

ANCIENT MODELS OF MIND

Studies in Human and Divine Rationality

EDITED BY

ANDREA NIGHTINGALE

AND

DAVID SEDLEY



CAMBRIDGE
UNIVERSITY PRESS

Contents

<i>List of contributors</i>	<i>page</i>	<i>ix</i>
Introduction <i>Andrea Nightingale and David Sedley</i>	I	
1. Plato on <i>aporia</i> and self-knowledge <i>Andrea Nightingale</i>	8	
2. Cross-examining happiness: reason and community in Plato's Socratic dialogues <i>Sara Abbel-Rappe</i>	27	
3. Inspiration, recollection, and <i>mimēsis</i> in Plato's <i>Phaedrus</i> <i>Kathryn A. Morgan</i>	45	
4. Plato's <i>Theaetetus</i> as an ethical dialogue <i>David Sedley</i>	64	
5. Contemplating divine mind <i>Allan Silverman</i>	75	
6. Aristotle and the history of skepticism <i>Alan Code</i>	97	
7. Stoic selection: objects, actions, and agents <i>Stephen White</i>	110	
8. Beauty and its relation to goodness in Stoicism <i>Richard Bett</i>	130	
9. How dialectical was Stoic dialectic? <i>Luca Castagnoli</i>	153	

10.	Socrates speaks in Seneca, <i>De vita beata</i> 24–28 <i>James Ker</i>	180
11.	Seneca's Platonism: the soul and its divine origin <i>Gretchen Reydam-Schils</i>	196
12.	The status of the individual in Plotinus <i>Kenneth Wolfe</i>	216
	<i>A. A. Long: publications 1963–2009</i>	225
	<i>Bibliography</i>	237
	<i>Index</i>	248

Introduction

Andrea Nightingale and David Sedley

I

This book started life at a conference which its two editors organized to honour Tony Long, better known to the world of scholarship as A. A. Long. It was held at his own university, the University of California, Berkeley, in September 2007, to mark his 70th birthday. “Models of Mind” was known to us as the working title of a long-term project of Long’s own, and seemed to us to capture a theme that has, more than any other, been the hallmark of his truly seminal contribution to the study of ancient philosophy over four decades and more.

Tony Long was born in England in 1937. Since 1991 he has been Irving Stone Professor of Literature in the Department of Classics at Berkeley, where he is also an affiliated professor in the departments of Philosophy and Rhetoric. But his education and the first part of his professional career were set elsewhere. He took his BA and PhD degrees at University College London. There, among many leading scholars who taught and influenced him, special mention must be made here of David Furley, whose exceptional incisiveness and intellectual clarity in the study of ancient philosophy clearly passed from teacher to pupil. However, Long was not yet specializing in ancient philosophy, and his doctoral thesis (completed in 1964 under T. B. L. Webster) was in fact on Sophocles, later becoming the basis of his highly regarded 1968 book *Language and Thought in Sophocles: A Study of Abstract Nouns and Poetic Technique*.

It was during his tenure of his first three posts – the first at Otago, New Zealand, the second at the University of Nottingham, and the third back at his alma mater – that Long developed his interest in Stoicism. This started from a study of Plutarch’s anti-Stoic works, and led on, in his early years as a lecturer at UCL, to his organization of a seminar on Stoicism at the Institute for Classical Studies. That period saw the emergence of some of his own classic papers on Stoic ethics, logic, and epistemology, and

the publication of his 1971 edited anthology, *Problems in Stoicism*, covering all the major areas of Stoic thought, which nearly four decades after its publication continues to be regularly consulted and cited.

During the 1970s, the study of Stoicism enjoyed a remarkable renaissance. In this period, Stoicism was, almost for the first time, taken seriously as philosophy, on a par with the work of Plato and Aristotle. The rehabilitation of Stoic ethics that was a key part of this renaissance was due more than anything else to Tony Long's seminal studies, and to now classic studies by others that he put on the map by the timely publication of *Problems in Stoicism*. During his career he has published on a comprehensive range of ancient philosophers and topics, but a very substantial proportion of his total output has been on Stoic ethics, including approximately thirty articles, his scholarly edition (1992, with Guido Bastianini) of the Hierocles papyrus, and his brilliant 2002 book on Epictetus. It is no exaggeration to say that, cumulatively, these studies have transformed the scholarly landscape.

It was also during the seventies, 1974 to be exact, that Long published his celebrated book *Hellenistic Philosophy*. Frequently reprinted, it has also been translated into seven languages. Thirty-five years after its original publication, it remains a uniquely accessible, lucid, and inspiring introduction to its subject. It has been complemented since by the two-volume sourcebook *The Hellenistic Philosophers* (1987, co-authored with David Sedley). His other publications on Hellenistic philosophy are too numerous to describe here, but two in particular can be picked out, because they exemplify his special gift for shedding light on the period by focusing on its heritage from earlier traditions. "Heraclitus and Stoicism" (1975–76) and "Socrates in Hellenistic philosophy" (1988) remain, decades after their publication as journal articles, *the* classic studies of their respective topics.

After UCL, Long spent the years 1973–83 as distinguished holder of the Gladstone Professorship of Greek at the University of Liverpool, and as a key member of the Manchester–Liverpool ancient philosophy group, whose other regular participants included A. C. Lloyd, Henry Blumenthal, and George Kerferd. Long moved to Berkeley in 1983, and has remained there to the present.

It is impossible to do justice in a short space to the extraordinary range and depth of Tony Long's publications, which are listed in full at the end of this volume. In addition to his huge contribution to ancient philosophy, he has never abandoned his original interest in Greek literature, on which he has published a steady stream of articles over the years. Satisfyingly, his literary and philosophical skills came together in two classic articles

on Homer, one on the Homeric value system (1970), the other on Stoic readings of Homer (1992).

