

A HISTORY OF PHILOSOPHY
WITHOUT ANY GAPS



CLASSICAL PHILOSOPHY

PETER ADAMSON

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volume 1

OXFORD
UNIVERSITY PRESS

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Great Clarendon Street, Oxford, OX2 6DP,
United Kingdom

Oxford University Press is a department of the University of Oxford.
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First Edition published in 2014

Impression: 1

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Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America

British Library Cataloguing in Publication Data
Data available

Library of Congress Control Number: 2013956024

ISBN 978-0-19-967453-4

Printed in Italy by
L.E.G.O. S.p.A.—Lavis TN

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For Johanna and Sophia

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PREFACE

I wrote this book because my back hurt. Well, not only for that reason, obviously. But back-pain did make a significant contribution. It led to me trying to get in shape, by taking up running. The thing about running, especially running every day through the same neighborhood (or if you live in London, as I did then, “neighbourhood”), is that it gets boring. Seeking a diversion, I discovered podcasts. These are basically radio shows you can download from the internet, and they make for an excellent distraction while exercising. Being a bit of a philosophy buff, as you might already have suspected, I started listening to several fine podcasts on this subject. But it struck me that there was no podcast series that covered philosophy from a historical angle, telling the story of philosophy in chronological order the way other podcasts had tackled topics like ancient Rome. Since I am a historian of philosophy, it seemed to me that such a series would be a good thing. It would form a continuous narrative, and it would leave nothing out. It would cover the story of philosophy starting at the beginning, and, to steal a phrase from my esteemed colleague Richard Sorabji, “without any gaps.”

And the rest is, in several senses of the word, history. The podcast launched in the autumn of 2010 and is still going strong, having covered all of ancient philosophy and now the philosophical tradition of the Islamic world. Although the podcast version includes episodes with experts on various topics, the core of the series has been a series of scripts. The scripts on classical philosophy form the basis of the book you are holding in your hands, revised for this new format. It is the first of several planned volumes which will offer a continuous history of philosophy, which will be distinctive in paying attention to less commonly explored figures and movements. In this volume I cover several topics you wouldn’t expect to encounter even if you studied philosophy intensely at university level: some of Plato’s less popular dialogues, for instance, and the Hippocratic corpus. This will be even more obvious in the next volume, when I will look at relatively obscure movements in Hellenistic philosophy like the Cyrenaics. I hope that I’ve managed not just to include these “minor” topics but to make them accessible for a broad readership, and show their historical and philosophical interest. My goal in this series of books,

then, is to tell the *whole* history of philosophy, in an entertaining but not oversimplified way.

We philosophers like to define our terms before we begin, so let me start by explaining what I mean when I talk about the “whole history of philosophy.” Let’s start with the word “whole.” Ultimately my hope is that the series will deal not only with “Western” philosophy (to use a designation I don’t particularly like) but also the philosophical traditions of India and China. As already mentioned, philosophy in the Islamic world, a subject dear to my own heart, will also be covered. But of course, dealing with any of these traditions “without any gaps” is doomed to remain more an aspiration than a promise. Some readers may occasionally feel that I’ve left out a figure or an idea deserving of mention or even lengthy discussion. The point of the “without any gaps” approach is more to avoid skipping from highlight to highlight, the way a lot of university courses on history of philosophy have to do—where one jumps straight from, say, Aristotle to Descartes, vaulting over a gap of two thousand years or so. Rather, I want to show how each thinker built on those who came earlier, while also striking out in new directions.

That brings me to the word “history.” Obviously the history of philosophy isn’t quite like other areas of history. It is not mostly about events, when and why they happened, and which important people were involved. Nor is it the sort of history that paints a picture of another time, maybe by focusing on people who weren’t so important—peasants instead of potentates. On the other hand, the historian of philosophy can’t ignore these things. We’re going to see that political, social, and religious forces had a lot to do with the way philosophy progressed, and even the fact that philosophy could happen at all. It’s an obvious, but easily overlooked, fact: philosophy occurs only in a society that can produce philosophers. Usually this has meant that philosophy happened in close proximity to wealth and power. It’s naive to think that philosophy can be practiced, and preserved, without some degree of economic and political stability and support. Yet it’s cynical to think that philosophy is never anything more than an expression of political and economic power.

