton suggests that the symbolic function of these substances is important. If a woman is polluted – for example, by menses – then only a suitably polluting substance can be used to treat her. Another treatment reserved for women was "odor therapy," designed to treat uterine displacement. The therapy was the placement of either sweet or fetid smelling substances near the women's vagina or nose. The operative assumption, as it is described in the *Timaeus* (91ad) (the womb is an animal in the woman's body), is that a woman's womb is a sentient being.[152] As a result, it is repulsed by bad smells and attracted to good ones. One might, for example, waft the smell of sulphur under an ailing woman's nose (*Morb. Mul.* 2).

Last, there are a number of subjects which might be generally grouped as *geographical.* These include: soil, waters, winds, and the location of the patient's city. First, for example, *region,* affects the state of the body. In general, southern locations are said to be dry and hot, thus promoting dryness and hotness in the body. Similarly, northern locations are said to be moist and cold, thus promoting a preponderance of those qualities in the body. Second, winds affect patients. This can be seen in the following ways. *Regimen* II, for example, opens with a discussion of the way a doctor may relate winds to the patient (38). All winds, the author claims, have a cooling and moistening effect, since all winds are from cool and moist places. But there are variations because there are northerly versus southerly winds. There are also winds that have passed over

[152] For discussion of this treatment, see Hanson 1991.

the seas, snow, lakes, rivers, land, etc. All of this changes the degree to which the wind possesses qualities of moistness and coolness. The southern winds which effect Libya, for example, are hot and dry for two reasons. First, the wind has passed under the influence of the sun for quite a while as it made its way up from the southern hemisphere. Second, the wind does not pass over water as it makes its way.

The discussions of the effects of geography on health are most famous, perhaps, in the Hippocratic treatise *Airs, Waters and Places.* The treatise, thought to have been composed roughly in 430 B.C. is written for the traveling physician who needs to know what sorts of diseases to expect in various regions he visits. The first part of the treatise presents a theory of the causes of disease. The second part develops an account of the relationships between region and the physical and mental characteristics of its inhabitants. The prologue or *epangelma* to the piece argues that, to practice medicine, one ought to learn the basic principles of environmental theory. In addition to factors already named, these include: properties of water, position with respect to winds and the risings and settings of the sun and soil (e.g. bare, dry wooded, watered).

Conclusion

Chapters 3 and 4 of the dissertation have shown that important parallels can be drawn between Aristotle's account of politics and the Hippocratic Corpus. Both politics and medicine are not exact. Claims in both politics and medicine hold 'for the most part' or 'mostly' (*hôs epi to polu/ epi to pleiston/ polu/ de polu*). Only schematic accounts can be given of both politics and medicine. Finally, both Aristotle and the medical writers appeal to 'variation' (*diaphora*) to explain inexactness in their respective studies.

In the next chapter of the dissertation, I will try to draw some conclusions from these parallels. Recall from chapter 2 that the claims associated with inexactness have been used as textual evidence for the particularist reading of Aristotelian deliberation. The next chapter establishes that, in the medical case, the claims associated with inexactness do not warrant the conclusion that medical deliberation calls upon no action-guiding principles. Rather, we find the opposite – namely, that medicine is inexact, but medical deliberation calls on action-guiding priniples. I make this argument by examining the Hippocratic treatise *On Ancient Medicine*, which shows that we cannot draw the particularist's conclusions from the claim that medicine is inexact.

Chapter 5

Principles in the Hippocratic Corpus

Aristotle claims that politics is not an exact science, and he expresses this idea in a number of ways. For example, the "account of matters of conduct" has to be written in outline form (*tupôi*). Similarly, matters with which politics is concerned – namely, conduct and questions of human good or advantage - "have no fixity."[153] Both the general account of politics (*tou katholou logou*) and the account of particulars lack exactness, the latter even more so. Accounts of politics do not "fall under any art or set of precepts." Rather, agents must determine, on a case by case basis, what is appropriate in each case (*ta pros ton kairon*) (NE II. 2, 1104a1-10).[154]

On the basis of claims like those above, some commentators have inferred that Aristotle is particularist about deliberations.[155] That is, the claim that politics is inexact

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[153] τὰ δ' ἐν ταῖς πράξεσι καὶ τὰ συμφέροντα οὐδὲν ἑστηκὸς ἔχει.

[154] ὁ περὶ τῶν πρακτῶν λόγος τύπῳ καὶ οὐκ ἀκριβῶς ὀφείλει λέγεσθαι, ὥσπερ καὶ κατ' ἀρχὰς εἴπομεν ὅτι κατὰ τὴν ὕλην οἱ λόγοι ἀπαιτητέοι· τὰ δ' ἐν ταῖς πράξεσι καὶ τὰ συμφέροντα οὐδὲν ἑστηκὸς ἔχει, ὥσπερ οὐδὲ τὰ ὑγιεινά. τοιούτου δ' ὄντος τοῦ καθόλου λόγου, ἔτι μᾶλλον ὁ περὶ τῶν καθ' ἕκαστα λόγος οὐκ ἔχει τἀκριβές· οὔτε γὰρ ὑπὸ τέχνην οὔθ' ὑπὸ παραγγελίαν οὐδεμίαν πίπτει, δεῖ δ' αὐτοὺς ἀεὶ τοὺς πράττοντας τὰ πρὸς τὸν καιρὸν σκοπεῖν, ὥσπερ καὶ ἐπὶ τῆς ἰατρικῆς ἔχει καὶ τῆς κυβερνητικῆς.

[155] See Martha Nussbaum 1990, 68. Similarly, John McDowell famously argued in McDowell 1979 that deliberation does not resemble deductive reasoning – i.e. reasoning from determinate moral principles. In later works, he allowed that principles might play *some* function in deliberation. However, following Nussbaum, principles are allowed to play only a heuristic function. The are "rules of thumb." See McDowell 1996. David Wiggins argues for a particularist interpretation in Wiggins 1975.
See also Sherman 1996. Sherman writes: "while "for the most part" rules can be thought of as giving some common or characteristic examples of the circumstances in which

just means that there are no true action-guiding principles according to which an agent might deliberate.

I want to suggest that Aristotle's claims about inexactness do not merit this inference. The Hippocratic treatise *On Ancient Medicine* proposes that medicine is not an exact science. But it also aims to provide action-guiding principles through which the doctor can deliberate about patient's cases. Thus, the treatise's claim about inexactness is consistent with its endorsement of action-guiding principles. I suggest that an analogous point might be made about Aristotle's account of deliberation. That is, Aristotle's claim that politics is inexact is consistent with the endorsement of action-guiding principles for the deliberating agent. The purpose of this chapter is to show that while *On Ancient Medicine* (1) argues that medicine is not exact, it also (2) endorses action-guiding principles in medical deliberation.

The chapter has six parts. The first three parts of the chapter make stage-setting points. In the first part, I contextualize the topic of exactness in 4th-century skepticism about medicine. One of the skeptical charges against medicine is that medicine is inexact. This historical background will help us understand why medical writers would have responded defensively to the claim that medicine was inexact. In the second part of the chapter, I provide a summary of the textual evidence for lack of exactness in medicine and politics from chapters 3 and 4. The third part of the chapter reviews the particularist's interpretive claim about the textual evidence regarding inexactness.

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required ends can be finely realized, they don't go substantially beyond that. To say they are even presumptive rules seems to strong" (Sherman 1996, 270).

In the fourth part of the chapter, I show that the author of *On Ancient Medicine* claims that (1) medicine is not exact (*akribês, atrekês*). The fifth part of the chapter shows that, far from acceding that medicine lacks principles for being inexact, *On Ancient Medicine* provides a robust account of the method by which the discoveries of such principles are made. In the final part of the chapter, I describe the body of discoveries in question and show that they consist of a set of action-guiding principles that the doctor uses in deliberating about the best ways to 'hit the mean' in treating patients.

1 Skepticism about Medicine

Worries about the exactness of medical science are part of the larger problem of skepticism about medicine's status as a *technê* in the fifth century. Was precision of measurement and inexactness possible in medicine? If not, was medicine nevertheless a science on other grounds?[156]

Skepticism about medicine may have been prompted by the expansion of a medical education beyond the traditional class of those descended from Hippocrates. Originally, medical education was offered only to the descendants of Hippocrates. However, the school was eventually opened to others – hence, the creation of the famous Hippocratic Oath, which ensured allegiance to the ideals of the Hippocratic family.[157] The pool of those who could now be educated in medicine would have been enlarged by the

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[156] For a discussion of these themes, see Hutchinson 1988. Hutchinson focuses on Plato's response to a fourth-century debate about the nature of practical knowledge and those sciences which had only an "imperfect rate of success." As Hutchinson notes, skeptics doubted that sciences like medicine and rhetoric were forms of knowledge, and they thought that medical and rhetorical success were the product of luck (26-7).

[157] Jouanna 2001.

publication of manuals or handbooks, which allowed people to study medicine on their own, for the circulation of such treatises would have made it possible to learn medicine without being trained directly in the Hippocratic family or its associated schools.[158] No qualification tests were required of medical practioners, and, as a result, anyone could advertise himself as a physician.[159] Indeed, there were many groups involved in healing: midwives, drug sellers, sellers of charms and incantations, temple physicians.[160] The practice of medicine became increasingly deregulated, and the result may well have been skepticism about the extent to which medicine was, in fact, a *technê.*

The most extended discussion of skepticism in any of the Hippocratic treatises comes from *On Art*.[161] It reports that there are four main skeptical arguments. The first is that patients are cured through luck, not art (4). Indeed, if medicine is truly a *technê,* it ought to achieve its aim in every case. But some patients are cured, and some patients are not. So, we have to conclude that the patients restored to health are not cured through the *technê*, but through luck. The second objection presents a variation of the first. Patients are cured without the help of medicine (5). Hence, the reason a patient has recovered has some cause other than the doctor's care. The third objection is that patients die under the care of physicians (7). Finally, if medicine is a *technê,* it should be able to cure anyone. But some physicians refuse to treat some patients – the hopeless cases. This shows that the physician acknowledges his powerlessness (8) (cf. *On Joints,* 58). These objections,

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[158] Dean-Jones 2003. For the related story about rhetoric, see Kennedy 1959.
[159] Jones, 1931, xxxviii.
[160] Lloyd 1991b, 249-250.
[161] Several Hippocratic treatises raise the issue of skepticism about medicine: *On Art, Precepts* 9*, Regimen in Acute Diseases* 8*,* and *Ancient Medicine,* for instance. For discussion, see Lloyd 1991b.

for the most part, concern the inefficacy of medicine: there is little evidence of a consistent relationship between the recovery of the patient and the efforts of a doctor.

The same sort of argument can be found in *On the Sacred Disease,* but directed towards religious medicine, rather than medicine as a whole. Medicine which is based in religion lacks the means (1.11) to cure patients for two reasons. First, it operates without an accurate account the proper manner by which to treat disease. For the treatments religious practitioners used included purifications and incantations. More colorfully, they recommended: the meat of dogs, pigs, goat and deer; the wearing of black; and the avodance of baths (2). The author claims that religious practitioners impose these spectacular treatments because of the ostensible divine origin of the disease (2.27-8). The religious practitioner does not either know or admit that diet, rather than religious methods are the cures of diseases (2.44-6). This point is established on the basis of observed correlation between recovery and change to diet. The author claims:

> If these things give rise to the disease and increase it when they are eaten and brought to the patient, and when they are not eaten, there is a cure, no longer is the god responsible nor do purifications help, but the foods are what cure and harm, and the god's power disappears (2.40-46).

The second reason for the inefficacy of religious medicine is that it operates without knowledge of the nature of the disease, which is not divine. Rather, it is caused by the brain (6.1)….. The author claims that every illness can be cured, provided that the doctor has knowledge both of the nature (*phusis*) and ability (*dunamis*) of the disease (18). In order to do so, the doctor needs to know "how, judging the right moment (*ton kairon*) for each he will give nourishment to one thing and increase it, and take nourishment form another and reduce it" (18.4).

On Ancient Medicine is also an important source for reconstructing the skeptic's position. The author writes that medicine contended with the following objections:

(a) it has no method and principle
(b) its success is due to chance
(c) it is not a comprehensive science
(d) there cannot be sciences of inexact subject matter.

First, there is the claim that empiricist medicine has no method and principle. The author reports on the rationalist trend in medicine of making postulates concerning meteorology (1.23-4). But, there is no criterion to establish whether the claims about postulates are true. In fact, medicine has no need of the postulates. It already has a principle and method of discovery. The method has long allowed discoveries to be made, and will continue to foster discovery, until the point at which there will be a complete science.[162] This is possible if inquirers are up to the task, and if they know what was discovered from previous research.[163]

As *The Sacred* Disease shows, one source of skepticism was the commonplace quack doctor (2.3-4). A high incidence of quackery among physicians – with its sensational claims about the power of healing – encouraged public cynicism about medicine. A discussion of quackery in *Precepts,* for instance, raises two problems. The quack doctor is fine when the people in his charge are healthy, but when health takes a turn for the worse, the quack is in straits, having no medical abilities. This is why the quack will not take difficult cases – because he cannot cure them. He will take only the case where the patient is healthy to begin with (7; cf. *Ancient Medicine* 9; *On Art*).

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[162] See also ch. 8 and 20 on complete science.
[163] See Lloyd 1991b, p. 256, for a similar reading.

Part of the problem of quackery stemmed from public susceptibility. First, the public was apt to underestimate the expertise needed to administer regimen correctly. Hence, the author of *Regimen on Acute Diseases* remarks that, because regimen involves nothing more than adjustments to diet – as opposed to a battery of medicines, say – the public believes that they can master the art easily:

> … It is in the proper treatment of these illnesses that ordinary folk show their most stupid side, in the fact that through these diseases chiefly quacks get the reputation of being physicians. For it is an easy matter to learn the names of the remedies usually given to patients in such diseases. If barley-water be mentioned, or such and such a wine, or hydromel, laymen think that physicians, good and bad alike, prescribe all the same things.

Since everyone knows something about diet and cooking, and this encourages the view that medical science – the old kind, at least – is not really a science at all (cf. *On Ancient Medicine,* 4). A second problem is that patients requested strange and fantastic treatment. Thus, the author of *Precepts* explains that the patients "ask for what is out of the way and doubtful, through prejudice deserving indeed to be disregarded but not punished. Wherefore you must reasonably oppose them, as they are embarked upon a stormy sea of change "(5.1-2). The writer of *On Joints* explains that patients, their friends and family express delight at elaborate techniques of bandaging, although he notes that the patients quickly tire of wearing the elaborate bandages.[164] Other ostentatious props included the physician's use of "luxurious headgear" and "elaborate perfume" (*Precepts,* 10). A little perfume is alright, but just enough to be tasteful (10). Finally, there was the practice of giving public lectures about medicine. As Plato illustrates in the *Gorgias,* the physician

[164] Lloyd 1987, 67.

could compete in argument with a sophist masquerading as a physician and expect to lose (456bc).[165]

Part of the physician's challenge came from the fact that important points regarding treatment were disputed among physicians. The author of *Regimen On Acute Diseases* writes that medicine has a bad reputation among the laypeople, so that "there is thought to be no art of medicine at all" (8.19). The public sees so much difference of opinion among medical practioners about the remedies of diseases, that they liken medical practioners to diviners, who had an established reputation for disagreement. The author of *Precepts* also remarks on argument among physicians. The author claims that physicians should not be wary of calling in other physicians for consultation about their patients. Indeed, when a patient's case becomes difficult, there is the most potential for things to go wrong (8.9-10). On those occasions, a physician really should call in other physicians. But physicians should not argue with one another in consultation; those that do are *banausic* (8).