Tony Long has received widespread recognition for his exceptional contribution to scholarship. Many honours could be listed, but we will restrict ourselves here to two tokens of his extraordinary standing among his peers: his election in 1992 as a Corresponding Fellow of the British Academy, and in 2009 as a member of the American Philosophical Society.

II

At the September 2007 conference in Tony Long's honour, there were ten speakers. Of these, nine were former students of Long's, all now holding posts in high-ranked universities and colleges. The tenth was Alan Code, who had been Long's close colleague at UC Berkeley for many years. The papers of these speakers have evolved into ten of the twelve chapters in the present volume. (The remaining two chapters have been contributed by us, the two editors, ourselves former graduate students of Long.) Ten others of those who attended the conference generously acted as commentators on the papers. These were Keimpe Algra, Ruby Blondell, Chris Bobonich, Myles Burnyeat, John Ferrari, Mary-Louise Gill, Jean-Baptiste Gourinat, Brad Inwood, Richard McKirahan, and Henry Mendell. We express our warm thanks to all of these; to the UC Berkeley Department of Classics and the Townsend Center, which generously funded the event; and finally, to Michael Sharp, Joanna Breeze, and Nigel Hope, and two anonymous referees for Cambridge University Press.

III

In this collection of studies, three familiar Greco-Roman standards of rationality are placed under joint-examination: (a) the divine intellect; (b) a perfected human being, whether this be Socrates or the idealized sage postulated by Stoicism; and (c) the inherent powers and structure of human reason.

The search for a model of intellectual understanding is an early and recurrent feature of Greek thought. It is visible, for example, in the early Greek thinkers (we here heed Tony Long's plea not to call them "Presocratics") Xenophanes, Heraclitus, and Parmenides. These authors all contrast the perfect knowledge possessed by the gods with the blinkered limitations of the human perspective, adding their own expressions of relative optimism or pessimism about our capacity to transcend the latter and aspire

to the former. In Plato the same motif becomes the ideal summed up as “becoming as like god as is possible”; and he is followed in this by nearly all subsequent philosophers until the end of antiquity, including thinkers as diverse as Aristotle and Epicurus. There can be little doubt that not only the earliest but also the most enduring model proclaimed for the human intellect is god.

The chief competing paradigm is the human sage. Although the tradition of the revered sage is no doubt as old as civilization, its penetration into philosophy is due above all to two figures, one of them elusive and legendary, the other very much flesh and blood. The former is Pythagoras (sixth century BCE), whose superior understanding was linked in particular to his reported recollection of many past lives. The latter is Socrates, whose name will be omnipresent in this book. Condemned to death by an Athenian jury in 399 BCE, Socrates became the first philosophical martyr, a fact which bulks large among the reasons for his subsequent canonization as a philosophical paradigm. Stoicism, which emerged a century after Socrates’ death, is in large measure an attempt to construct a formalized Socratic philosophy; the figure of the sage, around whom much Stoic theorizing is built, is recognizably modelled on Socrates.

Although he seems to have deliberately stayed at the margins of political activity, Socrates portrayed his own conduct in Athens as a divinely ordained mission to make the citizens better people. There was therefore little doubt that the paradigm of a human life that he bequeathed was a deeply moral one. But the burning question of how others might set about achieving the same understanding for themselves led Socrates’ followers, and above all Plato, to look for the ultimate sources of his insights. Once these were located in a higher reality (in Plato’s case, the “Forms”), it became legitimate to wonder whether perfect human happiness might not lie in enjoying pure contemplative knowledge of that reality, rather than in the same knowledge’s application to the here-and-now. Whether the chosen paradigm turned out to be god or a perfected human being like Socrates, the question remained: in what aspects is this ideal model to be emulated? Whether the imitation was seen as intellectual, moral, or both in equal measure is a question that has to be addressed independently for each thinker or school, from Plato to the Neoplatonists.

A third perspective, complementary to the first two, finds its model of mind not in paradigmatic individuals but in the powers of reason as such. Reason, whether found in god, in a Socrates-figure, or in you or me, is essentially one and the same power, albeit developed to different degrees. The philosopher’s task is therefore to uncover the structure of reason itself,

in order to put it on a completely firm basis and to progress towards realizing its full capacity. This is what led both Aristotle and the Stoics to develop their own respective systems of logic and of scientific reasoning.

We have chosen to put the essays in chronological order, starting with Socrates and ending with Plotinus. In different ways, these contributions reflect at least one of the three issues listed above: (a) the divine intellect; (b) a perfected human being, whether this be Socrates or the idealized sage postulated by Stoicism; and (c) the inherent powers and structure of human reason. After listing and describing these essays, we will briefly discuss the ways in which they interact with one another. As we will suggest, each essay shows how at least one ancient philosopher explores and, in some cases, posits a particular “model of mind.”