For the period we’ll be studying in this volume, historical forces didn’t only help to determine who the philosophers were and what they thought. They also determined whether and how their ideas reached us. For most of the time between the ancient Greeks and ourselves, it was extremely laborious, and therefore expensive, to transmit philosophical writings: they had to be copied by hand. We know about Greek ancient philosophy only thanks to manuscripts written in the medieval period—a “manuscript” being, as the word literally says, a text that is handwritten. In order for us to read the earliest works of philosophy from the Western tradition, texts needed to be copied and re-copied over many generations. Even this process

has given us only indirect access to the ideas put forward in the sixth century BC, by a man who has some claim to be the first philosopher and is at any rate going to be the first thinker covered in this volume: Thales of Miletus.

But before we get to him, a few remarks about the last word in the title “history of philosophy.” (I’m assuming you will have no trouble with the word “of.”) The question of what “philosophy” is, is of course itself a philosophical question. It is a question that has been answered differently in different ages. As we’ll be seeing, the ancient understanding of philosophy was rather more broad than ours, and included many disciplines we now think of as “science.” Hence this book contains, for instance, chapters on how the medical tradition related to philosophy, and on Aristotle’s contributions to zoology. This too is part of what I mean by telling the history of philosophy without any gaps. Beyond that, the best way I can tell you what philosophy is, or has been at various times in the past, is to invite you to read this book and subsequent volumes in the series as they appear—but not to stop there. My hope is to whet your appetite for ancient philosophy, and to inspire you to read (or re-read) Plato, Aristotle, and the rest. At the end of the book I’ve given some advice on further reading, in which I recommend quite a bit of scholarly literature. Still, I would much rather you went and read the works of these ancient thinkers. You might, in fact, think of this volume as being akin to a guidebook to a foreign country. You probably wouldn’t read a guidebook to Munich without intending to visit Munich. Likewise, this volume is intended as a guide and invitation for those who want to explore the history of philosophy, without any gaps.

ACKNOWLEDGEMENTS

This book, and the podcast series on which it is based, have been assisted by a number of benefactors. The podcasts received financial support from King's College, London, the Leverhulme Trust, and most recently the LMU in Munich. A number of friends and colleagues also appeared in the series for interviews; guests who spoke to me about classical Greek philosophy were Hugh Benson, Fiona Leigh, M. M. McCabe, Malcolm Schofield, Dominic Scott, Frisbee Sheffield, Richard Sorabji, and Raphael Woolf. I would encourage the reader to listen to the interviews, which provide a range of perspectives on this material additional, or alternative, to the ones I'm presenting in this book. The interviews are available online at <www.historyofphilosophy.net>.

Special thanks are due to an anonymous reader for OUP, and to Dirk Baltzly and Fiona Leigh, all of whom made extremely useful comments on the manuscript. Plato's *Sophist* was covered in the podcast series by an interview with Fiona Leigh. My thanks to her for persuading me to write a new chapter on the *Sophist* for the book version, and similarly to Sandrine Berges for suggesting the idea of adding a chapter on women in ancient philosophy.

I am also grateful to the following people who helped enormously with the production of the podcasts, book, or both: Fay Edwards, Stefan Hagel, Hugh Haveranek, Falk Hilber, Andreas Lammer, Dominik Lehmann, Rory O'Connell, Richard Palmer, Julien Rimmer, Ian Rossenrode, and Brett Trewern. I also got supportive and constructively critical comments from many podcast listeners. Thanks are due also to Peter Momtchiloff of Oxford University Press for his encouragement to produce this book, and to Jeff New for his help with the editing. I must also mention the constantly stimulating atmosphere for the study of ancient philosophy I've been fortunate to enjoy, first, in my former home London, and now at the LMU in Munich. There are too many people to mention in this regard, but for London I should at least again name Fiona Leigh, M. M. McCabe, Frisbee Sheffield, Richard Sorabji, and Raphael Woolf, as well as Charles Burnett, Ursula Coope, Verity Harte, John Sellars, the late Bob Sharples, and Anne Sheppard. Now in Munich I have the privilege and pleasure of working with Oliver Primavesi and Christof Rapp.

ACKNOWLEDGEMENTS

Finally, there is my greatest debt, which is to my family: my brother, fellow podcaster and faithful listener Glenn Adamson; my supportive parents and grandfather; and above all the people who have to share me with philosophy, my wife Ursula and my daughters Sophia and Johanna. This book is dedicated to the two of them, in the hope that they will want to read it a few years from now.