2 A Summary of the Claims about Inexactness

As we saw in previous chapters, both Greek medical science and Aristotle's ethics are inexact sciences. It is worth reviewing, in summary form, the claims that ethics and medicine are inexact (from chapters 3 and 4).

[165] This is perhaps an exaggeration, according to Lloyd (Lloyd 1987, 103). But we can guess at the source of Plato's antipathy to quacks. Quackery in medicine is a larger problem than it may seem. It was part of the culture of words rather than substance (Lloyd 1987, 103).

Associated terms, ideas	*Aristotle*	*Hippocratic Corpus*
The subject matter is inexact	*akribês,*	*akribês, atrekês*
The explanation of inexactness	*diaphora*	*diaphora*
The account of the particular and its role in deliberation	Deliberation concerns both universals and particulars (*kath hekasta*). Aristotle's emphasis on practical perception of particulars..	The doctor must make decisions on the basis of assessments of particular features of a patient's situation – i.e. the patient's *phusis,* his age, his gender, his geographical location, the winds in his area, etc. (*diaphora*).
Because the subject matter is inexact, the account is inexact.	*tupos, perigraphos, en kephalaion.*	*en kephalaion, tupos*

3 Particularist Interpretations of the Evidence

The evidence above, one might think, supports a particularist reading of deliberation in both the case of medical deliberation and Aristotelian deliberation. For the claim that a science is inexact may seem like the claim that no principles hold in all cases with regard to that science, and this is exactly what both Aristotle and the medical writers seem to have in mind when they claim that politics and medicine are inexact.

Two sets of claims, in particular, suggest as much. First, there are claims that (a) a science is inexact, (b) that the status of generalizations in the science are '*hos epi to polu*' and that (c) its account must therefore be inexact. All of this suggests the further claim that action-guiding generalizations cannot be made in that science. This a core claim of the particularist.[166] Second, there are the claims that scientific practitioners must pay attention to the particulars (*kath hekasta*) or to the particular features of a patient's situation. This has suggested to particularist interpreters that Aristotle endorses the second move of particularism – namely, the switch from a cognitivist account of deliberation to a sensibility theorist's account of deliberation – i.e. one according to which the moral assessment of a situation consists in the uptake of the morally salient features of that situation – an assessment which is sufficient for moral decision making.

A number of passages in the *Ethics* indicate that Aristotle thought perception plays two important roles, as far practical wisdom is concerned.[167] First, Aristotle says that things appear differently to people, depending on character.[168] Second, perception acquaints the agent with particulars. As Aristotle claims in his cryptic discussion of *nous* from *NE* VI, *phronêsis* involves perception of the "last thing." This passage has widely

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[166] There are many kinds of particularism. I am referring here to particularism that casts moral generalizations as 'action-guiding standards' – following Sean McKeever and Michael Ridge. 'Action-guiding standards' are generalizations that provide both explanatory truth conditions and that guide action. Action guiding standards provide truth conditions for moral judgment in referring to features of the world that make those judgments true. They also provide guides for action. See McKeever and Ridge 2006, 6-7, 9-11, 89-91 for discussion.

[167] II.9, 1109b20-4**;** III.5, 1114a31-b8; VI. 5, 1126b3-4; VI. 11, 1143a35-b5; VI.8, 1142a18-30.

[168] III.4, 1113 a15-31; III.5, 1114 a31-b8; X.5, 1176 a3-30.

been interpreted as a reference to perception of particulars.[169] *Phronêsis,* on this reading, involves perception of particulars. The question is: how much so? According to the particularist, Aristotle means to say that decisions (*prohaireseis*) issue *solely* from perceptual judgments. No further processing – in the form of consultation of principles – is necessary.

The particularist argues that, to make a decision about action, one does not need a theory or principles that guide action.[170] That is, one does not need to subsume one's situation under some moral law, theory, or principles. Rather, perception of the salient features of any situation is sufficient for making a good decision. The particularist's point, however, is not merely about the tools of making good decisions. Instead, her point is also that truth and falsity claims about generalizations in ethics simply cannot be made. Granted, lying is wrong. But it is wrong only given the circumstances, according to the particularist, and may sometimes be right. Hence, the particularist endorses a ethical holism such that moral principles are correct only in light of a context. Finally, the particularist can allow that moral principles play a role in deliberation. But she is keen to establish that the role is restricted. Moral principles can be rules of thumb, but only in the sense that they give summaries of actions that have been morally successful in the past in similar circumstances. They are always defeasible.

It is worth contrasting the particularist's model of deliberation with that of the moderate theorist. A moderate theory position gives moral principles a more robust function in deliberation. The moderate-theory position is in agreement with the

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[169] VI.7, 1142a23-30; cf. 1141 b14-20.
[170] See the discussion of principle eliminativism in McKeever and Ridge 2006, 15.

particularist about the defeasibility of moral generalizations. There are always circumstances in which a generalization does not hold true, and deliberation is, in part, the project of determining whether the situation is one in which the generalization does not hold. However, the moderate-theory position is in disagreement with the particularist's suggestion that the moral generalizations are, at best, summaries of statistical frequency. For moral generalizations are not merely the claim that 'lying tends to be wrong' or 'situations are often such that lying is wrong.'[171] This makes the correctness of moral generalization wholly contingent on whether it has happened to be the case, empirically, that lying is often wrong. That is a point about statistical frequency, and the moderate theorist would like to say, moral generalizations carry more import than that. Instead, they represent normative claims that would be true, irrespective of their being stastically frequent.

The moderate theorist will also object to the particularist's holism. For ethical holism allows that *any* generalization, in principle, might have moral import.[172] For example, it may be the case that drinking from red coffee cups is wrong just as lying is wrong. For there are situations in which both can be wrong. Drinking from a red coffee cup may be wrong (imagine something incredible) if it turns out to be the signal by which a housewife communicates to a contract killer that, yes, he should go ahead with their earlier plan to off the husband. Imagining that 'drinking from red coffee cups is wrong'

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[171] Maggie Little is helpful in identifying precisely what seems amiss in the particularist's suggestion that moral generalizations are summaries of past phenomena. See Little 2001, 36. My explanation of objections to a particularist conception of generalization draws closely from hers in this paragraph.
[172] Ibid.

in the same way as 'lying is wrong' seems to get something fundamentally incorrect about the status of moral generalizations.

Now that we have considered the distinction between the particularist's and the moderate theorist's approach to moral deliberation, let us move the discussion from ethics to medicine. The same distinction holds in medical deliberation, if we think that medical deliberation can operate according to normative principles. For the particularist will claim that medical principles are statistically frequent claims. For example, 'eating excessive amounts of sugar is bad for one's health' just means that 'it has most often been the case in the past that eating lots of sugar is bad for the health.' Or 'around here, where we consider obesity and high blood pressure unhealthy, eating sugar is not condusive to health.' On the other hand, the moderate theorist will think of medical principles as having normative punch. It is, in fact, the case – given our natures as human beings – that eating sugar is bad for our health.

Let us consider an example to illustrate the distinction between the two approaches to deliberation fully. The example is: eating cheese. Suppose that we adopt the principle 'eating excessive amounts of cheese is bad for one's health.' The particularist will claim that this is a helpful generalization for the beginning doctor, who needs a set of rules to guide his treatment of a patient. The rule just says: advise your ailing patients, as a matter of course, not to eat too much cheese. Once you are good enough at discerning the cause of a patient's ailment, you can dispense with the rules. It is helpful to think of the analogy with the cook here.[173] A novice cook may have learned the rule that you should not add sugar to standing yolks. But by the time she becomes a

[173] Little 2001, 36.

master chef, she can dispense with the rule and invent dishes, if the time and audience seem appropriate, in which there are little bits of cooked egg yolks in one's dessert, added for special texture. The particularist doctor does not believe that excessive amounts of cheese is bad for everyone. Rather, the value of cheese intake depends wholly on the circumstances: who is the patient? What is his internal makeup? Does he have the enzyme count to process lots of cheese?

By contrast, the moderate theorist argues that the syllogism represents a decision procedure, a representation of the process of reasoning that leads to the decision to perform an action.[174] The major premise of the practical syllogism expresses the agent's will. It can also be codified in terms of a set of general prescriptions or universals about good actions. For example, the major premise expresses the compassionate person's commitment to help those in need. Such a person might have as the major premise of a syllogism: 'be kind to those in need' or 'atone for past wrongs.' Knowledge of the major premise should be construed both as the disposition of the will and as an item of knowledge – or a content-filled disposition of the will. For the will is required in addition to knowledge of the relevant reasons for acting.

The minor premise of the practical syllogism merely acquaints this person with the information as to when there are opportunities for action - the "straightforward facts about the situation at hand."[175] For example, the minor premise might correspond to one's seeing that there is an opportunity to be kind (by helping someone carry groceries) or that there is an opportunity to atone for past wrongs.

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[174] Note Cooper's disagreement. I discuss this point in chapter 2.
[175] Ibid, 336.

There are two problems with the this account of deliberation, according to critics.[176] First, Aristotle often claims that there are not universal truths in ethics (1009b12-23). Second, the account cannot make sense of Aristotle's remarks about the role that perception plays in *phronêsis*. The moderate theorist will claim that the function of perception in *phronêsis* is to acquaint the agent with his surroundings and then to use the deliverances of perception to decide which rule to invoke. As McDowell puts it, " in the "rule-case" picture, the most obvious role for perception is to contribute awareness that certain conditions, which are in fact the conditions specified in a rule, are satisfied."[177] Notice that, according to this interpretation of the function of perception, perception functions this way *for everyone.* Everyone, in other words, uses perception to determine his surroundings and to thereby to determine which rule to invoke. One's rules could be either the good or the bad sort; either way, he would still use perception in the same way.

4 *On Ancient Medicine* and Exactness

The Hippocratic treatise, *On Ancient Medicine,* a mid-fifth century treatise in the Hippocratic corpus, defends the view that the study of medicine is properly directed at the constitution of the human being (*phusis*) and its relation to food and drink. [178] To tell the story of the constitution of the human being is to describe the balance of four humors in the body and the structure of the body's internal organs. *On Ancient Medicine* argues

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[176] McDowell 1998, 27-8.
[177] McDowell 1998, 28.
[178] For a discussion of its dates, see Schiefsky 2005, 63-4. *On Ancient Medicine* is not included among the core group of Hippocratic treatises, thought to be composed by Hippocrates or some member(s) of his circle, ca. 460-370. Rather, it is thought to have been composed outside of both the Coan and Cnidian schools (Jouanna 2001).

against the view that medicine should study the human being as the composition of the basic elements of the universe. He must know, in other words, the ultimate constituents of nature and the manner in which they contribute to the makeup of the human being.[179] *On Ancient Medicine* develops a polemic against the view that knowledge of the constitutive elements of human nature is necessary for medicine. These primary elements coincide with those of the universe. It criticizes the practice of explaining diseases and treatment of disease through appeal to hot, cold, moist and dry.

The first section of *On Ancient Medicine* presents a polemic against philosophical medicine – i.e. the view that knowledge of the constitutive elements of human nature is necessary for medicine (chs. 1-2). The author then turns to a discussion of the origins of medicine in cooking (chs.3-12). Third, the author gives a detailed critique of philosophical medicine (chs.13-22), ending with his most sustained critique of philosophical medicine (chs.20-22). Finally, he turns to a discussion of the structures of the organs of the human body (chs.22-24). The treatise has been interesting to scholars for a number of reasons. First, it presents not only the first, but the most sustained attack against philosophical medicine in the HC.[180] Second, it presents the first history of medicine.[181] Finally, it is also the first attempt to give an account of medicine as the product of observation and experience.[182]

The author of *On Ancient Medicine* claims that medicine is not exact (trans. Mark Schiefsky):

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[179] See *Regimen, Fleshes* and *Sevens.*
[180] See Lloyd 1963 and Cooper 2004.
[181] Zhmud 2006.
[182] Schiefsky 2005, p. 1. For a more restrained account on this score, see Lloyd 1999, 151-68.

> …The doctor's tasks are much more varied and require more precision (*akribeiês*). For one must aim (*stochazessthai*) at a measure (*metron*); but you will find no measure – nor number nor weight besides– by referring to which you will know with precision (*akribeiês*), except the feeling of the body. Hence, it is difficult to acquire knowledge so precise (*akribôs*) that one errs only slightly in one direction or the other. And I would strongly praise this doctor, the one who makes only small errors; perfect accuracy (*atrekes*) is rarely to be seen (9; cf. *Regimen* 2).

To see the author's point, it is necessary to review some of the important terminology in the passage. First, there is the term *akribês* itself. While the term can refer to 'precision' or 'exactness' in the sense that information might be absolutely correct (Thucy. *Peloponnesian War,* I.22) or that generalizations might be always correct (Pl. *Laws* 769d), it can also refer to precision in the sense that an organization or a body would have been well-ordered. Hence, Thucydides says that the navy has 'exactness' (*Historiae,* VII.13.2). In a similar vein, *akribês* can also have the connotation of 'finished' or 'masterful,' as in 'his skill is sculpture is masterful.' In the passage from *On Ancient Medicine, akribês* seems to be used in both ways – namely, as a way of referring to the precision or orderliness of one's mechanical skills, but also in the sense that one's information is precise.

To see the author identify *akribês* with precision as skill, note the opening line of the passage in which the doctor's tasks are said to require precision: 'the doctor's tasks are much more varied and require more precision….' This claim seems to be much like Thucydides' remark that the navy has (and has lost) its 'exactness.' Note too that *akribês* is defined, at one point, in terms of number, weight and measure: 'you will find no measure – nor, number, nor weight besides – by referring to which you will know with precision, except the feeling of the body.' We get the sense here that the author is

referring to a measurable quantity, such as might have been associated with the tools of measurement that Greek scientists possessed at the time – the *tornos* or compass, for example (Pl. *Philebus* 51c).[183] The trio of measure, number and weight was a standard locution for measurable quantities, if we can judge by Plato's treatment. As Plato writes in the *Laws,* one kind of equality is the sort we encounter in manipulating "measure, weight and number" (*Laws* 757b3-6; cf. *Politicus* 284ce; Gorgias, *Fragment* 11a196).[184] Hence, there are multiple cases in which the author identifies *akribês* with precision as skill.

But *akribês* is used in the sense of 'precise information' in the passage as well. For example, the reference to *aisthêsis* pushes us in this direction. The passage makes an association between *akribeia* and the 'feeling of the body' (*aisthêsis*): 'you will find no measure (*metron*)… by referring to which you will know with precision (*akribeiês*), except the feeling of the body (*aisthêsis*).' The reference to measure (*metron*) might seem to push in the direction of *akribeia* as measurement. However, the term *metron* has a wide range of connotations, not least of which is its capacity to span the mathematical – moral bridge that we associate with the Greek philosophical tendency to see the mathematical notions of orderliness, evenness and measuredness as indications of moral rectitude. *Metron* need not mean measurement directly here, but rather something like: due measure or limit (Pl. *Laws*.836a); or measure – as in Protagoras's claim 'man is the measure of all things' (Pl. *Theatetus,*183c). According to one interpretation, the author means, if measurement is a criterion of exact science, then medicine, too, can make

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[183] For an account of the various forms of measurement and counting in the Hippocratic Corpus, see Lloyd 1987, ch. 2.