- (1) Andrea Nightingale, in “Plato on *aporia* and self-knowledge,” argues that Socrates’ “disavowal of knowledge” in the early dialogues evinces a specific kind of self-knowledge. In Plato’s mature work, the philosophical “self” – and thus “self-knowledge” – is achieved by the interaction of the individual person on earth and his or her incorporeal (and impersonal) “reason”, which contemplates the Forms.
- (2) Sara Ahbel-Rappe, in “Cross-examining happiness: reason and community in the Socratic dialogues of Plato,” defends an unorthodox interpretation of Socrates’ ethics, arguing against “egoistic eudaimonism.” Socrates, she argues, places others on a par with himself as the intended beneficiaries of moral choice. This non-egocentric ethical philosophy is based in part on an interpretation of Socrates’ “divine mission” in the *Apology* and other early dialogues.
- (3) Kathryn A. Morgan’s “Inspiration, recollection, and *mimēsis* in Plato’s *Phaedrus*” addresses the status of madness and divine inspiration in Plato’s cognitive hierarchy. She links “inspiration” to the Platonic ideal of imitating the divine. Plato, she argues, turned away from traditional religion and towards the realm of the “divine” Forms in his efforts to conceptualize the “*enthousiasmos*” of the philosopher.
- (4) David Sedley, in “Plato’s *Theaetetus* as an ethical dialogue,” maintains that in Plato’s own taxonomy this work counts as ethical because its topic, knowledge, is an intellectual virtue, most fully captured in the dialogue’s Digression, where intellectual divinization emerges as the truest realization of “justice.” This ultimate convergence between intellectual and moral virtue in Plato’s ethical thinking is then further explored through the case of temperance, *sōphrosunē*, a virtue in which young Theaetetus is declared to have progressed at the end of the dialogue.

- (5) Allan Silverman, in “Contemplating divine mind,” focuses on the theme of godlikeness as Plato’s and Aristotle’s ethical ideal, comparing their respective conceptions of god (in Plato’s case, the creator god of the *Timaeus*) and drawing the consequences for their respective views of an ideal human life. The chapter is notable for the sharp contrast it makes between Plato and Aristotle on this score – the ideal Platonic life does not, as often thought, involve a flight from the human world, but Aristotle’s may do so. He bases this in particular on the key role of the Good in the Plato’s conception of the highest learning.
- (6) Alan Code, in “Aristotle and the history of skepticism,” moves the spotlight onto distinctively human rationality. Aristotle, he argues, made a constructive use of skeptical puzzles in his efforts to find secure first principles for knowledge. Code highlights Aristotle’s rejection of the requirement that knowledge must always be backed up with proof or demonstration; indeed, even puzzles that have not been fully solved do not present an obstacle to the search for principles.
- (7) Stephen White’s “Stoic selection: objects, actions, and agents” scrutinizes one aspect of the nature of moral thinking in Stoic ethics. Starting from what may seem a terminological technicality concerning the Stoic concept of moral “selection,” he develops a novel analysis of the mode of deliberative reasoning that, at least in its ideal form, characterizes the Stoic sage.
- (8) Richard Bett, in “Beauty and its relation to goodness in Stoicism,” keeps the focus on the Stoic value system. He shows how two apparently distinct kinds of beauty, that of soul and that of body, are – when viewed from a cosmic perspective – inseparable in Stoic eyes, given that the paradigm of beauty is the supremely rational beauty of the world itself. Bett also shows that the two kinds of beauty coalesce at a lower level, in Stoic erotic theory.
- (9) Luca Castagnoli, in “How dialectical was Stoic dialectic?,” examines a style of rational thought regarded as distinctively human – although, as he points out, it was said that, *if* the gods used dialectic, it would be that of Chrysippus. His question is whether, as in the case of its direct forerunner – Socratic dialectic – any significant part is played in Stoic “dialectic” by interpersonal interrogation, as the literal meaning of the term implies. He defends a strongly positive answer, based on close examination of the Stoic self-refutation argument against the denial of proof.
- (10) James Ker, in “Socrates speaks in Seneca, *De vita beata* 24–28,” offers a detailed examination of how Seneca, as a Stoic, appropriates the name

and voice of Socrates to provide a moral paradigm fit for his own Roman context. Ker focuses in particular on *De vita beata*, arguing that Seneca uses Socrates to argue for various Stoic positions, including the Stoic doctrine of “preferred indifferents.”

- (11) Gretchen Reydam-Schils, in “Seneca’s Platonism: the soul and its divine origin,” charts Seneca’s incorporation into his Stoicism of motifs drawn from Plato’s dualism of divine and human realms. She pays particular attention to the Platonic antitheses between human and divine reason, the intelligible and sensible worlds, and body and soul, showing how Seneca, by exploiting the resources of Stoicism, is able to maintain a careful distance from contemporary Platonism.
- (12) Finally, Kenneth Wolfe, in “The status of the individual in Plotinus”, maintains the focus on this divine–human dualism by examining how Plotinian metaphysics divinizes the human rational self, linking it to the transcendent realm through a doctrine of individual forms. Plotinus, he claims, argued that there were forms for all human individuals; knowing the essence of a particular sensible human being, then, entails knowing his or her intelligible form.

Essays 1–5 and 11–12 deal with the interrelation between (a) the divine mind and (c) human reason. The remaining essays focus mainly on (c) human reason taken in its own right. But (b), the paradigmatic sage, identified with or inspired by the figure of Socrates, is a prominent linking theme, especially in chapters 1–4 and 7–10. Other recurrent motifs include the requirement of self-knowledge (chapters 1, 4, 12), and the constructive role of puzzlement in intellectual progress (chapters 1 and 6).

All who have contributed these chapters were eager to give a concrete expression to the special affection in which they hold Tony Long, as a scholar, as a teacher, and above all as an exceptional human being. He has done a huge amount for his pupils to make them what they now are, but has never expected that they should adopt his own intellectual style. All have benefited from the model that he has provided, as well as from his unfailing advice and support both during their graduate studies and afterwards. But he has always encouraged independence and diversity. It is to be hoped that this book will serve as a testament to his success.

CHAPTER 6

Aristotle and the history of skepticism

Alan Code

In affectionate appreciation of my dear friend and colleague,
Tony Long.