A NOTE ON REFERENCES

Basic references to the primary texts are included within the chapters. For the chapters on the Pre-Socratics, the citations within the text (marked with §) refer to sections of G. S. Kirk, J. E. Raven, and M. Schofield, *The Presocratic Philosophers* (Cambridge: Cambridge University Press, 1983). The page references to Plato and Aristotle are standard. They allude to pages in early printed editions, and are called “Stephanus pages” in Plato’s case and “Bekker numbers” for Aristotle. Thus the citations should help you find the relevant passage in any edition or translation of their works. For English translations of the Hippocratic corpus and the Sophists, see the first footnote in the relevant chapters.

A guide to further reading is found at the back of the volume. In the notes to the chapters I have also given occasional indications of key scholarly disputes over the interpretation of these antique thinkers. In these cases I provide relatively abundant citations of scholarly literature. These are just meant to be examples, to alert the reader that there are such controversies, and that the views I present here are themselves controversial. (Pretty much anything you say about a thinker like Heraclitus, Parmenides, or Plato will be controversial.) These references are thus not intended as anything like an exhaustive survey of relevant secondary literature. My hope is that they may nonetheless be useful for some readers, for instance students who want to write a paper about the topic in question. For other readers they can safely be ignored (well, you could *safely* ignore the whole book, to be honest, but please don’t).

DATES

All dates given here are BC. The abbreviation “fl.” stands for *floruit*, “flourished,” i.e. probably wrote at about that time, while “ca.” stands for *circa*, “approximately.”

<i>Philosophers and other authors</i>		<i>Selected events in ancient history</i>	
		Dorian invasion, emigration to Ionia	ca. 1050
		Poems of Homer	8th century?
		Poems of Hesiod	8th century?
Thales	fl. early 6th century		
Anaximander	fl. ca. 580–570		
		Peisistratus and sons tyrants of Athens	560–514
		Death of Solon	558
Anaximenes	fl. ca. 550		
Xenophanes	fl. ca. 540		
Themistoclea	fl. mid-6th century		
Pythagoras	fl. ca. 540		
Theano	fl. ca. 540		
Heraclitus	fl. ca. 500	Greco-Persian wars	499–449
		Ionian revolt against Persia	499
		Defeat of Ionians	494
		Defeat of Persians in battle of Marathon	490
Parmenides	fl. ca. 480	Battles of Thermopylae and Salamis	480
		Founding of Delian League	477
Zeno of Elea	fl. ca. 460	Death of Themistocles	459
Anaxagoras	fl. ca. 460	Aeschylus' <i>Oresteia</i>	458
Melissus	fl. ca. 450		
Empedocles	fl. ca. 450		
Leucippus	fl. ca. 440	Pericles becomes general in Athens	443
Aspasia	fl. ca. 440		

DATES

Protagoras	fl. ca. 440		
Democritus	fl. ca. 430	Peloponnesian War	431–404
Philolaus of Croton	fl. ca. 430		
Diogenes of Apollonia	fl. ca. 430		
Gorgias	fl. ca. 430	Death of Pericles	429
Herodotus	died ca. 425	Sophocles' <i>Oedipus Rex</i>	428
Prodicus	fl. ca. 420	Aristophanes' <i>Clouds</i>	423
Hippias	fl. ca. 420	Most of Hippocratic corpus written	ca. 420–350
		Euripides' <i>Trojan Women</i>	415
		Sicilian expedition of Athens	415–413
Euthydemus	fl. ca. 410		
		Reign of Dionysius I in Syracuse	405–367
		Death of Alcibiades	404
		Thirty Tyrants in Athens	404–3
		Restoration of democracy in Athens	403
Phyntis	fl. ca. 400	March of the Ten Thousand	401–399
		Writing of <i>Double Arguments</i>	ca. 400
Socrates	469–399	Trial and execution of Socrates	399
Thucydides	died ca. 395		
Gorgias	483–375		
Archytas	ca. 420–350		
Xenophon	ca. 430–350		
Plato	429–347		
Eudoxus	ca. 390–340		
Speusippus	ca. 410–340		
Isocrates	436–338		
Arete of Cyrene	fl. 350		
Aristotle	384–322	Reign of Philip of Macedon	359–336
Xenocrates	395–313	Death of Dion in Syracuse	354
Theophrastus	ca. 370–286	Alexander the Great	356–323