[184] τὴν μέτρῳ ἴσην καὶ σταθμῷ καὶ ἀριθμῳ.

measurements by assessing the feeling of the body.[185] However, it seems to me that *metron* might as easily have the connotation of 'due measure' here, in which case the author's mean would be something along the lines of: it is necessary that the doctor know how the patient feels – e.g. what degree or kind of pain – in order to procure precise information about the success of his treatment. Given the reliance on patient self-reporting of pain - as we saw in the discussion of *Fractures* from chapter four, such an interpretation seems viable. Thus, I argue, the passage suggests that the doctor depends on the feeling of the body to procure precise knowledge, but the feeling of the body does not render precise enough information. It is likely that the author is referring to the sense in which patient self-reporting provides important information, but information that can be inaccurate (cf. 2.3).[186]

The lack of perfect information about patients makes the doctor err with respect to the mean. As is the case in Aristotle's Milo example, the mean is expressed through diet. Just as the trainer can administer a weak diet to Milo and an overstrong diet to a beginning athlete, so too can the doctor miss the mark in giving a patient a diet that is too strong for his constitution (it 'overpowers' the patient's constitution), or the doctor can undershoot in administering a diet, giving the patient a regimen that is too weak to sustain him. Because a full determination of the extent to which the diet overpowers or undershoots a patient's constitution depends on patient's reports of his own states, it is "difficult to acquire knowledge so precise that one errs only slightly in one direction or

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[185] For a fuller discussion of the various lines of interpretation of *aisthêsis* in this passage, see Schiefsky 2005, 187-190.

[186] For a comparable suggestion, see Schiefsky 2005, 185-193, 196-200. His view on the meaning of *metron* in this passage is different from mine, since he reads it as a reference to the notion of measurement – as in 'measurable quantity.'

the other." While the notion of 'erring' in one direction or another is a marker of a the doctrine of the mean, the term '*stochazesthai*' for 'aim' or 'conjecture' is also a marker of the doctrine of the mean. For the doctrine of the mean is the idea that the agent *aims* mark in between excess and defect. We see that knowledge plays an important role in determining the mean. The clear suggestion of the passage is that, because the doctor lacks the requisite knowledge, he therefore misses his mark in treating the patient.

5 Responses to Exactness

At this point, let us take stock of the shape of the issue. The particularist argues that to attribute inexactness to a discipline is to endorse the particularist position – namely, that deliberation does not employ principles. As we have seen, the author of *On Ancient Medicine* claims that medicine is not exact. According to the particularist, this would essentially the claim that medical deliberation does not proceed according to principles. As we have seen, this is an entirely reasonable supposition. For there is a way to cash out the notion of exactness and exact science in such a manner so as to establish, conceptually, the connection between inexactness and lack of principles for deliberation.

However, it is now time to consider whether this position has any merit as a historical claim. That is, if we take off our philosopher hats and put on our historian hats, we can ask if the particularist interpretation is supported by the historical facts. I argue below that it is seriously at odds with the historical trends. The trend I have in mind is the burgeoning, but early development of non-mathematical sciences such as medicine. We can chart their development by looking at charges that such disciplines failed as sciences. These charges were expressed in two related ways – through skepticism about medicine and through the claim that medicine was not exact.

In the fourth chapter, we saw that skepticism about medicine as a *technê* was common in fifth and fourth century Greece. Numerous treatises of the Hippocratic Corpus respond to the skepticism, describing the various claims associated with the skeptic and the means by which defenders of medicine might respond.[187] The central objections made to medicine's status as a *technê* are that success in medicine is a matter of luck, rather than art, and that medicine has no curative power, as evidenced by the doctor's refusal to take on serious cases and by the fact that patients sometimes died under their doctor's case. Quackery also abounds among so-called "doctors"; spectacular bandanging methods, healing contraptions, special doctor headgear and excellent speeches about medicine are no substitute for real healing powers.

Medical writers made ready admission of the fact that medicine failed to meet scientific ideals represented by exact science. Aristotle describes the paradigmatic exact science in the *Posterior Analytics* (I.27, 87a31-36). Exact science provides explanations (*di hoti*) in addition to facts (*hoti*); it studies objects in abstraction from their matter and stripped of properties such as dimensionality. By contrast, an inexact science does not provide full explanations. It also studies objects as they are in the world – replete the messy properties like: matter, dimension and movement. First philosophy, or theology, is the most exact science, since it studies the one property which cannot be stripped from any object – being (*Met.* XI.7, 1064a1-5). Mathematics is a relatively exact science, since it studies under the aspect only of properties such as shape, line, and form. By contrast, physics is a relatively inexact science, since it studies objects in motion –

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[187] Among the treatises which present important discussions of skepticism are: *On Art, On Ancient Medicine,* and *On the Sacred Disease.* See also: *Precepts* 9*, De Loc. Hom* 46, and *Regimen in Acute Diseases* 8*,*

indeed, objects in non-uniform motion. The best sciences or the most scientific sciences are the exact sciences because they are concerned, most of all, with the first principles (*Met.* I.2, 982a25) and their principles are the most knowable (982b1-2).

There was both skepticism about medicine's status as a *technê* and admission by medical writers themselves that medicine failed to meet the scientific paradigm of exact science. There is an interesting historical question to ask about all of this. How did medical writers respond? Did they admit that medicine was an irremediable failure by scientific standards? Did they reject exactness as a criterion of good science? Did they attempt to redefine scientific standards?

The best way to describe the response made on behalf of medical science is to say that medical writers whole-heartedly rejected the idea that medicine somehow failed as a science. Of course, this meant that the burden was on medical writers to explain that, despite the fact that medicine manifestly failed to meet some scientific standards, it nevertheless merited scientific status. But this is the task taken up by writers in treatises such as *On Art, On Ancient Medicine, Regimen* and *Places in Man.* In what follows, I would like to examine one such effort to respond from *On Ancient Medicine*.

On Ancient Medicine makes two claims to which I will draw attention. The first is that medicine may not have achieved exactness in one sense, but it has achieved exactness in another sense – namely, through careful reasoning (*logismos*). I read this claim as an attempt to direct attention away from the ways in which medicine fails as a science and towards the ways that it has succeeded. For *logismos* involves deliberation according to principles. (Yet, this is precisely what the particularist denies.) I note, in particular, the fact that the author reappropriates the terms *akribês* and *atrekês* in the

passage, redefining them so that medicine *is* very nearly exact. Finally, I try to show that this new sense of exactness is connected with method (*hodos*). That is, any discipline which has a well-established and honed method (*hodos*) succeeds in being exact and succeeds in being a *technê.* Again, this point is significant because method (*methodos*) is associated with the use of principles. Yet, the particularist denies as much.

The argument of *On Ancient Medicine* is that medicine *has* attained a significant amount of exactness, even though it fails to meet the ideal of exactness fully. Rather than marveling at the extent to which it yet fails to be exact, one ought to marvel at the extent to which it made progress towards exactness:

> It is difficult when such precision (*atrekês*) is required by art (*technê*) always to attain perfect accuracy (*tou atrekestatou*). Yet many aspects of medicine….have arrived at such precision (*akribeia*). So I deny that the ancient art should be cast aside on the ground that it does not exist or that it is not being investigated in an admirable way, if it does not possess precision in everything; rather, since it has been able to come, by means of reasoning (*logismôi*), from profound ignorance close to perfect accuracy (*tou atrekestatou*), I think it is much more appropriate to marvel at its discoveries as having been made admirably, correctly and not by chance (12).[188]

As we saw in chapters three and four, the paradigmatic *technê* is the exact *technê*. The author responds to that ideal in this passage when he writes: 'it is difficult when such precision is required by art….' I take this to be another acknowledgment that medicine fails to meet the criteria for an exact science. The term used for 'exactness' in this section of the passage is *atrekês,* which tends to refer to precision in measurement. But

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[188] Χαλεπὸν, μὴ τοιαύτης ἀκριβίης ἐούσης περὶ τὴν τέχνην, τυγχάνειν αἰεὶ τοῦ ἀτρεκεστάτου· πολλὰ δὲ εἴδεα κατ᾽ ἰητρικὴν ἐς τοσαύτην ἀκριβίην ἥκει, περὶ ὧν εἰρήσεται. Οὐ φημὶ δὴ διὰ τοῦτο δεῖν τὴν τέχνην ὡς οὐκ ἐοῦσαν οὐδὲ καλῶς ζητεομένην τὴν ἀρχαίην ἀποβαλέσθαι, εἰ μὴ ἔχει περὶ πάντα ἀκριβίην, ἀλλὰ πολὺ μᾶλλον, διὰ τὸ ἐγγὺς, οἶμαι, τοῦ ἀτρεκεστάτου ὁμοῦ δύνασθαι ἥκειν λογισμῷ, προσίεσθαι, καὶ ἐκ πολλῆς ἀγνωσίης θαυμάζειν τὰ ἐξευρημένα, ὡς καλῶς καὶ ὀρθῶς ἐξεύρηται, καὶ οὐκ ἀπὸ τύχης.

the author uses the term synonymously with *akribeia* in this passage, as the use of the pronoun *tosautên* suggests. This passage also acquaints us with some of the common skeptical charges against medicine - for example: medicine 'does not exist': medicine arrives at its results 'by chance'; and medicine 'is not being investigated in an admirable way.'

The author argues that, despite medicine's apparent lack of exactness in one respect, it has nevertheless achieved exactness in several other important respects. Medicine has done so through 'reasoning' (*logismôi*), which allows it to come close to the "most accuracy." Note that, in making this claim, a bait and switch has occurred. The author's initial move in the passage is to admit that medicine is not perfectly exact. However, only a line later, the author claims that medicine has come close to perfect exactness because it involves a process of reasoning (*logismos*). This is an attempt to direct attention away from the way that medicine fails as a science – namely, in its reliance on patient's reports of their own conditions. Similarly, it is an attempt to draw attention to the way that medicine succeeds as a science – namely, insofar as it involves 'reasoning.'

But how is the term *logismos* being used in the passage? *On Ancient Medicine* does not provide much by way of illustration of the term *logismos.* However, if we assume that *logismos* is used in *On Ancient Medicine* in the same way that it is used in *On Art,* where there is a sustained discussion of the term, then we should read *logismos* as a reference to the reasoning that the doctor uses to discern the nature of diseases that are internal to the body and which cannot, therefore, be perceived. This makes *logismos* the process of reasoning that the doctor might exercise with respect to specific patient cases.

Through 'reasoning,' in this sense, the doctor discerns the nature of the particular patient's internal disease.

In the Hippocratic treatise *On Art, logismos* is the process by which the doctor discerns with the "mind's eye" the hidden diseases of a patient by reading signs about his or her condition. *On Art* introduces a distinction between diseases whose manifestation can be seen and those diseases which are internal and must consequently be discerned indirectly through signs (9.6-10). Those diseases that can be seen manifest themselves by things that can be directly sensed – for example: color and swellings that can be felt as moist or hard, and so on. But of the illnesses that cannot be directly observed, the doctor must take a different tact. He must acquire knowledge of the various structures of the human body – e.g. cavities, muscles, interstices, vessels, veins, and sinews (10). Similarly, he must read signs (*semeia*)(10.10) such as: clearness or roughness of the voice (13.5-6) and rapidity of respiration (13.6-7). A doctor cannot see these with his eyes, but he can learn to *see* them with the mind rather than the eyes – i.e. with the "mind's eye" (*tês gnômês opsei*, 11.11): "the attendant in fact, as could neither see the trouble with his eyes nor learn it with his ears, tried to track it by reasoning (11.15-7).[189]

The upshot for our passage from *On Ancient Medicine* is that, even though doctors rely on patient's reports of their conditions and even though medicine is therefore not exact, medicine is nevertheless quite close to being exact. For doctors can perform *logismos* in order to discern the hidden aspects of their patient's internal conditions. That is, they rely on the process of reading signs like raspiness of the voice and their

[189] ὁ μὲν γὰρ, ἐπεὶ οὐκ ἦν αὐτέῳ ὄψει ἰδεῖν τὸ μοχθέον, οὐδ' ἀκοῇ πυθέσθαι, λογισμῷ μετῄει

knowledge of patients' internal structures in order to gauge the patient's internal states. The presumption is that this process works quite well, making up for whatever loss of information taking place when a patient fails to self-report correctly. Hence, medicine is "close to perfect accuracy."

The second and more important way that author argues for medicine's status as a *technê* is to point out that medicine has a method (*hodos*). Of course, method plays a very important role in Aristotle's philosophy, where the notion of method is fairly well defined and always dealt with carefully at the outset of a treatise. One such method is dialectic, a form of argument that proceeds deductively or inductively from premises that are common beliefs (*endoxa*) (*Topics,* 100a20-101b4). (By contrast, demonstration starts with demonstratively certain premises.) What it means for a premise to be *'endoxon,'* is that the premise is generally accepted, that it is reputable, or that it is accepted by the most eminent philosophers. Obviously false or perverse views do not count as dialectical premises, even though they may be held by eminent philosophers. That is, we start by stating the commonly accepted views about a topic under debate, and we reject from consideration those views that are obviously false, even though they might have been held by eminent philosophers.

The notion of method is far less universally defined in medicine. The term *hodos* can be used either in the concrete sense of 'path' or 'way' or as the more intellectual notion of method of reasoning.[190] Hence, *Epidemics* defines method as a process of increasing generalization from experience:

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[190] For discussion of the various meanings of *hodos*, see Schiefsky 2005, 149.

> The summary comes from the origin and the going forth, and from the very many accounts and things learned little by little, one gathers them together and studies them thoroughly…This would be the road (*hodos*) (*Epidemics* VI.3.12).[191]

The sense we get from the passage above is that the author is referring to the intellectual process by which one makes generalizations after encountering many instances or much experience of a certain kind of phenomenon. The concrete sense of *hodos,* by contrast, means something more like the manner or mode of treatment – as in applying salts baths or administering *oxymel* (a honey and vinegar drink) to a patient. In this case, *hodos* can have 'way' (*tropos*) as a synonym.[192]

In *On Ancient Medicine,* method should be understood in the former sense of *hodos* – namely, as the intellectual process through which discoveries are made in medicine.[193] The method of medicine is an advanced form of dietetics and cooking.[194] As the author claims, there is no difference between the physician's art and method of dietetics and cooking. For they use the same mode of reasoning and the same method of

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[191] Κεφάλαιον ἐκ τῆς γενέσιος καὶ ἀφορμῆς καὶ πλείστων λόγων καὶ κατὰ σμικρὰ γινωσκομένων συνάγοντα καὶ καταμανθάνοντα, εἰ ὅμοιά ἐστιν ἀλλήλοισιν, αὖθις τὰς ἀνομοιότητας τούτοισιν, εἰ ὅμοιαι ἀλλήλῃσιν, ὡς ἐκ τῶν ἀνομοιοτήτων ὁμοιότης γένηται μίαοὕτως ἂν ἡ ὁδός· οὕτω καὶ τῶν ὀρθῶς ἐχόντων δοκιμασίη, καὶ τῶν μὴ, ἔλεγχος.

[192] For this point, see Elizabeth Craik's commentary on *Places in Man.* (Craik 1998, 191).