PUZZLES AND THE SEARCH FOR KNOWLEDGE

In the interest of furthering our understanding of Aristotle's place in the history of skepticism, A. A. Long has urged that Aristotle left to posterity a methodology that takes certain skeptical strategies that could be used to present challenges to claims to knowledge and employs them instead in aid of maintaining a search for knowledge.¹ In the course of illustrating and defending this conclusion in his article "Aristotle and the History of Greek Skepticism", he lucidly highlights a number of respects in which Aristotle's methodological discussions reveal an awareness of the usefulness for his own purposes of argumentative ploys that in some form or other play a role in the skeptic's arsenal. Aristotle in fact does exhibit an awareness of the need to answer on behalf of his epistemology a variety of objections that would, if successful, undermine the possibility of knowledge as he conceived of it. In this essay I discuss some of these strategies as well as the general shape of his attitude towards the use of puzzles in philosophy. My focus will not be so much on the interpretation of particular texts as on the general epistemological stance that Aristotle takes on this issue, and accordingly I have tried to avoid matters of scholarly controversy to the extent that they do not impact very general methodological points. In particular, I wish to highlight his firm rejection of the requirement that knowledge always be backed up with proof or demonstration and to connect it with the view that puzzles are not an obstacle or impediment to the search for principles. Puzzles about some subject matter do not always

¹ Long 1981: 105.

have to be solved before principles are established,² and in cases where puzzles have led some to deny or question something Aristotle takes to be a principle he sees opportunities to give helpful diagnoses of their errors and persuade them of the truth.

Towards the beginning of his seminal article, Long schematically compares a skeptical with an Aristotelian attitude towards the role of puzzles, or *aporiai*, in philosophical inquiry. Although puzzles play a crucial role both in the account that Sextus Empiricus gives of the origin of skepticism and in Aristotle's own treatment of philosophical methodology in his *Metaphysics*, Aristotle's attitude towards them is strikingly different from that exemplified in the various forms of ancient skepticism. For Aristotle the statement and subsequent elaboration of puzzles puts one in a better position to discover the truth. One role of this kind of examination is, in Long's words, that it "exposes the problems to be considered and provides possible material for their solution."³ When discussing the need for an examination of puzzles as a preliminary to investigation, *Metaphysics* 3.1 tells us that somebody who has not first explored the puzzles is like a traveler who sets out on a journey without knowing their destination.⁴ Puzzles can help structure an inquiry, and familiarity with them makes one a better judge of the truth.⁵ Far from being an impediment to knowledge, the puzzles make clear a goal or destination for philosophical inquiry. Going through puzzles puts one in a better position to know that one has found the truth about some matter.⁶

By way of sharp contrast, the examination of puzzles leads to suspension of judgment for the proto-skeptic as described by Sextus. The proto-skeptics initially proceeded to examine the puzzles in an attempt to determine what is true and what is false, and did so with the goal of ceasing to be troubled as to what they ought to give their approval to. One striking observation that Long has made about this is that as described so far this account could almost be borrowed from Aristotle.⁷ However, Long further explains that the attempts to settle the discrepancies led the proto-skeptic to the original goal in a completely unexpected way. The attempt to find a

² In some cases he will urge that a rival view makes a puzzle on some central issue irresoluble, whereas given his own distinctions and positive views there is no longer a problem. Such is his attitude about the unity of definable objects (*Metaph.* 8.6.1045^a20–25). Although he seems to arrive at the views that solve the puzzle independently of considerations about the puzzle, their ability to solve it is a point in its favor.

³ Long 1981: 84. As we shall see, they can also provide a clarificatory function after positive results have been obtained.

⁴ *Metaph.* 3.1.995^a34–36. ⁵ *Metaph.* 3.1.995^b2–4. ⁶ *Metaph.* 3.1.995^a36–b2.

⁷ However, as will be shown below in connection with a puzzle about change from the *Physics*, for Aristotle the treatment of a puzzle can come after the truth has already been ascertained.

criterion to settle the puzzling issues did not for them in fact end up with a criterion, but rather led to the conflicting opinions having equal weight, and from there led to a suspension of judgment. Without now pausing to consider the nuances of this account, it is enough for his point that the described result of the proto-skeptic's examination of puzzles is suspension of judgment. Sextus is clearly not describing somebody who has been put in a better position to decide or judge which opinions are true, and is not describing a methodology that succeeds in reaching knowledge.

DEMONSTRATIVE KNOWLEDGE AND THE NEED FOR PRINCIPLES

In connection with “the material which forms the basis of the Pyrrhonist's *tropoi* or ‘modes’ for suspending of judgment,”⁸ Long calls attention to the fact that Aristotle shows familiarity with argumentative strategies that later turn up in the five modes of Agrippa. In particular, he finds Aristotle to be anticipating and responding to the second, fourth, and fifth of these Pyrrhonist strategies in his attempts to avoid the charges that demonstrative knowledge is vitiated by *infinite regress* or by the use of *hypothetical premises* that themselves are not known, or is possible only on the condition that *circular proof* be allowed. Additionally, Aristotle is aware of the polemical use to which the modes invoking either *diaphonia* (irresoluble conflict) or relativity, the first and third modes of Agrippa, can be put. Thus all five of these general strategies play some kind of role in Aristotle's attempts to establish epistemological theses of his own.

A form of knowledge that was of particular importance and interest to Aristotle was demonstrative knowledge. Such knowledge is restricted to necessary truths, and is arrived at by deducing conclusions from immediate truths that are themselves in need of no further explanation. For Aristotle the scientific inquiry that leads to the resolution of perplexity and puzzlement is preeminently a search for such explanatory principles, or starting points of knowledge. All theoretical understanding proceeds rigorously from indemonstrable first principles. General truths can be known and understood by tracing observable facts and features of the world all the way back to their explanatory sources, and then locating eternal and unchanging truths in their proper place in an axiomatic structure. Aristotle conceives of demonstrative knowledge as requiring syllogistic proofs that use as premises principles that are “true and primitive and immediate and more familiar than and prior to and explanatory of the conclusion.”⁹ The idea here is to analyze a scientific demonstration as a syllogism (or

⁸ Long 1981: 85. ⁹ *APo.* 1.2.71^b21–22. All translations are from Barnes (1984).

string of syllogisms) in which every premise is either an indemonstrable first principle or is itself proven.