Map of the Ancient Mediterranean

PART I

EARLY GREEK
PHILOSOPHY

EVERYTHING IS FULL OF GODS THALES

Our story begins in the sixth century BC, and not, you might be surprised to hear, in Greece. The first ancient philosophy was written in Greek, but in the territory called Ionia, on the western coast of modern-day Turkey. You would reach it if you started in Greece and went around or across the Aegean Sea, towards the east. Which is exactly what Greek-speaking peoples had done well before the sixth century BC. The ancient Greek historians tell us that in about 1100 BC, in response to an invasion of mainland Greece by a people they called the Dorians, many inhabitants of mainland Greece crossed over to Ionia. That name, Ionia, comes from a legendary leader of the colonists, Ion. These refugees set up a number of colonies, some of which became extremely successful. One of the earliest colonies was Miletus, the city Thales called his home. It was founded by a group who came from around Athens, the future home of Plato and Aristotle and one of the few places in mainland Greece not to fall to the Dorians. At least that's what the ancient historians tell us, and the claim is supported by similarities between the Ionian dialect and the dialect they spoke near Athens—called “Attic” Greek, Attica being the area surrounding Athens.

Miletus was a rich and successful city. Just like Australia in the nineteenth century, Miletus went from colony to independent economic power on the back of sheep: their wool was exported across the Mediterranean. Miletus and other Ionian cities became wealthy enough to found colonies of their own, as far away as Italy, but also around the Black Sea, which was an area of strength for the Milesians in particular. Miletus was fairly far south in Ionia, and their location and success as traders meant that someone living in Miletus could easily be exposed to ideas and people from further inland to the east, and from Egypt. So it's always been tempting to say that Thales and the other Milesian thinkers got some of their ideas from Eastern or Egyptian traditions. For instance, Thales was famous for having predicted a solar eclipse in 585 BC (§74), and if he really did that he may have been using Babylonian astronomical tables to pull off the trick. There's also some evidence that Thales went to Egypt in person (§68).

Miletus, then, was a good place to be in the early sixth century BC if you wanted to become the first ever philosopher. But even Miletus wasn't the sort of town where you could just relax and gaze at the stars, trying to figure out when the next eclipse might be coming along. It would be a while before a Greek author would describe full-time contemplation as anything like an ideal or desirable life. On this point Aristotle makes particularly good reading for us philosophers. He explains that we are not, contrary to appearances, just leeching off society when we sit around reading books and having ideas. To the contrary, we are the highest achievers, the ones who realize human potential most fully. But a life of pure speculation was not Thales' style anyway, or so it would seem. He was no detached contemplator, more of an all-purpose wise man. In fact he was named as one of the so-called "Seven Sages" of the early period of Greece. (Another one of the Seven whose name is still remembered nowadays is Solon, who set down many of the laws governing Athens.) Thales' political engagement is best shown by a report that he urged a political union between all the Ionian cities so that they could resist their neighbors to the east, a policy which, had it been adopted, might have enabled the cities to remain independent for longer than they did (§65). In fact, only a few decades after the time of Thales, Miletus and other Ionian cities fell under the dominion of the Persians.

More fun, and also showing a practical turn of mind, is the story about Thales and the olive-presses (§73). Supposedly, Thales' knowledge of weather conditions enabled him to predict a bumper crop of olives in the coming season. He went around and cornered the market on olive-presses, so that he could make a fortune when the predicted crop came in and everyone needed to turn their olives into oil. On the other hand, Plato tells a story about Thales walking along looking at the sky, and falling into a well because he isn't watching where he's going (§72). Conveniently for the anecdote there's a servant-woman on hand to laugh at him, underscoring the point that philosophers don't notice the world at their feet because they're so busy looking at the sky. Since I myself am capable of smashing my toe into a stone step while trying to go into a house and read a book at the same time, I have a lot of sympathy for the Thales who fell down a well. But the evidence we have suggests we should instead imagine Thales as a well-rounded fellow, engaged with the world around him as well as with the nature of the world as a whole.

What kind of evidence do we have about him, then? Thales and the other earliest Greek thinkers are called the "Pre-Socratics": the ones who lived before Socrates, even though, as we'll see, some so-called "Pre-Socratics" actually lived at about the same time as Socrates. For this reason, and because it seems a bit rude to label these thinkers with reference to a future philosopher, I have titled this section of the book

“Early Greek Philosophy.” This expression seems to be gaining ground in scholarly works on the subject. Still, for ease of expression I’ll mostly use the still-common phrase “Pre-Socratics” to refer to the early Greek thinkers.