[193] For the same reading of *hodos,* see Schiefsky 2005, 144. Note that my representation of method in the Corpus is relatively sanguine. Compare Lloyd, who claims that it would be a mistake to represent Hippocratic medicine as the result of accumulations of observation and data. "The role of the data obtained from many tests is not so much to *decide between* theories judged antecedently to be of equal standing, as *either* to corroborate the author's own view *or* to refute that of an opponent" (Lloyd 1991, 71). For a general discussion of the extent to which Greek medical science resembled the modern notion of an empirical science, see Lloyd 1991, ch. 3. Lloyd claims that the virtue of Greek science was in its commitment to observation of particular cases – the sort of observation that one sees in the *Epidemics,* for example.

[194] Compare Plato's views on cookery in the *Gorgias.*

discovery:…"their reasoning (*logos)* was identical and the discovery one and the same" (7.7-8).

While medicine appealed to the same process of discovery as cooking, it was by no means unsophisticated. In the initial stages of development in medicine, there was experimentation with diet among the peoples willing to curb their desires for the sake of health – i.e. the Greeks (5.2). First, the quantity of food consumed was simply lessened (5.3). But this treatment proved to be unsuccessful in some cases (5.4). Since some patients could take only the smallest quantity of food, it was thought that they needed milder food. So began the process of mixing food with water and boiling foods. Patients who could not even eat the slops or the boiled foods were put on liquid diets (5.5). And so the process of developing foods in which humors were well balanced began.

Method here is best understood in relation to discovery (*heuresis*) – since the method in question is a method through which medical knowledge is discovered (2.1-2). In technical treatises, the acquisition of knowledge, or learning (*mathêsis*), tended to be explained by one of two intellectual processes: imitation (*mimêsis)* or discovery (*heurêsis*).[195] The idea of a first discoverer, or origintor of a field, was a common *topos* in scientific treatises.[196] Prior to the fifth century, the first scientific discoveries were attributed to gods and to wise men of other countries. Egypt, in particular, was thought to be a source of first discoverers. During the fifth century, however, we see Greek writers shift towards attributing themselves with inventions and discoveries. Aristotle, for example, attributes to himself the unique advancement of rhetoric (*Sophistical*

[195] See the excellent discussion of this and related points in Zhmud 2006, 64-69.
[196] Zhmud 2006, 23-29.

Refutations, 183b36). In particular, he is the first to discover the art of sophistic *sullogismos,* since such an art never existed before, despite the work of sophists such as Gorgias.

On Ancient Medicine connects method and discovery so that method is the means by which discoveries are made in medicine:

> Medicine has long since had everything it needs, both a principle and a discovered method, by which many admirable discoveries have been made over a long period of time and those that remain will be discovered, if one who is adequate to the task and knows what has been discovered sets out from these things in his investigation (2.1).[197]

In *On Ancient Medicine*, discovery is the product of methodical investigation, and it issues in a body of knowledge that the doctor can use in treatment. Indeed, discovery seems to be synonymous with content of the science.[198] The output of the methodological approach is a body of discoveries about the relationship between food, drink and the human being – in effect, the science of regimen. In *On Ancient Medicine,* knowledge of regimen can be broken down into two domains or areas of expertise. First, there is the subject of the effect of various foods, drinks, exercise, baths and other such things on the human body. Second, there is the subject of the internal structures of the body. Both domains of knowledge will be explained in greater detail in the last section of the chapter. For now, it is sufficient to see that discoveries of medical knowledge are produced by a methdological investigation – one closely resembling experimentation – into types of foods, drinks, exercises, etc. and their relations to human beings.

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[197] Ἰητρικῇ δὲ πάντα πάλαι ὑπάρχει, καὶ ἀρχὴ καὶ ὁδὸς εὑρημένη, καθ' ἣν καὶ τὰ εὑρημένα πολλά τε καὶ καλῶς ἔχοντα εὕρηται ἐν πολλῷ χρόνῳ, καὶ τὰ λοιπὰ εὑρεθήσεται, ἢν τις ἱκανός τε ἐὼν καὶ τὰ εὑρημένα εἰδὼς, ἐκ τουτέων ὁρμώμενος ζητέῃ.

[198] Cf. Schiefsky 2005, 132.

How does all of this provide a response to the skeptic about medicine and to the point that medicine lacks exactness? Recall a passage quoted earlier:

> I deny that the ancient art should be cast aside on the ground that it does not exist or that it is not being investigated in an admirable way, if it does not possess precision (*akribeiên*) in everything; rather, since it has been able to come, by means of reasoning (*logismos*), from profound ignorance close to perfect accuracy (*tou atrekêstatou*), I think it is much more appropriate to marvel at its discoveries as having been made admirably, correctly, and not by chance (12.2).[199]

We are now in a better position to assess the depth of the author's claim. This passage follows the author lengthy description of the cooking method by which medical art has acquired information about types of food and drink and their typical effects on the human body. It is with this body of knowledge that the doctor is able to engage in reasoning (*logismos*), the process by means of which he ascertains the illnesses that effect patients, even if they are hidden in the body or obscured by imperfect patient reports. By reasoning in this fashion with this body of discoveries acquired through methodical investigation, medicine has approach nearly perfect accuracy. Rather than dwelling on the degree to which medicine fails to be exact or fails as a science, it is more appropriate to "marvel" at the discoveries made in medicine. These discoveries were made through a method, the merits of which have been demonstrated. They are admirable, correct and make it the case that medicine is opposed to chance.

6 Principles and Theory in *On Ancient Medicine*

It is time to describe in more detail the body of discoveries that methodical investigation has produced. What follows is a brief review of the main points of that body of

[199] Οὐ φημὶ δὴ διὰ τοῦτο δεῖν τὴν τέχνην ὡς οὐκ ἐοῦσαν οὐδὲ καλῶς ζητεομένην τὴν ἀρχαίην ἀποβαλέσθαι, εἰ μὴ ἔχει περὶ πάντα ἀκριβίην, ἀλλὰ πολὺ μᾶλλον, διὰ τὸ ἐγγὺς, οἶμαι, τοῦ ἀτρεκεστάτου ὁμοῦ δύνασθαι ἥκειν λογισμῷ, προσίεσθαι, καὶ ἐκ πολλῆς ἀγνωσίης θαυμάζειν τὰ ἐξευρημένα, ὡς καλῶς καὶ ὀρθῶς ἐξεύρηται, καὶ οὐκ ἀπὸ τύχης.

discoveries. It is important to see that the principles produced by the investigation both explain and guide the decisions that practitioners would make.

According to *On Ancient Medicine*, food and drink are composed of a number of humors. Each kind of food or drink consists of various combinations of humors and can be prepared in any number of ways (e.g. boiling, roasting, etc.) (14.1-6). The result is that foods have different sets of capacities. Substances can be mixed together without losing their distinctive capacities.[200] Indeed, new capacities are gained in the process (13.3). Foods have the power to cause disease if they contain powerful concentrations of any one humor (14.4-6). The effect that the food has on a person depends on the interaction between the humors of the person and the humors contained in the food. Food which is not well blended can cause disease, for the humors contained in the food have a tendency to "separate off" (*apokrinesthai*). In particular, the patient's constitution is unable to overcome the power of the concentrated humor in the unblended food, and he therefore becomes ill (14.1).

Food needs to be well-blended. It is best for the eater not to ingest pronounced amounts of any one humor in contradistinction to the rest. Since the basic principle of health calls balance among the humors, it is best too that food preserve such a balance so as not to upset the body's balance. For example, it is better that bread be made from well-kneaded dough and from dough that holds adequate amounts of water, rather than from dry dough which has a disproportionate amount of drying properties of wheat to the moistening properties of water (14.1). Food which is not well-blended announces itself by the extremity and unpleasantness of its taste. For example, the food which contains

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[200] Anaxagoras DK 59 B; Empedocles DK 31 B; *Nature of Man,* 3.

the most of the sweet humor also tastes the sweetest (14.4). It is no surprise, then, the the typical fare of the human diet tends to be well-blended– for human beings take less pleasure in the strong tastes of unbalanced foor, or so the author suggests (14.6).

The account of food is extended by a discussion of the transformative powers of the humors in food (24). Besides mixing and blending, the humors also transform into one another by exploiting their commonality or kinship. For example, sweet wine turns to vinegar spontaneously (24.1). The idea is that the sweet and the acid are closely related – not as opposites, but as having comparable constituents. The author does not explain, but we can imagine that he refers to the sense in which sweet wine and vinegar both have acidic and sweet properties, but in different proportions. Hence, they have different compositions, but are closely related to one another. The result is that, if one is called for in a remedy, its counterpart is comparably effective. For example, if giving a patient a sweet thing is best, giving him an acidic thing is second best (24.2).

Ultimately, *On Ancient Medicine* never tells us exactly what is in any of our food. Unlike other Hippocratic treatises on regimen, it does not present a mini-rule book of the various foods one should eat in the different seasons and the various exercises that one should take in the different seasons. *On Ancient Medicine* only refers obliquely to such texts when it discusses the status of rules like 'do not allow patients to eat too much cheese.' The work of the treatise is to examine the status of those claims, rather than to present a battery of them.

Other treatises in regimen offer far more specific accounts of individual foodstuffs. The stated purpose of *Regimen,* for example, is to provide a detailed account of food and its properties – both according to nature (*kata phusin*) and according to art (*dia technês*)

(39.2) The author writes that he is forced to give an account of each food seperately. "….it is impossible to set forth these things in general, I will show what power each one has in particular" (39.14-7).[201] What follows is an account of the various kinds of food: for example, grains such as barley, wheat and "cyceon" – usually prepared as a mixture of barley, cheese and wine, but also to be combined with honey or milk (*Regimen,* 41.5-9). Similarly, there is an account of vegetables and fruit, lentils and beans, and meats ranging from pig to dog (46.23) are discussed. So, too, does the author discuss the various properties of dairy products, wines and vinegars, spices and herbs. Coriander, for example, is said to be hot and astringent and to prevent heartburn (54.22-23). The author's assessment of cheese is not terribly different from ours today: cheese is strong and nourishing (51; cf. *De Diatae Acutorum,* 18. 38 on the flatulent properties of cheese).

But what is the human being made of such that he reacts poorly to this element of the cheese? *On Ancient Medicine* develops an account of human nature (*phusis*) in answer to such questions. For the doctor should say 'simply' (*haplôs*)(20.3) that cheese is harmful if one eats too much. Rather, the doctor must say 'what trouble, and why, and which of the things in the human being it is inimical to' (20.3).[202]

Like food, human beings consist of a blend or *krâsis* of humors such as sweet, bitter, salty, acid, astringent, insipid, etc. (14.4). It is unclear just how many of these humors might be in the body. The author claims that there are many (14.4). His view may be likened to that of *de Morbis,* in which it is claimed that plants and human beings are compositions of powers manifested as humors. According to *de Morbis,* these are

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[201] περὶ μὲν οὖν ἁπάντων οὐχ οἷόν τε δηλωθῆναι ὁκοῖά τινά ἐστι· καθ' ἕκαστα δὲ ἥντινα δύναμιν ἔχει διδάξω

[202] τίνα τε πόνον καὶ διὰ τί καὶ τίνι τῶν ἐν τῷ ἀνθρώπῳ ἐνεόντων ἀνεπιτήδειον

identical to the humors which can be found in food and drinks. The powers are reducible to four substances: bile, water, blood and phlegm, each of which has its own seat in the body. (The heart is the seat of blood, the head of phlegm, the spleen of water, and the liver of bile.) Whenever any food or drink enters the body, it is collected in the stomach, and from there, each humor in the body draws the like humor in the food. If this is the type of view that the author of *On Ancient Medicine* has in mind, we can expect that he envisions the various *dunamei* in question – sweet, salty, bitter, etc. – as being reducible to basic humors.

The author used the method of analogy, rather than empirical observation, to arrive at his account of the human being as a composition of humors. As we saw earlier, the healthiest food is that which has been well-blended. The powerful *dunamei* of food are made healthy through blending with other *dunamei,* But the same seems to be the case of the human being (14.1-2). Namely, the healthiest human being seems to be he whose *dunamei* are well-blended.

Disease and health are explained through mixture. When the humors in the body are balanced well against one another, the person is healthy. But if one of the humors becomes excessively concentrated, it seperates off and the person becomes diseased.[203] *On Ancient Medicine* gives a qualtitative description of what constitutes a good balance of the humors. The humors are in good balance when they are "cooked" [204] or "blended"

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[203] A similar account can be found in Aristotle's *Physics.* "Bodily excellences such as health and fitness we regard as consisting in a blending of hot and cold elements in due proportion, in relation either to one another within the body or to the surrounding (VII. 3, 246b5-6). Interestingly, Aristotle goes on to claim that the same principle applies to *hexeis* and *arete* of the soul (247a1-3).

[204] Aristotle, *Meteorology* IV. 379 ff.

(19). The blend (*krêsis*) can be destroyed either by the predominance of a humor or by the the failure to nourish the humors properly.[205] When one of the humors has 'separated off' from the mixture, it becomes concentrated, and in this way, it causes disease (20.6).[206]

Part of this general account of the human *phusis* is a discussion of the structures (*schêma*) of the human body. The author deals with this topic in a few brief chapters at the end of the treatise. The structures in question are both internal organs and external forms such as the head and the neck. The author's guiding premise in the discussion is the idea that shape has an effect on the processes of blending in the body. He focuses on shapes such as: tapering and hollowness. The tapered structures, for example, are better for drawing up liquids; the author uses the analogy with a straw to induce as much. (There is widespread appeal to the method of analogy in the discussion of structure.)[207]

We have now seen a brief description of the body of medical discoveries that methodical investigation produced. I have been assuming all along that the doctor would have to apply this body of discoveries. How does this work? This answer is quite simple. Medical discoveries consist of a body of principles that constitute the types of relationships between food and drink.[208] For example: an excessive amount of unmixed

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[205] But perhaps we can draw from the account of balance in *Nature of Man,* where good balance is said to be one of 'due proportion,' the absence of which is indicated by pain (4).

[206] Note that the author sometimes uses the term '*dunamis*' to refer to the humor itself, as in: the *dunamis* has the capacity effect *x* (14.6). For discussion, see Schiefsky 2005, 232.

[207] For a comparable use of the method, see *On Art,* where it is claimed that the method of analogy is the only means by which to ascertain the nature of phenomena that is 'unseen' – namely, what is going on inside the body.

[208] Note Lloyd's position on the material. He claims that the conclusions of the research are general but qualified, and that writers were not dogmatic in representing the

wine has harmful effects. Or: an excessive amount of cheese has a harmful effect. In deliberating about the case of a patient who is prone to drinking wine or a patient who reports digestive problems and a great love of cheese, the doctor will consider the fact that cheese and wine have these known harmful effects. The first step of his deliberative process will be the thought: some cut-backs are necessary. This patient will have to drink less wine or eat less cheese. But the deliberative process does not end there, for the doctor must consider who the patient is, such that he or she is effected in such and such a way by wine or cheese.