Although conclusions will themselves be true if the argument is valid and the premises true, more than these two features are required for genuine demonstration. Among other things, a proof must proceed from principles, and Aristotle thinks that the first principles of a science must not themselves be in need of proof or explanation. Accordingly, he rejects the thesis that all things knowable must be demonstrated, and insists that scientific proof ultimately proceeds from indemonstrable starting points. In rejecting the thesis that everything knowable must be proven he commits himself to the view that some principles are known without proof, and charges those who do not understand which propositions do not require demonstration with a lack of education.¹⁰ Not everything has or requires an explanatory account, and it is improper to look for such an account where none can be given. Indeed, he goes so far as to claim that the very people who make this kind of unreasonable demand show by their actions that they are not really convinced of their own thesis.¹¹ His claim that principles are known without demonstration is neither itself a principle nor something that he proves, but rather something he takes to be embodied in the attitude of all who engage in epistemological discussion.

It is at this point that we reach a claim that is crucial to Aristotle's own response to a variety of attacks on his version of a foundationalist epistemology. The resolution of puzzlement and the discernment of scientific truth requires that there are principles that are not known by deducing them from something else, but rather are immediately known in a non-deductive manner. The first principles are not known through demonstration, but rather are known in a better way than the scientific theorems that they explain. He says that they are the objects of *nous*, or "intellect," rather than demonstrative knowledge.¹² The kind of knowledge that we have of principles is superior to demonstrative knowledge. As we will see, Aristotle explicitly considers challenges to this picture mounted by those who would insist – contrary to what he himself believes – that all knowledge is demonstrative. If this opposing view were correct, then there would be no such thing as *immediate* knowledge of principles.

¹⁰ *Metaph.* 4.4.1006^a5–6.

¹¹ *Metaph.* 4.6.1011^a8–13. Exactly which aspects of their behavior he has in mind is not specified.

¹² *APo.* 2.19.100^b5–15, esp. 12.

In the *Posterior Analytics* Aristotle considers two different kinds of opponent to the type of epistemological foundationalism that this treatise presents and endorses.¹³ As Aristotle puts it,¹⁴ “some think that because one must understand the primitives there is no understanding at all”; alternatively, the necessity of knowing the primary things has made some people think that it does exist “but that there are demonstrations of everything.” Both types of opponent share in common the un-Aristotelian assumption that all knowledge is demonstrative, but they differ as to whether knowledge is possible.

The opponents from Party One assume the following disjunction: either there is an infinite regress of demonstrations or demonstration depends upon undemonstrated premises. To put it more fully, either the process of demonstrating the premises by means of new deductions continues without an end, or at some point the regress of deductions comes to a halt, and there is a deduction that uses a premise that is not itself demonstrated. Since this opponent is assuming that all knowledge is demonstrative, this leads to the conclusion that knowledge is not possible. In Long’s words “either the move from the posterior to the prior is an infinite or a finite series; if it is infinite, the primary truths can never be reached; if it is finite, the primary truths cannot themselves be known since they cannot be demonstrated.”¹⁵

Let us now consider the second type of objector. An opponent from Party Two does not deny the existence of knowledge, but nonetheless holds a position that has an obvious affinity with a kind of skeptical strategy. This opponent believes that there is knowledge and, like the opponents from Party One, agrees that all knowledge is demonstrative. However, this opponent takes it that the premises of one demonstration are conclusions of another. This move allows one to avoid the charge of infinite regress and yet still maintain that all knowledge is demonstrative. However, by allowing for the possibility of circular demonstration, this position rejects Aristotle’s claim that the premises of a syllogistic demonstration are better known than the conclusion. On this un-Aristotelian view knowledge does exist, but there is no privileged set of first principles that are known in a better manner, or known non-demonstratively.

Long urges that in response to this second type of opponent Aristotle plays the skeptic’s game to a *certain extent* by rejecting the possibility of circular proof. However, Aristotle’s own rejection of circular proof rests on the idea that premises that ultimately explain why other things must be the case cannot themselves be just as much in need of explanation as whatever

¹³ See Long 1981: 86.

¹⁴ *APo.* 1.3.72^b5–7.

¹⁵ Long 1981: 87.

it is they purport to explain.¹⁶ The first principles are both known and knowable in a way that does not constitutively involve their being deduced from anything else. According to Aristotle, the first principles are known in a non-demonstrative manner. Rather than acquiesce in an epistemological stance that makes room for the existence of knowledge by countenancing circular demonstration, he accepts the second horn of the dilemma stated above. The series from the posterior back to the prior terminates in a finite number of steps, and hence with premises that cannot be demonstrated. However, since it is not part of Aristotle's own position that all knowledge is demonstrable, accepting this horn of the dilemma for him does not require agreement that the premises at which the regress terminates are unknowable.

Of course this does not settle the issue, since Aristotle's claim that there is non-demonstrative knowledge in turn leads to questions as to the nature of the faculty by means of which the premises are known. As Long points out, one way in which such questions could arise is by an opponent issuing a challenge along the lines that a non-demonstrative faculty of *nous* itself requires a criterion to justify its knowing anything. Although Aristotle himself does not develop a puzzle along these lines, he does think that there are puzzles about how the first principles come to be known and concerning the faculty by means of which they are known. However, he is optimistic that clarity will be reached on these issues after a preliminary examination of relevant puzzles.¹⁷ One upshot of this examination is that there are two kinds of undemonstrated knowledge. In addition to the first principles of a science and a faculty for knowing them, there is also perceptual knowledge and a faculty of perception. In a highly condensed passage that gives rise to many interpretative challenges he describes an account of how we arrive at knowledge of scientific first principles beginning with individual perceptions.¹⁸ There is no requirement that any particular sense-perception

¹⁶ According to *APo.* 1.2.71^b29–30 the first principles are better known than the conclusions that they explain.

¹⁷ *APo.* 2.19.99^b17–19.

¹⁸ *APo.* 2.19.99^b34–100^a14. In this passage Aristotle describes a progression from these initial starting points to memory, and from there to experience (here characterized as being constituted by a plurality of memories of the same kind of thing). Perception is responsible in this way for a non-scientific grasp of universals (100^b4–5). At least this much is attributed to the perceptual faculty, and does not yet involve knowledge that is arrived at through a process of reasoning. At some point induction comes into the picture (100^b3–4), and eventually we acquire an intellectual state by means of which we grasp the truth of principles. The details have given rise to much scholarly controversy, but regardless of how they are interpreted Aristotle is committing himself to the view that there is perceptual knowledge, that it is not based on reasoning or demonstration, and that in some way or other the knowledge of first principles ultimately comes about from perception (100^a10–11).

should be absolutely certain, and no attempt to use perceptual knowledge to explain (much less demonstrate) the truth of the first principles.

That said, whether or not Aristotle ultimately has the resources to ward off such attacks, both the manner in which he delineates the two types of opponent and his rejection of their shared assumption shows that he was familiar with the use of the types of general argumentative strategies that show up later in three of the modes of Agrippa. Aristotle both saw their relevance to philosophical argumentation about the possibility of knowledge, and had thought about what stance to take towards them at least in connection with his own positive claims about the possibility and nature of demonstrative knowledge.

PUZZLES AND FIRST PRINCIPLES OF A SCIENCE

Central to Aristotle's considered response to the three Agrippan skeptical strategies that we have considered is his insistence on the existence of indemonstrable knowledge. As is well known, in *Posterior Analytics* I.2 there are three types of indemonstrable first principles for a demonstrative science, and these first principles of a science are divided into axioms and "posits." The axioms are common to all of the sciences, and without them scientific reasoning is impossible. A chief example of an axiom is one that he considers the most fundamental principle of all reasoning, the principle of non-contradiction. We will briefly consider this principle shortly. Since each science has its own domain of inquiry, in addition to the common axioms, scientists need to employ special principles that are appropriate to the kind of objects that science studies. These are what Aristotle calls "posits," and are divided into two types, definitions and suppositions. Definitions are statements that give the essence of a definable object, and say of something definable what it is, whereas a supposition or hypothesis says of something that it is (or is not). On the general picture that emerges from the *Posterior Analytics* definitions, or statements of essence, function as explanatory middle terms in demonstrative proofs of theorems.

Up until now our discussion of Aristotle's response to various opponents to his epistemology has been general and abstract, but for our purposes it is useful to consider them within the context of examples of his own practice. Here I will make some brief remarks about the deployment of these ideas in the pursuit of a genuine branch of knowledge – natural philosophy. One place where we can find him investigating existence claims and definitions is in Books 3 and 4 of his *Physics* where he goes to work on the concepts of motion, the infinite, place, the void, and time. For each

of these topics he sets out to establish whether or not it exists (and how it does or does not) and what each is. Each, if it does exist, is so basic that it is a candidate for a principle of the science, and as such its existence and nature are not demonstrable. This is not the occasion for an extended look at the methodology at work in these discussions. Instead, I will use just one example to help illuminate a role that puzzles can play in inquiry into definitions. Although the treatment of each of these topics involves *aporiai*, each discussion also leaves us with definite, positive results.

Consider Aristotle's solution of a puzzle to which he alludes in the opening line of 3.3. Although he does not explicitly formulate this puzzle as to where a change takes place, it is clear that his treatment of it makes use of a definitional principle that has already been accepted. It is important to note that his invocation of this puzzle takes place *after* the first chapter has already given us his definition of change as the *entelecheia* of the potential as such, and that the immediately preceding chapter has already asserted that the "soundness of this definition is evident both when we consider the accounts of motion that the others have given, and also from the difficulty of defining it otherwise."¹⁹ In the other cases in *Physics* 3 and 4 the puzzles come before his own positive account, but in this case the examination of the puzzle is not part of an attempt to determine the truth about the topic under investigation (change).²⁰

He starts 3.3 with the claim that "the solution of the difficulty is plain: motion is in the movable."²¹ He does not here say just what puzzle about the place of change he has in mind, but material from the immediately preceding chapter could suggest something like the following. That chapter claimed that, given his definition, the cause of motion is going to be "contact with what can move."²² Due to this contact of agent and patient, there will be some change in the agent as well, provided that the agent is the kind of thing that can move. Given that the change requires contact of agent with patient, and that if the agent is the kind of thing that can be changed it is itself changed when acting on the patient, this could give rise to a question whether the change in question is *in* the agent.

¹⁹ *Pb.* 3.2.201^b16–18.

²⁰ Henry Mendell, in comments on this essay prepared for the Models of Mind conference, has usefully classified the puzzle on change as "clarificatory" owing to the role that it plays in an investigation, and distinguishes such puzzles from the "probative" puzzles concerning the infinite, place, the void, and time. These play some kind of role in establishing the conceptual groundwork for a positive result. In either case, Aristotle is using puzzles as part of his own development of a principle and does not even consider the possibility that examining them would lead one to withhold assent (or give up the search for truth).