In chapter four, we saw that there were several categories of questions that a doctor should ask about his patients. These included: constitution, age, gender, and geographical location, to name a few. Thus, the second stage of deliberation involves the asking of all these questions about the particular patient. One might establish, for example, that patient *x* is a young woman from the cold, dry and arid regions of the North. Her constitution is relatively strong.[209] She is not easily overcome by a strong diet and can manage two meal a day. If there is any disruption to this pattern, her digestive cycles are not much disrupted.[210] With this kind of information, the doctor is

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conclusions of their research. "It is not the case that the writers conducted their observations merely to confirm rules that they had already formulated in detail. Rather those detailed rules are, in the main, generalizations which they arrived at on the basis of their particular observations including, no doubt, many others besides those recorded in the case-histories as we have them" (Lloyd 1999, 155).

[209] Note that *Airs, Waters, Places* draws a connection between the strength of *phusis* and geographical location. The people of the North, from the dry, cold and arid regions, are said to be hardier than most people (12). See also Aristotle's *Politics* VII.7 for discussion of the character of peoples of different regions.

[210] I draw inspiration for this example from *On Ancient Medicine,* 10. 1-12.1. The text contains a discussion between the various manifestations of and problems associated with a weak constitution.

able to complete a second stage of deliberation in which he assesses more precisely the amount to which the young woman should cut back on her consumption. As a hardy young woman, perhaps she does not need to limit herself to half a glass of mixed wine a day. Rather, she simply needs to stop drinking five glasses of unmixed wine a day. In his effort to hit the mean, the doctor recommends that the patient have two glasses of unmixed wine a day, or some such comparable amount. Similarly, the doctor may recommend that, if the woman suffers from excessive cheese intake, that she limit herself not completely, given her hardy constitution. If she were to eat no cheese, she might fall ill from "depletion," as we saw earlier. Rather, she should eat four ounces of cheese a day, rather than her customary ten. Again, the doctor is aiming for the mean in recommending that the woman neither undershoot nor overshoot the appropriate amount of cheese, given her constitution.

Conclusion

This chapter has provided a counterexample to the particularist's claim that (1) if a science is not 'exact,' then (2) the science does not offer action-guiding principles for deliberation. In the Hippocratic treatise *On Ancient Medicine,* it is argued that (1) medicine is not exact. Nevertheless, the author endorses action-guiding principles for medical deliberation.

We saw this in two ways. First, the author provides a rigorous account of the method through which such principles are discovered. This account of method, moreover, is meant to counter skeptical objections to medicine's status as a science. Though medicine is not perfectly exact, the author claims, it nevertheless approaches

exactness very closely by having a rigorous method of discovering principles. Second, we saw that the method of discovery renders a substantial body of action-guiding principles - principles like 'excessive amounts of wine are harmful.'

I will venture to speculate a bit in conclusion. Particularist readings of Aristotle – those of McDowell and Nussbaum – for example, are enchanted with the idea that Aristotle embraced the context sensitivity needed for apt practical reasoning. There is no doubt that Aristotle is an advocate of the importance of context-sensitive reasoning. However, this emphasis in his account is not supported by the texts on *akribeia* and related terms and ideas. Rather, we get Aristotle's emphasis on context-sensitive reasoning by considering his doctrine of the mean "in relation to us." This is the topic I take up in the next chapter.

In the meantime, it is important to see that, if the acknowledgment that a science is inexact in medicine does not mean that the scientist, therefore, refrains from seeking principles – but, in fact, the very reverse. It is worth considering whether the same might be true of Aristotle's acknowledgment that *politikê* is not exact. Indeed, if Aristotle pursues the strategy that we have seen in *On Ancient Medicine,* the admission that *politikê* is not exact is only a prelude to a determined effort to seek principles for *politikê.* And is this not the very thing that we should expect Aristotle to mean when he claims that, though exactness is hard to achieve in giving an account of *politikê,* "we must do what we can" (*NE* IX.2, 1165a35)?

Chapter 6

The Doctrine of the Mean in the Hippocratic Corpus

Aristotle argued that virtue is a mean relative to us (*pros hêmas*). It is not obvious how we ought to interpret this mean. But according to one reading - a particularist reading – Aristotle's mean relative to us requires that the standard (*horos*) in light of which an agent selects the mean (*NE* VI.1, 1138b18-24) not be constituted by principles. Rather, it is constituted by a contentless conception of the good that becomes determinate only with regard to specific people in specific situations. We might say, in effect, that this reading of the mean relative to us is a 'to each his own' reading of the mean.

Once again, *On Ancient Medicine* presents guidance about the interpretation of Aristotelian practical science, for it provides a counterexample to the particularist reading of the mean relative to us. *On Ancient Medicine* offers an account of the mean very much like Aristotle's mean relative to us. It argues that doctors should determine the mean for the man in relation to food, drink and exercise. Like Aristotle's mean 'relative to us,' this mean should be determined *relative to patients' particular cases*. However, contra the particularist reading, the mean should also be determined in light of action-guiding principles. These principles provide general, but specific, rules for treating patients (e.g. treat *x* symptoms with *y* substances), and in turn, these rules are derived from wide-ranging principles like the allopathic principle (i.e. treat an ailment with its opposite).

Thus, in the Hippocratic Corpus, we can find support for the idea that action-guiding principles are used in deliberation, for they are used in the selection of the mean.

The chapter has two parts. It begins with an introduction to the doctrine of the mean in Aristotle's ethics. The second section of the chapter gives an analysis of the mean in *On Ancient Medicine,* explained in terms of the contrast between the mean determined according to 'what the man is' and 'what the man is in relation to food, drink and exercise.' (*On Ancient Medicine* endorses the latter formulation of the mean.) As I will show, the mean for man in relation to food, drink and exercise was determined relative to the individual patient's constitution (*phusis*). However, doctors were also instructed to adapt general action-guiding principles to particular patient's cases. I will show as much by discussing two kinds of action-guiding principles: the general and wide-ranging sort and the specific, but general, sort. My examples are the allopathic principle (treat an ailment with its opposite) and specific principles that are derived from the allopathic principle (e.g. treat a fever, which has hot properties, with *kammaron,* which has cooling properties). The invocation of these general principles in the treatment of individual patients shows that, at least in the case of medicine, it is incorrect to adopt the particularist reading of the medical analogue to Aristotle's mean relative to us.

1 Aristotle's Doctrine of the Mean

The doctrine of the mean is the familiar idea that moderation is best, that excess is to be avoided, and that there is a right time for things. Indeed, the idea is more familiar to us than we necessarily realize. Consider the famous Byrds' song: 'Turn, Turn, Turn.' The song was adapted from the Book of Ecclesiastes. The Bible passage expresses the

idea that there is a time for everything: a time to be born, to die, to kill, to heal, to laugh, etc.

The doctrine of the mean is commonplace in Greek literature and philosophy. It was expressed by a number of Greek dictums. For example, there are the phrases: "nothing too much"; ""know thyself"; "observe due measure" (*kairos*), and "measure is best" (*metron*) (cf. *Protagoras* 343ab). The dictums were initially thought to be the sayings of the Seven Sages, a group of wise men in Greece. However, they came to be associated with the cooperative virtues appropriate to living in a city.[211] Indeed, in keeping with the bent of the cooperative virtues, the doctrine of the mean captures the idea that one should err on the side of mildness. Hence, Isocrates remarks in a speech to an aspiring leader that the "happy mean is to be found in qualities of defect rather than in those of excess."

> Keep a watch continually on your words and actions, that you may fall into as few errors as possible. The best thing is to hit the exact course which the occasion (*kairos*) demands, but when that is difficult to discover, choose to fall short rather than to do too much; for the happy mean (*metriotêtes*) is to be found in qualities of defect rather than in those of excess (*To Nicocles,* 33).[212]

In this remark, we can detect the same thought that probably drove Aristotle to surmise that erring on the side of one extreme may be better than erring on the other side. As Aristotle claims, one of the extremes is more erroneous than the other. Since hitting the

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[211] I.e. as opposed to the competitive virtues appropriate for the agonistic Homeric world. See Charles Kahn's discussion of the two sets of virtues in Kahn 1998, 30-31.

[212] Επισκόπει τοὺς λόγους ἀεὶ τοὺς σαυτοῦ καὶ τὰς πράξεις, ἵν' ὡς ἐλαχίστοις ἁμαρτήμασιν περιπίπτῃς. Κράτιστον μὲν γὰρ τῆς ἀκμῆς τῶν καιρῶν τυγχάνειν, ἐπειδὴ δὲ δυσκαταμαθήτως ἔχουσιν, ἐλλείπειν αἱροῦ καὶ μὴ πλεονάζειν· αἱ γὰρ μετριότητες μᾶλλον ἐν ταῖς ἐνδείαις ἢ ταῖς ὑπερβολαῖς ἔνεισιν.

mean is difficult, a second best alternative is to err on the side of the less harmful of the extremes (*NE* 1109a33-35).

The doctrine of the mean is not merely a moral dictum. For it refers more generally to the idea of opportuneness, whether meant in a temporal or spatial sense. For example, in the following passage from the Hippocratic Corpus, 'mean' (*metria*) is used to refer to the proper length of time with which one should use a part of the body:

> Speaking generally, all parts of the body which have a function, if used in moderation (*metria*) and exercised in labors to which each is accustomed, become thereby healthy and well-developed, and age slowly (*On Joints* 58).

In this passage, the mean is used to express the idea that there is a right length of time. However, the mean can also express the idea of the 'right moment' or point in time. For example, there may be opportuneness in the sense of a ripe moment for action (e.g. 'it is time to act'). But there may also be opportuneness in the sense of the right place. For example, an early use of the mean from the *Iliad* referred to an unguarded place in a person's armor into which one might stick a spear – i.e. a particularly vulnerable spot.

In Aristotle's philosophical writing, we find two distinct notions of the mean. Aristotle distinguishes between the mean *relative to us* (*pros hêmas*) and the mean relative to the deed (*pros tou pragmatos, kath auto to pragma*) (*NE* II.5, 1106b7; cf. 1106a31, a28, a36).

> In everything continuous and divisible, we can take more, less and equal, and each of them either *in the object itself* (*kath auto to pragma*) or *relative to us* (*pros hêmas*); and the equal is some intermediate between excess and deficiency. By the intermediate in the object, I mean what is equidistant from each extremity; this is one and the same for everyone. But relative to us the intermediate is what is neither superfluous nor deficient; this is not one, and is not the same for everyone (my italics) (1106a26 ff.)

The mean relative to the deed – also referred to as the 'arithmetical mean' - counts as a mean irrespective of the circumstances (1106a35). A simple example of such a mean is a mean between two quantities – say, ten and two. The mean or the halfway point between these two numbers is six (1106a33-34). Four is *always* the mean between two and six, regardless of the context or circumstance in which one assesses the mean. Another such mean might be that between two points. The halfway point on a foot-long ruler, for example, is the six-inch mark, and this will always be the case, irrespective of the context in which one assesses the mean.

There is another kind of mean that changes according to the circumstance, and this is the mean 'relative to us.' Diet provides a good example of such a mean. The right calorie intake for an average, young adult male is approximately two thousand calories. However, for a professional male althlete of comparable weight, age and constitution, the right daily calorie intake is much larger. A professional athlete might need twice as many calories per day. Indeed, Michael Phelps made headlines when it came out that he ingested more than 12, 000 calories per day. Aristotle uses the Greek wrestler Milo to illustrate this very point about the mean relative to us. Suppose a trainer considers how much food his athletes should take. He does not prescribe the same amount of food for everyone. For the beginner in gymnastics, a relatively smaller amount of food may be appropriate. But for Milo, who is a well-trained, big, strong athlete, a small diet will not be enough. The right diet for Milo may require much more.

The mean 'relative to us' is importantly related to Aristotle's conception of virtue. According to Aristotle, virtue is a disposition to choose the mean 'relative to us.' Virtue was thought to be a skill-like or art-like. The skills associated with discernment or good

judgment – e.g. rhetoric, medicine - were characterized as dispositions to select the mean. For our purposes, we might think of this as a way of capturing the idea that skills associated with rhetorical or medical ability require judgment or discernment. For example, Isocrates characterizes rhetorical ability as the skill of judging the type of speech – main point, mode of delivery, allusions – needed for a certain audience. Why should virtue be this sort of mean rather than the arithmetical mean? It is obvious that, to the extent that virtue is a form of discernment or judgment, it bears a a stronger relationship to a mean that needs to be discerned rather than mechanically generated, as does the mean between two numbers.

As a disposition to select the mean relative to us, virtue is both affective and intellectual. It is affective insofar as one desires and takes pleasure in the attainment of certain kinds of ends. It is intellectual, or rational, insofar as selecting the mean requires determining the specific things that count as instances of the general kinds of things that one aims to select. It is also intellectual insofar as selecting the mean requires determining the means by which one might attain one's specific goals. Aristotle's way of phrasing the point that virtue is an intellectual state is to claim that the mean is determined, in part, by *orthos logos*:

> Excellence, then, is a state concerned with (1) choice, (2) lying in a mean (3) relative to us, (4) *this being determined by reason* and (5) in the way in which the man of practical wisdom would determine it (1107a1-3).

There is a relationship between the affective and rational aspects of virtue. The non-rational part of the human being can *share in* (*metechein*) reason (*NE* I.1). This relationship, in turn, explains how the affective aspects of virtue can be subject to praise

in blame. (For one might argue that dispositions over which we have no control – like the emotions - should not be the subject of praise and blame.) The affective dispositions associated with virtue are regarded as admirable only insofar as they are consistent with and "obey" reason.

The sense in which the affective and rational parts of the soul are related is also expressed in the idea that virtue is concerned with choice (*prohairetikê*). Choice, or *prohairesis,* is both affective and ration. It is the psychological state of an agent as he or she performs an action. More specifically, it is the agent's reasoned intention to perform an action in a specific situation. Choice is affective insofar as it is an intention or desire to perform a certain action. It is rational insofar as the intention is the product or deliberation or reasoning about what is good or right to do. Choice entails opting for the action with deliberation - i.e. as opposed to choosing on the spur of the moment (b9) or out of spirit (*thumos*) (b18-9).

Because selection of the mean is an intellectual process as much as an affective one, Aristotle sometimes describes the intellectual part of virtue – *phronêsis,* or practical wisdom – in terms of its relationship to the mean. Aristotle claims, for example, that the mean is determined in the manner that the *phronimos* would determine it.[213] He also notes that there is a close relationship between *phronêsis* and the selection of the mean (*NE* 1138b18-34; II.6, 1136b36; cf. EE II.5, 1222b7-8).

It is helpful to contrast the idea of virtue as a mean relative to us with two competing notions of virtue. The Stoics claimed that virtue was a state of *apatheia* – namely, a state in which one does not respond to situations with emotion. *Apatheia* refers

[213] ὡρισμένῃ λόγῳ καὶ ᾧ ἂν ὁ φρόνιμος ὁρίσειεν

to the view that the passions have no place in the moral life and that it is best to eliminate them entirely. Aristotle's doctrine of the mean should also be distguished from the *metriopatheia,* which is the view that the passions have a place in the moral life, but only if they are moderate. This is essentially the idea of the arithmetical mean or the mean relative to the deed that we just saw. This is the idea that one gives a response that is moderate in every respect *in all situations*. In any situation, one ought to respond with a moderate amount of anger, grief, joy, exuberance, etc. In response to a rude action, for example, the metriopathic response is a moderate amount of anger. Similarly, in response to a generous action, the metriopathic response is moderate amount of appreciation. This position about the role of the emotions in the moral life can be criticized on the grounds that, in some cases, a extreme response seems to be in order. For example, a terribly rude or harmful action might require not moderate anger in response, but an very angry response. [214]

From the viewpoint of the person choosing, there appears to be complexity in the possible actions or feelings he can opt for. This point is best illlustrated with an example. Suppose that someone has done something wrong to you, and you are inclined to be angry in response. But, how long ought you to be angry? In particular, this is a question one asks when confronted with any temptation to be angry for a extended amount of time. For the question arises: is it appropriate for me to be angry for this long, or am I holding a grudge? You can contemplate being angry for any amount of time: anger for one day, two days, three days…. Similarly, you choose one of these options (anger for one day, two days….) by implicitly assigning value judgments to each option: e.g. too long, right

[214] See Urmson 1973 for discussion of the doctrine of the mean and this criticism.

amount of time, too short. Of course, you may be wrong. Being angry for five years is *not* appropriate - even though you have deemed it appropriate, given your tendency to implacable resentment. A person without this character flaw will assess the matter correctly. That is, she will better determine what counts as too long, just right, or too little for any given situation.