²¹ *Pb.* 3.3.202^a13–14. ²² *Pb.* 3.2.202^a8.

For instance, suppose that a housebuilder transmits the form of a house to some building material through some kind of direct or indirect contact with it. Aristotle has just argued that in such a transaction the housebuilder would be changed. Consequently, there must be a change that takes place *in* the agent. In that case one might reasonably wonder why housebuilding is not what is taking place in the housebuilder. However, Aristotle thinks that having given his own definition of change, and defended it by arguing for its superiority to rival attempts, he is now in a position to say that the solution to the puzzle (whatever it may be) as to where change takes place is clear. This is not simply an unrelated afterthought appended to the tail end of his discussion of change. The claim is not that the solution is clear to everybody, but rather that once we are in possession of his correct definition of change the solution is now evident.

Given his definition of change, it is clear that the change of housebuilding takes place in the materials, not in the housebuilder, because change is defined as the actuality of the *changeable*. In the case at hand, the change is housebuilding, and this is by definition the actuality of that which is able to change in such a way as to be a house. Whatever change the housebuilder may undergo owing to contact with the material, *that* change is not housebuilding because the housebuilder is not able to turn into a house, and hence is not a potential house. There is both an active and a passive or receptive capacity involved in this change, the former in the agent and the latter in the patient. The material has its own passive or receptive capacity, and housebuilding is the actuality of the potential house by the agency of something with an active power, or capacity, to affect just that change – i.e., housebuilding. Housebuilding itself is the joint actuality of both the active and the passive capacity, and there is just *one* change that is the exercise of both. This one change takes place in the patient.²³

Here, then, is one example of one kind of use of puzzles in an actual science. Aristotle's use of the puzzle does not lead to suspension of judgment,

²³ Aristotle goes on to say that this result itself has a “logical” difficulty (202^a21–22). If acting and being acted upon are different, we may further puzzle over what these two motions are in. Is the agency in the agent and the patiency in the patient, or are both in the patient? Although I do not here attempt to analyze this further development, it is worth pointing out that Aristotle's discussion involves the clarification that agency and patiency, the one being the *entelecheia* of the agent and the other the *entelecheia* of the patient, are different with respect to the account of what it is to be. Although Aristotle does not explicitly say so, unclarity on this point would be an impediment to understanding the definition of change as the *entelecheia* of the potential as such. Even though the active capacity to bring about a change is in the agent and the corresponding passive capacity is in the patient, there is nothing to prevent these two items from having a single *entelecheia* located in the patient. Solving this additional logical puzzle clears up confusion that would prevent one from understanding the definition. The removal of this confusion is necessary (though not by itself sufficient) for knowing the definition *as* a first principle.

nor is this one left unresolved. Rather, he uses a previously established first principle – his definition of change – to show how it is to be solved. The definition of change can be used in an explanation of the proposition that change takes place in the patient, and such an explanation establishes that something is the case and shows why it must be. The definition was arrived at prior to the solution of the puzzle; he is not using the puzzle to discover or establish the correct definition of change, and he does not think that it poses a serious challenge to the truth of the principle he has already articulated.

THE PRINCIPLE OF NON-CONTRADICTION

The general considerations concerning circular proof, infinite regress, and the like are for Aristotle problems about universal scientific knowledge, not problems about the determination of individual matters of fact about individual perceptual objects. Although perception plays a crucial role in the acquisition of knowledge of principles, the kind of foundationalist epistemology that he endorses does not take the form of seeking a secure perceptual foundation in certain or indubitable truths about *individual* objects of experience.²⁴ Furthermore, although he does think that the sense-perceptions of the proper objects of the senses are the least prone to error, his treatment of scientific knowledge does not present an epistemology according to which that kind of sensory knowledge is extended by deduction to other pieces of sensory knowledge of further facts about individual, perceptible objects.²⁵ In addition to perceiving colors, sounds, tastes, and so on (the special objects of the senses), there is perception of the common sensibles (motion, magnitude, shape, and number), as well as coincidental perception of various sorts (we can see the son of Diaries, for instance).²⁶ These are less reliable modes of perception, and no attempt is made to put them on a more certain basis by suggesting that we syllogistically deduce claims of that sort from the more certain perceptions

²⁴ Long 1981: 97 is quick to point out that Aristotle is not responding to a challenge “which made perceptual certainty and criteria of truth the primary problems of philosophy.” He is in agreement with the statement in Burnyeat 1981 that “Aristotle does not take his starting point to be the problem of perceptual certainty.”

²⁵ Although scientific knowledge as such is universal, insofar as particular cases can be subsumed under scientifically knowable universals there is a way in which universal truths could be applied to particular cases to extend knowledge about sensible particulars. This could be done even from inductive generalizations that did not count as scientific knowledge in the unqualified sense. However, our perceptual knowledge of sensible objects is not acquired in this way.

²⁶ *De An.* 2.6.

of the special objects of the senses. When Aristotle does discuss problems and puzzles concerning the perception of particulars, his aim is not to set perceptual knowledge on a certain and secure foundation. When looking for indemonstrable starting points he is interested in securing the starting points for scientific knowledge rather than for particular matters of fact about perceptible objects.

It is in this connection that Long has also shown the relevance to Aristotle of the different typology of skeptical strategies exhibited in the ten modes of Aenesidemus. Unlike the Agrippan modes, these classify what could be characterized as “a large body of evidence”²⁷ that includes all sorts of general facts about sense-perception. Not only do humans differ from animals in their perceptions, but perceptions differ from one human to another, and even in the case of a single person the perceptions of one sense differ from those of another. Additionally, our perceptions vary both when our condition differs (awake, asleep, healthy, ill, etc.), and when the external conditions vary. Much of this material pre-dates Aristotle and is as old as Xenophanes, Heraclitus, Parmenides, and Democritus. Some of it would have been familiar to Aristotle from the use that Plato makes of conflicting appearances in the refutation of Protagoras in the *Theaetetus*, and many of these considerations turn up in *Metaphysics* 4 in connection with his discussion of the principle of non-contradiction. In fact, he claims that those who deny this principle out of genuine puzzlement arrived at their position on the basis of perceptible objects.²⁸

At least some of the considerations that led them to this view are similar to or almost the same as material found in the ten modes. In the context of his discussion in the *Metaphysics* of various facts about how perceptions differ and vary, Aristotle does not seem to distinguish the thesis that the same thing is both true and false from the related, but clearly different, theses that everything is true and that everything is false. Perhaps for his purposes it is not incumbent upon him to do so since he is reporting the views of others, but in any case he obviously thinks that use of material from these modes fails to support any of these formulations of the thesis.

The principle of non-contradiction is for him the firmest and most secure of all of the principles, and must be known by anybody who knows anything at all.²⁹ It is formulated in a number of different ways by Aristotle, but for now the following will suffice: “The same attribute cannot at the same time belong and not belong to the same subject in the same respect.”³⁰

²⁷ Long 1981: 89. ²⁸ *Metaph.* 4.5.1009^a22–23.

²⁹ *Metaph.* 4.3.1005^b17–23. ³⁰ *Metaph.* 4.3.1005^b19–20.

There can be no scientific demonstration of this principle precisely because there is nothing prior to and explanatory of it. For him the principle of non-contradiction is a basis for all reasoning. It is so fundamental to our ability to reason that there simply is nothing more fundamental that could be appealed to in order to show *why* it must be true. Hence this is the example *par excellence* of something that one ought to accept without demonstration.

There is, though, a sense in which it can be demonstrated. According to Book 4.4 it is possible to give an *elenctic* proof in which the premises are supplied by an interlocutor who denies the principle.³¹ The basic idea is that if an opponent who denies it says something significant, then Aristotle thinks such an interlocutor must grant premises that will refute his own view. Of course the opponent might simply refuse to talk, and then there could be no discussion or argument, and even if Aristotle does succeed in refuting the opponent, the opponent might refuse to admit defeat. After all, if the opponent claims that contradictories can be true at the same time, showing him that his own admissions lead to a conclusion that contradicts his claim might even be viewed by him as further support for his thesis.³² The style of argument he employs for those who deny the principle for the sake of argument is indirect in that it attacks their conclusion as absurd, but does not try to expose some error in their reasoning.

However, Aristotle distinguishes the kind of opponent who denies the principle for the sake of argument from those who are led to it through perplexity.³³ These latter are in a state of *aporia* and have been led to their denial of the principle by the kind of material similar to that which later turns up in the ten modes. Unlike merely contentious opponents, Aristotle thinks that such people can be *persuaded* to see the error in their thinking. Although he here offers no analysis of persuasion as an argumentative mode, he does indicate how one can go about relieving them of their perplexity. After diagnosing the acceptance of one of their misguided conclusions as resulting from the use of one of a variety of arguments from conflicting appearances he goes on to show how to solve the puzzle in question. The solutions he offers focus on drawing distinctions (e.g., potential versus actual being, or different kinds of change) which are then applied to their mistaken reasoning in order to show both the extent to which their views contain the truth and where they go wrong. Like the puzzle about

³¹ *Metaph.* 4.4.1006^a11–13.

³² In *Metaph.* 4.6.1011^a15–16 Aristotle points out the futility of trying to contradict in argument somebody who starts out by contradicting himself.

³³ *Metaph.* 4.5.1009^a16–22.

the location of change from the *Physics*, these puzzles are also examined after the relevant first principle has been announced, and they play no role in discovering or searching for the principle. Furthermore, Aristotle approaches the puzzles with the confident expectation that if somebody has been led to denial of the principle owing to one of these puzzles, then it will be *easy* to cure them of their ignorance.³⁴ They are simply wrong, and the puzzles are not serious obstacles to knowledge.

It is obvious how this contrasts with our earlier description of the proto-skeptic. The proto-skeptic inquired in order to solve *aporiai*, but eventually argument conforming to various modes led to a suspension of judgment. However, if Aristotle is right, material such as is found in the ten modes has led them into a condition in which they are not saying anything at all.³⁵ They are no longer really inquiring, but neither are they saying anything determinate. If so, there simply is no challenge to his own principles for him to meet.

Although arguments from conflicting appearances have led some into confusion and puzzlement, for Aristotle the puzzlement is the result of improper education, and is betrayed in the demand, unreasonable by his lights, that a proof be given of everything. Here too, as in the case of scientific first principles, Aristotle is confident that puzzles are not an impediment to the discernment of truth. And to express this point one can do no better than quote Long's own words: "he left to later philosophers a series of defences against skepticism, some of which they adopted, and a methodology which turns the skeptic's grounds for giving up the quest for knowledge into reasons for maintaining the search and hoping for a solution."³⁶ In response to those who sincerely believe that there are puzzles that render the truth of his principles problematic he offers not proof, but the promise of persuasion.³⁷

³⁴ *Metaph.* 4.5.1009^a18–19. ³⁵ *Metaph.* 4.4.1008^a30–31. ³⁶ Long 1981: 105.

³⁷ I would like to thank Peter Klein and Henry Mendell for their comments on a previous draft, as well as the participants in the Ancient Models of Mind conference.