The need to take into account the particular features of a situation (e.g. time, objects, persons) introduces the requirement of 'aiming' (*stochazesthai*) at the mean (1126b29).[215] Aiming is the activity of assessing particulars in light of a goal.
The process of aiming works as follows. One bears in mind the goal – e.g. the *kalon* or *sumpheron.* One also considers the particular features of the situation in light of that goal. But the particulars introduce an element of contingency into the process. For example, it is not always clear how long one ought to be angry, at what sorts of actions one ought to be angry, or with whom one ought to be angry and to what degree. As Aristotle claims, these sorts of particulars make the process of deliberation range over matters about which generalizations hold only 'for the most part.'

There are several categories or dimensions the agent must consider in selecting the mean in a particular situation. Two of the most important categories concern actions

[215] The term 'aim' carries the connotation both of aiming – as in using a bow to aim at a target - but also of conjecturing or guessing. Aristotle uses the term in a variety of ways (1128a6;1129b15;1109a30; 1127a8;1160a13; 1126b29; 1106b15;1106b28;1109a22;1141b13). Sometimes, it means 'aiming' at the mean (1109a3). Sometimes, however, Aristotle refers to a specific goal at which one aims – for example: common advantage (1129b15), pleasure (1127a8), surviving and flourishing (1160a13). In still other cases, the goal is something one keeps in mind while making specific decision. Hence, Aristotle claims that we should 'aim' at experiencing pleasure or avoiding pain while keeping in mind the noble and expedient (1126b29). Note that this construction typically takes the form: while keeping in mind *x* (visual verb + *pros* x), one aims + genitive case of substantive infinitive (e.g. 1126b29; 1160a13).

and feelings. For example, one can choose to be *very* angry or only moderately angry. Similarly, one can choose a vengeful action or a mildly retributive action. There are also several other categories to consider when making a decision about how to act or feel. These include (*NE* IV.5, 1225b31-2):

1. Length of time: for *how long* (*hoson chronon*) ought one to be angry?
2. Objects: for *what* (*epi hois*) ought one to be angry?
3. Persons: towards *whom* (*hois*) ought one to be angry?
4. Manner: in what manner (*hos*) ought one to be angry?
5. Time at which: *when* (*hote*) should one get angry?
6. For the sake of what: *why* (*hou heneka*) should one get angry? (II.9, 1109a25-9)

Aristotle tends to give other lists of categories as well. He names *hos, houtou, epi toutois* and *epi tousouton chronon* (*NE* IV.5, 1125b34-6); he also names *hoi, hoson, hote, hou heneka, and hôs*, II.9, 1109a25-9. Our most complete list, therefore, is represented above.

Interpreters have thought Aristotle's doctrine of the mean –the idea that virtue is a disposition to select the mean relative to us - works in in one of two ways. The first view is that one *perceives* the mean. That is, the practically wise person has an insight or intuition of the mean. This insight has no communicable content, for it rather like the idea that the person has a sense of what it means to be good, such that she cannot state what the good is in terms of a set of principles to which she adheres. (It is not merely the case that she cannot state the principles, but rather that there are none.) She nevertheless consistently finds the mean in every situation through perception. Thus, we might think that, by 'relative to us,' Aristotle has a relativist position in mind. That is, if (1) a the

mean is determined relative to us, (2) the agent does not determine the mean in light of shared moral principles of deliberation.'[216]

According to the second view, the mean is determined through deliberation, by appeal to some action-guiding principles. Deliberation does not proceed along the lines of hard and fast rules. But there is some set of principles that the person of practical wisdom consults in attempting to determine the mean. Correct deliberation requires acquiring the right principles of the good; assessing the non-moral facts of particular situations correctly; and making the right deductions from the right theory of the good in light of the particular facts about the world. In order to do this, one must possess a correct set of moral principles – say, a sort of blueprint or plan according to which various goals are represented and ranked in order of importance.

The difference between these two interpretations can be seen by considering the readings of the practical syllogism associated with each. According to the generalist, the practical syllogism represents a decision procedure in which the major premise of the expresses the agent's will –e g. 'be kind to those in need' or 'atone for past wrongs.' The major premise should be construed a knowledge-cum-desire state – i.e. a content-filled disposition of the will.[217] The minor premise of the practical syllogism conveys the "straightforward facts about the situation at hand."[218] For example, the minor premise might correspond to one's seeing that there is an opportunity to be kind (by helping someone carry groceries). In deliberation, one puts together the major and minor

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[216] For a review of related positions, see Brown 1997.
[217] See Irwin 2000.
[218] Ibid, 336.

premise, so she thinks: (1) I am committed to 'be kind' and (2) there is an opportunity before me to be kind right now. She concludes that she should (3) do the kind thing.

The particularist interpretation of the doctrine of the mean presents an alternate account of the practical syllogism. The practical syllogism represents an explanation of action, rather than a decision procedure. There is no cognitive operation that corresponds to the putting together of the major and minor premises on the former interpretation. Rather, we are to think of the practical syllogism as corresponding to two ways of describing the psychological state of the practically wise person, both of which are needed to account for the fact that the agent is successfully motivated to perform an action. The major premise of the practical syllogism is conceived as an expression of the agent's general conception of the good life – something like Aristotle's notion of *eudaimonia* or *eu prattein.*[219] The minor premise expresses the agent's awareness of the morally salient features of a situation.

As we have just seen, Aristotle claims that virtue is a mean relative to us (*pros hêmas*) rather than a mean 'in the object itself' (*kath auto to pragma*) (NE II.5, 1106b7; cf. 1106a31, a28, a36), and there are two interpretations of his point. Which of these interpretations of Aristotle's doctrine of the mean is correct? In the next section, we will canvas some reasons to think that the generalist reading of the doctrine of the mean is the correct reading. I will show that another presentation of the doctrine of the mean relative to us appeals to action-guiding principles. This presentation can be found in the Hippocratic Corpus's *On Ancient Medicine.* If intellectual context is an indication of the

[219] For discussion of this idea, see Nussbaum 1990, 73 and 93.

way we should read Aristotle, then this presentation of the mean relative to us should point us in the direction of reading Aristotle as a generalist.

2 The Doctrine of the Mean in *On Ancient Medicine*

On Ancient Medicine offers an account of the mean that is analogous to Aristotle's mean relative to us. Like Aristotle's mean 'relative to us,' according to *On Ancient Medicine,* the mean should be determined relative to patient's particular cases.

But before considering how this is so, it is worth pausing to show that, like Aristotle's *Ethics, On Ancient Medicine* also presents us with the contrast between the arithmetical mean and the mean relative to us. As we saw in the previous section of the chapter, the arithmetical mean involves choosing the halfway point with regard to two extremes, irrespective of the people for whom one chooses the mean or the actions to which one responds in choosing the mean. For example, the gymnastic trainer would be choosing the arithmetical mean if he selected the same, moderate sized and medium strength diet for both the seasoned and the beginning athlete.

On Ancient Medicine presents the same idea in a different guise. For it presents the idea that all diets should be the same, irrespective of a patient's specific constitution. All diets should err on the side of under-nourishment, since the rule in medicine is that a diet should not overpower a patient's consitution.

> Now if it were as simple as has been suggested, and stronger foods harmed while weaker ones benefitted and nourished both the sick and the healthy, then things would be easy: for it would simply be necessary to lead a patient towards the weakest diet, and one could do so with a good deal of security (9.1)

Hitting the mean as a doctor would be quite straightforward if it meant only that one had to prescribe a diet that would never overpower a patient's constitution. The doctor would

have to consider only how to make the diet weak or not overstrong. He could prescribe everyone a medium sized diet of gruels and other medium strength foods, for example. Such a diet would always work, and the doctor could operate with a 'good deal of security.'

While the operative principle here might seem obviously wrong, it corresponds to an important early stage in the development of medicine. According to *On Ancient Medicine*, the early stage of medicine's development was characterized by the project of making strong and raw foods suitable for the relatively delicate human digestive system. What the wild animals could eat unproblematically, the human being could not (3.3). At this stage, medicine was the art of discovering how to make food and drink mild enough so as to be suitable for human beings.

Of course, medicine cannot end with the project of weakening overly strong foods. An overly weak diets can be as dangerous as an overly strong diet:

> But in fact, the error is no less, nor does it harm the human being less, if one administers food deficient in quantity and quality to what is needed; for the might of hunger penetrates forcefully into the human constitution to lame and weaken and kill. And many other ills, different from those arising from repletion but no less serious, also arise from depletion (9.2).

Thus, medical treatment is complicated by the fact that both overpowering and undershooting the strength of a diet are harmful. The illnesses associated with depletion are as detrimental to health as those associated with overpowering of the patient's constitution. The result is that the doctor must "aim" for the mean in between excessively strong and weak diets. ("For one must aim at a measure") (9.3). It is important to see that we have here something like the mean relative to the deed or arithmetical mean – namely, diets should be neither overstrong nor overweak. They

should offer nutritional value that is somewhere in the middle of defects and excesses of strength.

But, the text goes on to introduce the equivalent of Aristotle's mean relative to us. For it suggests that the mean must be determined with reference to individual patients. As the following passage suggests, an individual's makeup should determine the correct treatment for that patient:

> This I think is what it is necessary for a doctor to know about nature (*phusis*) and to make every effort to know, if he is going to do any of the things that he must: what the human being is in relation (*pros*) to foods and drinks, and what it is in relation to (*pros*) other practices, and what will be the effect of each thing on each individual (*aph'hekastou hekastô*)(*On Ancient Medicine,* 20.3). [220]

We must pay particular attention to the claim that the doctor must study 'the effect of each thing on each individual.' As the passage argues, the doctor must know about the nature or constitution of the human being (*phusis*). The suggestion seems to be that the doctor should know the features of the human being in general (e.g. that humans have two arms, two eyes, a heart that works roughly as so….). But in particular, the doctor must know what this constitution is in relation to (*pros*) food and drinks – hence, the important distinction between 'what man is' and 'what man is in relation to foods and drinks.' However, as the remark about 'the effect of each thing on each individual' shows, the doctor must know how this food and drink will effect each individual. In other words, treatment (i.e. food and drink) should be adjusted to individual cases.

This seems to be a recasting of Aristotle's mean relative to us in medical terms. Like Aristotle's mean relative to us, the mean determined in light of 'the effect of each

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[220] ὅ τί ἐστιν ἄνθρωπος πρὸς τὰ ἐσθιόμενα καὶ πινόμενα, καὶ ὅ τι πρὸς τὰ ἄλλα ἐπιτηδεύματα, καὶ ὅ τι ἀφ' ἑκάστου ἑκάστῳ ξυμβήσεται

thing on each individual' is a mean determined with respect to particular person's cases. In the case of ethics, this point is phrased as a relation between the individual and various features of action or *praxis* – namely: time, place, extent, manner, and so on. In the case of medicine, the same basic point is phrased as a relation between food/ drink/ exercise and a particular person's constitution or *phusis*. In both cases, we have the same idea – that the mean should be determined with regard to a particular person's case.

The analogue between Aristotle's mean relative to us and *On Ancient Medicine's* mean can also be seen by considering *On Ancient Medicine*'s use of the term '*phusis.*' For the term is used so that it means both the human being's constitution, generally specaking, and an *individual's* constitution. Because it can mean the latter – namely, an individual's constitution – it helps us see how the text expresses the idea that treatment needed tailoring to specific cases.

On the one hand, the term *phusis* is used in the medical corpus to capture the idea of a recurring features or patterns that make the human being what he is.[221] Hence, in *Epidemics,* the author writes of the various activities typically associated with the *phusis* of the human being: sneezing, blinking, breathing, yawning, etc. These are activities that the body adopts 'not from thought,' but automatically and 'without instruction,' which makes it a good doctor in that nature corrects itself:

> The body's nature (*phusis*) is the physician in disease. Nature finds the way for herself, not from thought. For example, blinking, and the tongue offers its assisstance, and all similar things. Well trained, readily and without instruction, nature does what is needed. Tear, moisture of the nostrils, sneezing, ear wax,

[221] Von Staden calls this "regularly recurring cluster of characteristics by which one can always recognize a thing as what it is" (Von Staden 2007). Cf. Schiefsky 2005, 69-70.

> production of saliva in the mouth, the intake of breath, exhalation, yawning, coughing, hiccough, in a variety of ways" (6.5.1).[222]

Phusis can often be construed as 'temperament' or 'constitution.' Thus, the author of *Fractures* writes that because "constitutions and ages differ greatly," there is nothing exact (*atrekes*) about the length of time it takes the forearm to heal. (*Fract.* 7).

In *On Ancient Medicine,* the term *phusis* is used to capture the idea of human nature, in this sense of the regularly recurring characteristics that define what it is to be a human. We see this idea in the idea that the human being consists of a blend or *krâsis* of humors such as sweet, bitter, salty, acid, astringent, insipid, etc. (14.4), and that the human being is no different from food, in this respect. Just as the healthiest food is well-blended, so too is the healthiest person he who has a well-blended composition of humors (14.1-2). Namely, the healthiest human being seems to be he whose *dunameis* are well-blended. By the same token, disease is explained by failure to mix well. If one of the humors becomes excessively concentrated, it seperates off (*apokrinesthai*), resulting in illness. Finally, knowledge of human *phusis* consists in knowledge of the internal structures (*schemata*) that make up human beings, in general. All of these matters – which are essentially, the properties shared by all human beings – account for the sense in which *phusis* refers to a general notion of patterns or regularly recurring characteristics.

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[222] Νούσων φύσιες ἰητροί. Ἀνευρίσκει ἡ φύσις αὐτὴ ἑωυτῇτὰς ἐφόδους, οὐκ ἐκ διανοίης, οἷον τὸ σκαρδαμύσσειν, καὶ ἡ γλῶσσα ὑπουργέει, καὶ ὅσα ἄλλα τοιαῦτα· ἀπαίδευτος ἡ φύσις ἐοῦσα καὶ οὐ μαθοῦσα τὰ δέοντα ποιέει. Δάκρυα, ῥινῶν ὑγρότης, πταρμοὶ, ὠτὸς ῥύπος, στόματος σίαλον, ἀναγωγὴ, πνεύματος εἴσοδος, ἔξοδος, χάσμη, βὴξ, λὺγξ, οὐ τοῦ αὐτέου παντάπασι τρόπου. Οὖρου ἄφοδος καὶ φύσης καὶ ταύτης τῆς ἑτέρης, τροφῆς καὶ πνοιῆς, καὶ τοῖσι θήλεσιν, ἃ τούτοισι, καὶ κατὰ τὸ ἄλλο σῶμα, ἱδρῶτες, κνησμοὶ, σκορδινισμοὶ, καὶ ὅσα τοιαῦτα.

But *phusis* is also used to capture the idea of a specific individual's nature. We saw this in the author's claim that 'the nature of …people differ' such that some are seriously affected by drinking large quantities of unmixed wine, and others less so. Similarly, we saw it in the idea that relatively unaffected by large quantities of cheese or wine and those much affected. On the other hand, *phusis* is also in such a way that it refers to an *individual's* constitution. We can see this use in the *On Ancient Medicine* passage discussed above. Reading *phusis* as the individual's constitution is the only way to get purchase on the author's claim that 'the nature of these people differ' – namely, those relatively unaffected by large quantities of cheese or wine and those much affected. The author's explanation is that these people have different amounts of the same humors – i.e. 'those in whom such a humor happens to be present in greater quantity."

We have also seen this idea throughout the Hippocratic Corpus. In chapter four, I described several categories of questions that a doctor should ask about his patients, including: constitution (*phusis*), age, gender, and geographical location, and so on. All of these categories concern *particular* features of patients that doctors must assess in order to apply rules of regimen to them correctly. For example, as I explained in chapter five, a doctor might have to establish that a young woman is from the cold, dry and arid regions of the North in order to ascertain that she has a relatively hardy *phusis*, and thus will withstand a relatively substantial diet and fail to thrive with a small one. In all cases, hitting the mean will not be a mere matter of giving a patient a medium-strength diet. Indeed, our hardy girl from the North shows as much. She should not drink five glasses of wine a day, but she should not drink just one either. A person of a weaker constitution would be better fit with a regimen of just one glass of wine a day – and perhaps watered

down at that. The reason for differences in individual *phuseis* is that these people have different amounts of the same humors – i.e. 'those in whom such a humor happens to be present in greater quantity" (20.4).

We have just considered the idea that *On Ancient Medicine* presents a notion of the mean that is an analogue to Aristotle's mean relative to us. We have seen that *On Ancient Medicine* presents this idea with the claim that the mean should be selected with relation to a person's *phusis,* or his individual constitution.

Another way to explore the mean in *On Ancient Medicine* is to consider *On Ancient Medicine's* contrast between 'what man is' (*ho ti estin anthrôpos*) and 'what man is in relation to (*pros*) food and drink.' At the heart of the contrast is the distinction between two ways of studying medicine – namely, as the study of nature in the tradition of the *phusiologoi* like Empedocles, or as the study of regimen. In declaring its preference for the study of man in relation to food and drink, *On Ancient Medicine* declares its allegience to medicine as the study of regimen. In seeing that *On Ancient Medicine* advocates that medicine be the study of regimen, we can helpfully connect *On Ancient Medicine* with other treatises on regimen. This, in turn, will help us see that *On Ancient Medicine*'s commitment to tailoring treatment to specific patient cases should be understood in light of the widespread commitment in such treatises to the study of general principles that guide diet.

On the one hand, the inquiry into 'what man is' is an inquiry into the basic nature of the human being – its constituent parts, its matter, and its origin. On the other hand, the inquiry into 'what man is in relation to food and drink' is an inquiry into the nature of

man in relation to his environment – not only the food and drink he ingests, but the place in which he lives, the air he breaths and the kind of habits he keeps. *On Ancient Medicine* argues for a focus on the latter notion in medicine, in contradistinction to the former - namely, 'what man is in relation to food and drink' as opposed to 'what man is.' For the study of 'what man is in relation to food and drink' brings the doctor closer to effective and practicable treatments for patients, so the argument goes. But, as the text suggests, the study of man in relation to food and drink is not merely the study of the *general* features of that relationship, but the study of the specific features of that relationship. That is, the doctor's work is to study not only the relationship between man and his environment, *generally,* but the relationship between a specific patients and food and drink. In effect, the treatise calls for the doctor's attention to the study of a patient's specific or individuating features, in addition to those features that he shares in common with other human beings.

Let us consider the first arm of the contrast – namely, the study of 'what man is.' This is the study of origins, the constituent parts, the nature, and matter of the human being in general:

> Some doctors and sophists say that it is impossible for anyone to know medicine who does not know what the human being is (*ho ti estin anthrôpos*). Anyone who is going to treat patients correctly must, they say, learn this. Their account tends towards philosophy, just like Empedocles or others who have written about nature from the beginning (*ex archês ho ti estin anthrôpos*), what the human being is and how it originally came to be (*hopôs egeneto prôton*) and from what things it is compounded (*hopôs sunepagê*)(20.1).

The study of 'what man is' can be characterized by a general concern to develop accounts of the origins of man (*ex archês ho ti estin anthrôpos*), how he came to be (*hopôs egeneto prôton*) and what he is made of (*hopôs sunepagê*)(20.1). The inquiry into 'what the man

is' is associated with Empedocles and others who wrote about nature (*alloi hoi peri phuseôs gegraphasin*). This is the study of nature that was characteristic of a group of scientists or philosophers termed the *phusiologoi.* Their interest was in the study of man in terms of his origin and his material makeup. We can easily find examples of such inquiries. For instance, when Plato writes of Socrates'early adventures in cosmology and the 'inquiry into nature' in the *Phaedo,* he is hypothesizing about a stage in Socrates' life in which Socrates could be counted among the *phusiologoi* (97c-99b).

To understand fully the study of 'what man is' in *On Ancient Medicine,* we must look at role of the *phusiologoi* in intellectual society. The passage above is part of a long tradition of critique*,* according to which the study of nature was not relevant to the understanding of the nature of living well. Cicero rehearses this critique when he writes that "celestial phenomena [Socrates] regarded as beyond our comprehension, or at any rate, however well we might understand them, as irrelevant to the good life" (*Academica,* I.4,15). Isocrates' *Antidosis* also levels a critique of the *phusiologoi.* While scientific knowledge disposes students to learn, nothing about its content helps a student along when it comes to *praxis.* This is because the study of such matters demands "special subtlety and refinement."[1] These studies have no connection with other forms of learning and particularly with the useful kind of rhetorical abilities that Isocrates claims to teach (263-4). If anything, such studies isolate a student from the normal life of the polis – the normal political life implicitly identified by Isocrates as the quintessential activity of the Athenian people.

The critique of the *phusiologoi* also enters the medical corpus. *On Fractures* epitomizes the hostility towards impractical and excessively learned doctors. Not only are such doctors ineffective, they even harm their patients.

> The theorizing (*sophismenoi*) practitioners are just the ones who go wrong. In fact, the treatment of a fractured arm is not difficult, and is almost any practitioners job. But I have to write a lot about it because I know wise (*sophos*) doctors who, out of a schematon… have got credit for wisdom by putting up arms in positions which ought rather to have given them a name for ignorance. And many other parts of the art are judged thus. They practice the outlandish, not knowing if it is useful, and take the customary to be good… (*On Fractures*, 1)

First, these doctors *believe* that they are capable. Second, they base their analyses of patients on theories. The author of *On Fractures* takes such theories to be misguided since they favor false analogies and spectacle. Finally, the lay public are impressed by such shows of apparent wisdom. The opening chapters of *On Fractures* develop several criticisms of other doctors on the basis of their "*wisdom*" (the term is used provocatively). The so-called 'wise' doctor, in the grip of a *schêma,* falsely reasons about the method by which to cure a broken arm. As we discover later, the source of the misguided reasoning is a false analogy to archery. The bad doctor reasons that – because archers hold their arms in a certain position – one ought to bandage the arm so as to favor the archer's position. While the practice of drawing analogies gives the bad doctor the appearance of wisdom, it does little to help the broken arm.

This is not to suggest that all the treatises of the Hippocratic Corpus are uniformly aligned against the *phusiologoi*'s inquiry into nature. Treatises such as *Fleshes, Regimen* and *Sevens* treat the human being as if it were made up of the constitutive elements of the cosmos. For example, *Fleshes* uses three elements (air, earth and aether) to give an account of the formation of the various parts of the human body. *Regimen* explains the

nature of the body in terms of two elements: water and fire. It presents a view of man as a microcosm of the cosmos, with the consequence that the anatomy and physiology developed in the treatise show the way in which the body looks like the cosmos. The belly, for example, is supposed to be enveloped by three "circuits," on the model of the three revolutions of moon, sun, and stars about the earth. There is a second group of Hippocratic treatises which treat medicine as an autonomous discipline, rather than an offshoot of cosmology. In this camp, we find the treatises *Nature of Man* and *Ancient Medicine.* The *Nature of Man* criticizes the monists who held that human nature is constituted by the elements fire, air, water, and earth. *Ancient Medicine* criticizes physicians who explain diseases by means of postulates such as the hot, cold, moist and dry.

Let us return to *On Ancient Medicine* and the specific complaint there about the *phusiologoi.* A first complaint is a point about the usefulness of theories of the cold, hot, wet and dry. In using such theories, a doctor will not cure his patients. He will drive them to an early death. If a person follows a regimen based on this theory, "he will suffer many terrible things: for he will experience pains, his body will be weak, his digestion will be ruined, and he wil not be able to live for long" (13.1). This objection follows from a second one – according to which the theory of disease and human constitution in question is simply wrong. Doctors who operate according to the method *ex hupotheseôs* have the wrong theory of properties. They believe that the only things which exist are: hot, cold, wet and dry. These are the properties, in turn, which explain health and disease in the human body. Since health consists in a balance of those properties, disease is the imbalance of the same properties and it is treated by rectifying the balance.

Now that we have considered the study of 'what the man is' and the critique of this sort of study, let us consider the contrasting idea - namely 'what man is in relation to food and drink.' The following passage, a part of which was quoted earlier, provides the core of the view:

> …This is what it is necessary for a doctor to know about nature and to make every effort to know, if he is going to do any of the thing that he must: what the human being is in relation to foods and drinks, and what it is in relation to other practices, and what will be the effect of each thing on each individual – not simply that 'cheese is harmful food', for it causes trouble to one who has eaten too much of it', but rather what trouble, and why, and which of the things in the human being it is inimical to. (20.3-4).

Medicine ought to provide an account of the effects of food, drinks, and exercise on human beings and an account of the reasons or causes of those effects. That is, the doctor should know "what the human being is in relation to foods and drinks" and "in relation to other practices" (e.g. exercise, bathing, etc.).

In effect, this passage argues that the doctor's body of knowledge should be constituted by an account of regimen. Regimen, or dietetics (*diêta*) is the science of managing the body's humors in order to maintain and restore health.[223] The science developed in fifth and fourth century Greece, having been imported – mythically, like many other *technai* – from Egypt. Regimen is a holistic science; it deals with all aspects of life: one's sleeping, eating, exercise and sexual habits. It prescribes times of day during which to eat and activities with which to occupy oneself between meals. It makes instructions regarding best partners, education, and – in general – what one ought to believe about the world. But fundamentally, regimen is a science dealing with food and

[223] For discussions of pre-Galenic dietetics, see: Craik 1995, 387-402; Edelstein 1967; Nutton 2004, 96-8; Smith 1980 and Wilkins 1995, 343-50.

drink. It explains how much of what sort of thing one ought to eat or drink in order to keep his health.

Techniques of regimen changed in the late fifth and fourth centuries. Originally, regimen was not a philosophical or theory-laden science. It had consisted exclusively in the administration of food and drinks.[224] However, in the late fifth century, the doctor Herodicus of Selymbria communicated his medical findings to intellectuals and philosophers (*Rep.* 405d-406c).[225] Afterwards, there was a flurry of interest in spelling out the details of regimen in a more theoretical and systematic form. Several treatises on regimen date from this period of burgeoning theoretical inquiry: *Regimen, Epidemics, Regimen in Health, Regimen in Acute Diseases, Airs Waters Places* and *Nutriment.*

3 Rules in the Hippocratic Corpus

We have seen that *On Ancient Medicine* is a treatise that argues for medicine as the study of regimen. We should now consider the fact that it is also commonplace in treatises on regimen to invoke general principles in the determination of the mean and in determining how best to restore the patient to his mean state. In this section of the chapter, we will see several kinds of principles that the doctor would have used to determine the mean in relation to a specific patient.

Before considering these principles, a note about terminology is in order. By the term 'principle' or 'rule,' I have in mind an idea that is not always translated in the Greek text as such, but which is implicit in the giving of the sorts of rules that will be discussed below. However, if the Greek does have a term for 'rule,' then it is '*nomos*' or *'logos*.'

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[224] Nutton 2004, p. 96.
[225] See also *Regimen* I.1, which reports that "many" have written on the subject of regimen. Similarly, see Democritus, DK 58.

Nomos is most familiar to us in its translation as 'law.' In the Hippocratic Corpus, it is used – primarily in the singular – to capture the idea of a doctor's protocol – as in 'rule of law' (i.e. as opposed to 'rules of procedure').[226] *Logos* is also used to express the idea of a rule or a principle that the doctor ought to follow (e.g. *Regimen in Acute Diseases,* 7).

The Hippocratic doctor would have used a wide swath of principles in treating patients, and we can see this well by taking the Hippocratic work *Places in Man* as an example. One of the earliest or the earliest treatise in the Hippocratic Corpus,[227] *Places in Man* is wide ranging in themes, dealing with all aspects of the doctor's art. In particular, it deals with the physiology of the human being, the aetiology of diseases, treatment of patients, general principles of medicine and gynaecology. Moreover, the treatise was probably written for the instruction of neophyte doctors,[228] so it presents a clear picture of the basic knowledge that the doctor would have been expected to possess. On all counts, then, the treatise will provide us with a good sense of the principle to which the doctor would have appealed in treating patients. In what follows, I will proceed as if asking: what must the doctor know in order to treat his patients?

First of all, the doctor would have had an account of the patient's physiology. *Places in Man* operates with a rudimentary and standard account of humors – an account very much like the one found in the seminal *Nature of Man,* but far less detailed and rigorous in exposition.[229] According to humoral theory, the human being is composed of

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[226] E.g. *Articulus* 18, 10
[227] Craik 1998, 29 and 33.
[228] Ibid, 18-20.
[229] Ibid, 14-5.

four basic qualities – hot, cold, wet and dry. However, in *Nature of Man,* this group includes phlegm rather than water. In turn, phlegm has a wide range of roles in the body, for it can be associated with both health and illness. As evidence of health, phlegm is associated with the swelling of sexual organs. As evidence of illness, on the other hand, phlegm takes the form of pus or ichor.[230]

Besides the humoral theory, a second aspect of patient physiology in *Places in Man* is the theory of flux (*rheuma*). The flux is a movement of a moisture-like substance that flows from various parts of the body, such as the head or the belly. While typically manifested as phlegm, the moving agent can be blood or bile.[231] The process of sweating is a relatively simple example of a flux. When the heat of the body increases, the vessels of the body expand, giving way to increased flow of blood through the vessels (9). This flow is the flux. There are seven fluxes, all of which start from the head. (These can conveniently be thought of as pathways starting from the head and leading to various parts of the body through which the various forms of moisture could course.) The fluxes terminate in places such as the nose, ears, eyes, belly and back.[232]

In addition to knowledge of physiology, the doctor would have also possessed an understanding of the aetiology and nature of disease. In *Places in Man,* disease is caused primarily by the imbalance of humors in the body. This imbalance, in turn, would have caused a disruption to the fluxes. Disruption might have taken many forms: aggregation, corruption or exceedingly fast flow.[233] One such form of disruption was fixation, the

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[230] Ibid, 14-5 and 177-8.
[231] Ibid, 131-3.
[232] Ibid, 137-9.
[233] Ibid, 234-5.

state in which one of the moisture-like substances would have become lodged somewhere in the body. Angina, for example, was the condition in which blood became fixed in the vessels at the back of the neck (30). The disrupted fluxes might manifest themselves in the form of various liquids and stuffs secreted or emitted from the body's various orifices – e.g. pus and vomit.

As for treating disease, the doctor might ascertain the nature of a patient's illness by making note of these kinds of signs. For example, an improper flux to the spinal marrow can be recognized by the dryness of the head, nose and eyes. The patient's vision becomes weak. The patient himself becomes pale and has difficulty coughing up mucus. The front of the patient's body will be dry, while the back will be moist (10.3). There are signs for improper flux to other parts of the body as well. For instance, a patient with a flux to the eye will have phlegmatic and swollen eyes (13.1). If the flux comes from the patient's flesh and bones rather than his head, the skin on the head will swell; sores will develop and erupt; and the patient will shed tears. However, he will not feel pain or experience blurred vision. The liquid expelled through his eyes will be salty (13.3) Again, flux to the chest can be detected by ascertaining whether the patient feels pain at his side and near his collar bone. Flux to the chest is also accompanied by fever and a greenish color on the tongue. The patient will cough up thick sputum (14.1). One last example: excess of bile can be detected through the following signs: bright or livid hues in the eyes and nails; sores and livid area around the sores; sweating on just one part of the body; and green colored expectorant (16.1). These are the signs of pleurisy.

With these signs in mind, the doctor should decide how to treat his patient. Therapies were directed at restoring the proper fluxes to the body, which often meant

manipulating of the amount of wetness or dryness in the flux, since disease was caused by excess or deficiency of moisture in the flux. Take, for example, the case of flux just discussed. If the doctor sees the signs of pleurisy, *Places in Man* directs him to treat the patient in the following manner. First, the doctor should let the fever progress for seven days. During this time, he should prescribe vinegar water or vinegar-and-honey water. The patient should be encouraged to drink as much of these as possible. (The aim is to increase the amount of moisture in the body so as to dislodge or break up the matter obstructing the flux.) The patient should take warming drugs and have a bath on the fourth day of his illness. On the fifth and sixth days, the patient should be anointed with olive oil. Finally, on the seventh day, the doctor should attend carefully to the state of the fever. It should begin to slack starting on the seventh day. If the patient does not seem to be recovering, he should be bathed in warm water so as to induce sweating – in turn, to let off some of the heat his body has been accumulating (17.1).

For flux to the eye, *Places in Man* recommends the following therapy. First, the patient should receive a drug. If the patient experiences only slight flux and irritation, the drug should both dry the eye and make it moist. That is, it should dry the eye, but induce watering (13.2). Along with the medication for the eye, a drug ought also to be administered to the nose, and this should be done every day or every other day, its dosage increasing little by little. The drug for the nose should have drying properties in case any of the excess moisture in the direction of the eyes changes course and travels to the nose (13.2).

Therapy for illness could be accomplished either through diet or more extreme measures such as surgery and cautery.[234] For example, an enlarged spleen would have been treated initially with drugs – the sort of drugs that evacuate water from the body – and with foods that are moist or phlegmatic in nature (24.2). However, if these were to fail, *Places in Man* recommends 'gentle' cautery, since the cautery will be a more aggressive means of drawing water from the body: 'cauterize around the cricle of the navel, and no on the navel itself, and drain it every day' (trans. Craik)(24.2). Similarly, surgery was sometimes called for as a last resort. (In general, the Hippocratic treatises are cautious about the need for surgery.) For example, *Places in Man* recommends trephinning for skull injuries, but only in cases in which there is danger of pus accumulating beneath the skull. This dangerous procedure involved boring a hole into the head, which would have allowed the pus and other noxious substances to escape from the wounded area. After the trephinning has been completed, the patient should be given drying drugs and be bathed (32.1).

Most of these treatments follow the allopathic principle – namely, illnesses caused by imbalance among the humors can be rectified by applying the opposite quality to the offending humor (e.g. excessive moisture can be treated with a drying agent).[235] The

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[234] Kosak notes that the main therapeutic alternatives to allopathy in the field of regimen were: change (*metabolê*) and expulsion (*apostasis*) (Kosak 2004, 114 ff.). Whereas allopathy involved the administration of substances that had opposing forces, change involved the alteration of a patient's diet and environment to restore the balance of forces within his body. Many doctors warn against the dangers of rapid or radical change (e.g. *Nature of Man,* 10). Clearly, change as form of therapy was closely related to allopathy. A third form of dietetic therapy is expulsion, which involves the expelling or purging of a dangerously excessive substance within the body.

[235] What motivates the desire for such principles? One might suggest that a desire for abstraction does so. According to Hankinson, for example, such principles evidence a

allopathic principle is a reflection of a scientific model of the human being according to which the human being exhibits a balance of different or opposing humors, such that disease is a manifestation of imbalance between or among these humors. This sort of picture of the human being is symptomatic of a more general tendency in Presocratic, Platonic and Aristotelian science to see the natural world in terms of opposing forces.

However, it is important to note that *Places in Man* does not give its unmitigated support to the allopathic principle. The treatise presents two sorts of cases designed to challenge the merits of allopathy (42.1-3). The first case is that of illnesses that have at least two causes. For example, fever can be caused by either excessive moisture or excessive dryness in the body. Dryness was often associated with declining health or advancing age (e.g. Aristotle, *HA* II.2). Hence, the author of *Places in Man* writes that 'what is more dry is inclined to contract illnesses and suffer more…for an ailment in a dry situation is fixed and does not let up" (I.1). Notice the consequences for the doctor attempting to treat the fever. If he is uncertain of the cause of the fever, he will also be uncertain of the proper treatment. If the fever is caused by dryness, it is cured through moisture – e.g. baths and drinks. On the other hand, if the fever has been caused by excessive phlegm, it ought to be cured by substances with drying properties.

Earaches also have two kinds of cause and, therefore, two kinds of treatment. Earaches are caused by flux from the ear, characterized by an overabundance of either

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desire to explain and control physical phenomena on the basis of an abstract causal theory (Hankinson 2003, 54). "Both the structure of the pathological theory and the insistence upon the intelligibility of disease and bodily function and dysfunction are products of the same intellectual attitudes as those which nourished Presocratic speculation" (Hankinson 2003, 53) – namely a desire to explain physical phenomena on the basis of an abstract causal theory.

hotness or coldness. One method of treatment is to administer a drug with heating properties (12.1). "For the patient who is gripped by pain, the treatment is to warm up a drug with heating properties, dilute it with butter almond oil, insert it in the ear and apply a cupping vessel behind…." (12.1). But if the heating properties do not work, the doctor should switch treatments and attempt to cool the area (12.2). In all cases like that of the fever or the earache, the practical reality is that the doctor should try administering one sort of thing; if this does not work, the doctor ought to try the opposite. "Always change the treatment from a method which does not effect a cure; and if a method makes things worse, try the opposite. If the treatment tends to bring improvement, change nothing at all in the treatment applied; do not desist from it and do not add anything further" (42.2; cf. 12.2, 34.1).

A second case also raises problems for the allopathic principle – namely, the allopathic treatment sometimes *harms* a patient. That is, the treatment that would typically work for a patient actually harms the patient. Such patients have weak constitutions. As a result, the treatment overpowers their constitution, harming rather than helping. Indeed, as the author claims, 'the very things which make the body strong dominate the body and thereby effect the opposite (43.1; cf. 44.2-3; *VM* 6-9). For example, a hot bath weakens the body if one's health is not up to the bath. If it is stronger, the bath is good for the body (43.2). We have seen this idea in *On Ancient Medicine* as well. For there, too, the idea is that regimen is healthy for the patient provided that it is neither too strong nor too weak, given the patient's constitution. Similarly, the operative principle in *Places in Man* is the idea that health follows from a diet that is neither too strong nor too weak, depending on the particular body in question.

Given these problem cases, the author concludes bombastically that the only principle in medicine is that there is no "fixed principle" (42.4).

> Medicine is a matter of fine balance. If a man understand this, he has a fixed principle, and he understands the presence or absence of inherent qualities, knowledge of which is balance in medicine: that is, that loosening agents may become non-loosening and that other things are (similarly) contraries; and that the most contrary things are not most contrary …. (*Loc.* 44.1)

The only fixed principle is the need for flexibility. For the doctor must know the strength of the patient's constitution relative to the strength of the regimen or treatment administered. The relative strength of the two determines what kind of effect treatment will have on the body. The consequence is that, in many cases, the doctor has to be attentive to the effect of the treatment on the body – and switch to its opposite, if need be (34.1). For the allopathic principle does not always result in the increasing health of a patient. The patient's individual consistution and response to a treatment is decisive. We have seen this point made elsewhere. As *On Ancient Medicine* suggested, the doctor must also know how food and drink will affect *individual* patients (20.4-6). Some people are invigorated by cheese, find it nourishing and filling. Others find that it causes digestive difficulty and weakness. Similarly, some people can drink three glasses of unmixed wine without batting an eye; yet for others, the dose would be overwhelming. *Places in Man* recommends the same attention to the individual in noting that, at base, medicine has "no fixed principle."

But does the lack of a "fixed principle" mean that the doctor employs no principles or generalizations in determining the best way to balance the patient's humors? This does not seem to be the case. We can see this by considering an imaginative

reconstruction of a treatment session with a hypothetical doctor trained through *Places in Man.* Suppose that an ill patient visits this doctor. The doctor must first ascertain the nature of the person's illness. Initially, this involves reading the signs or the symptoms of illness. We encountered several such descriptions of signs above. For example, the signs of flux to the spinal marrow are: dryness of the head, nose and eyes; weak vision; pallor, moist backside, dry frontside, and difficulty expectorating. The signs of flux to the eye are: swollen eyes, erupting sores, shedding of tears and salty pus through the eyes.

The diagnostic process may be complicated by the many relevant details about the patient's life. While *Places in Man* does not dwell on this point, closely related treatises such as *Regimen* suggest that a doctor might have to inquire about many facets of a patient's life and situation in order to complete the diagnostic process. He must ask about matters such as: the patient's habitual eating patterns (one or two meals a day); the patient's exercise and bathing habits; and the geographical location of his home. Does the patient live close to brackish water? Does he live in a valley or in an area that has winds that characteristically bring certain illnesses during certain parts of the year? Of course, the doctor must also ask about the progression of the illness so far: how long have you had this? How did it start? How severe was the pain on that day? These details help the doctor to establish the progression of the disease so far. As we saw above, the Hippocratic also knew that diseases manifested certain patterns of development.

In the diagnostic stage of the doctor's treatment, we see in the doctor's deliberation the interplay of general and particular considerations On the one hand, the doctor knows the various signs of flux to the spinal marrow. But the signs that the patient

manifests might be consistent with another illness as well. For example, flux to the spinal marrow is accompanied by pallor. But pallor may also be a sign of the enervation associated with pneumonia. Thus, the doctor has to go back and forth between what he knows about the general patterns of disease, on the one hand, and about the particular history of the patient. He will have to inquire about the patient's recent history: do you also have a pain in your chest? Are you also sometimes feverish? Does anyone in your household have a similar ailment? By going between knowledge of the general characteristics and patterns of particular diseases and the specific symptoms of the patient, the doctor is ultimately able to arrive at a hypothesis about the nature of a patient's condition.[236]

Once the doctor has established a first-round diagnosis of the patient's condition, he turns to the treatment of the condition. Again, as we saw above, the doctor employs principles to arrive at such a treatment. For example, as *Places in Man* instructs, pleurisy should be treated according to a set schedule: the patient's fever tolerated for seven days, during which time the patient should be administered a battery of remedies including vinegar water and honey-vinegar water, warming drugs, a bath, and anointment with olive oil. Similarly, flux to the eye should be treated with drugs that have drying properties, and these should be administered to both the eye and the nose, their dosage increased little by little each day or every other day. Some diseases required more aggressive treatments. An injury to the skull, for example, might require trephinning, and this procedure, too, would have been completed according to a set schedule. Once the trephinning is complete, the patient should receive drying drugs and a bath.

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[236] There is an excellent description of this process in Montgomery 2006, 90-1.

There is need for sensitvity to a change in a patient's fortunes. A doctor may do everything right, and still the patient's health declines. In such cases, the doctor must be vigilant about the path of the patient's recovery if he is to change a patient's therapy or reverse a therapy that is causing harm. Thus, the doctor continues to be involved in the patient's case long after the intial stage of diagnosis and treatment. It is probably for reasons such as these that the author of *Places in Man* remarks that

> …It is not possible to learn medicine quickly…. It is impossible for any fixed expertise to come about in it…. [for] medicine now and at other times does not do the same thing; and does opposite things to the same individual….(41.-2).

Does any of this speak to a lack of principles in determining the best way to restore the humoral balance of a sick patient? If anything, we see quite the contrary. From the stage of diagnosis to the stage of treatment, the doctor appeals to principles that express medical knowledge about the various clues that diseases leave for diagnosticians and to principles that express medical knowledge about the best way to treat those ailments, once their nature has been determined. These principles included claims about the signs of illness (e.g. pallor, fever, shedding of tears, and so on). They also included claims about the way to treat illness – claims that were quite specific in some cases (e.g. a drying drug should be administered to the eye in increasing doses, little by little, every other day).

In my view, these principles are the helpmates to the doctor's determination of the mean for a patient. That is, they help the doctor determine the nature of the patient's failure to have a balanced set of humors. They also help the doctor to determine how best to re-establish that balance among the humors. As we have seen many times already, the Hippocratics were committed to the idea that such helpmates could be useful only to a

degree. For, at some point, the doctor must use his judgment to determine just how much of a drug was appropriate for a patient – given his or her constitution – and just how much of change to diet that patient could sustain towards his or her health. Thus, the Hippocratics acknowledge that general knowledge is very important in the treatment of patients, but that they are also not sufficient for making a patient healthy. In addition, the doctor must get to know the patient – who he or she is, in particular; what makes the person different from all others, and what course of treatment might, therefore, best restore this patient to health.

Conclusion

Aristotle argues that the virtuous mean in determined "relative to us" (*pros hêmas*). Recall that the particularist argues that the standard (*horos*) in light of which an agent selects the mean (*NE* VI.1, 1138b18-24) is not constituted by principles. Treatises on regimen presents a counterexample to the particularist reading of Aristotle's doctrine of the mean. First of all, one such treatise on regimen – namely, *On Ancient Medicine* – offers an account of the mean that closely resembles Aristotle's virtuous mean. For it argues that doctors should determine the mean relative to patient's particular cases. Second, treatises on regimen like *On Ancient Medicine* endorse a role for action-guiding principles in the selection of the mean. The doctor must know about *phusis* in both the general and particular sense in order to deliberate successfully about a patient's treatment. We got that idea by seeing that a correct application of the doctrine of the mean involves adjustment of general rules of diet to particular patient's constitutions. If we were to transport the same lesson to Aristotle's virtuous mean, we would say that the mean is determined with reference to particular cases, but also in light of general action-

guiding principles. Thus, on this score, too, the particularist reading of Aristotle is problematic.

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