For all of these figures, our knowledge is really based on nothing more than tantalizing scraps. People who work in the field call these scraps “fragments.” But even this makes the situation sound better than it usually is. What we’ve actually got is works by later ancient authors—or rather copies of copies of works by later ancient authors—who tell us something about, say, Thales or Heraclitus. Occasionally we’re in luck and they quote the early Greek thinkers verbatim, or even better, *say* they are going to quote them verbatim and then do so. Some of these thinkers wrote in poetic verse, which has meter—this, of course makes it much easier to tell if it is a direct quote. But often, what we’ve got is a much later thinker telling us what an early thinker thought, and we have to decide for ourselves how close this might be to the original wording or idea. Technically these paraphrase reports are called testimonies rather than fragments. But it isn’t always easy to tell the difference.

Even if you are lucky enough to have an authentic fragment, it isn’t necessarily obvious where the useful information starts and stops. One of our richest sources for the Pre-Socratics is Aristotle, and he has a tendency to mix reports of what they thought with educated guesses about what else they must have thought, and why they thought what they thought. Furthermore, he’s almost always forcing the Pre-Socratics into the framework of his own theories, trying to make his predecessors look like they were groping towards the sublime insights of Aristotle himself. Some of what I’ve already mentioned shows the problems we’re facing here: that story about falling in the well is a nice story, but maybe it’s a little *too* nice. It sounds more like an amusing anecdote that’s been assigned to Thales because he’s a famous philosopher, the way witty remarks get ascribed to Oscar Wilde or Dorothy Parker even though they didn’t say them. In the case of Thales, the problem is particularly difficult, and I should admit before we go any further that almost nothing can be said about him for sure. But we’ll do the best with what we’ve got.

Some of the things I’ve already mentioned give a flavor of one major dimension of his achievement: he was a scientist, in something like the sense we would use the term. If we know anything about him for certain it’s that he was interested in astronomy. The story about the olive-presses also shows that Thales had expertise in what we would call the physical sciences, or at least had a reputation for having that expertise. This is confirmed by other evidence. There’s a story about him diverting a river into two branches so that it would be possible to cross it—because each of the two branches would be shallower than the single river (§66). And although Thales may in fact have written nothing at all, some sources tell us

that he did write a book about navigation at sea. All this is typical of early Greek philosophy, and in fact of philosophy right up until the modern period. As I mentioned in the Preface, the tendency to separate philosophy from what we call “science” is a recent phenomenon, and certainly not one most Greek thinkers would have recognized.

So this is one reason to say that Thales was the first “philosopher”: he was the first person to gain a reputation for the sort of independent analysis of nature we describe as “scientific.” For this reason it’s traditional to describe Thales and the other Pre-Socratics as being rational, as opposed to the presumably irrational culture that went before them. But this is not a very useful way of looking at it. The main texts we have to illustrate Greek cultural beliefs before the time of Thales are the works of Homer and Hesiod. Homer’s *Iliad* and *Odyssey* would in fact have been, already for the Pre-Socratics, the greatest touchstones of Greek culture. In the ancient Greek world they played the sort of role that the Bible did in medieval Europe, and that Shakespeare does for us—or used to when people knew their Shakespeare. Clearly the *Iliad* and *Odyssey* aren’t philosophical texts, but neither is Homer *irrational*. The *Iliad* is, among other things, a reflection on the sources and consequences of (as it says in the first line) the wrath of Achilles. Indeed, you could argue that Homer has a greater insight into cause and effect in the human sphere than most Pre-Socratics have into the cause and effect of the world around us. The fact that Homer often invokes the agency of a god or goddess to explain what is happening in the Trojan War or Odysseus’ long voyage home only counts as irrational if you think it’s irrational to believe in the gods.

Closer to the aim of Pre-Socratic philosophy is Hesiod’s *Theogony*, a poem setting out stories about the origins and natures of the gods, probably in part by collecting previous material. Some of this looks more or less explicitly cosmological, in a way that is not too distant from the kind of Pre-Socratic cosmology we’ll be talking about over the coming chapters. Sure, Hesiod equates his gods and goddesses to his cosmological principles—the Greek word *ouranos* means “heaven” and is also the name of a god in Hesiod, for instance. But again, it’s hard to make a good case for Hesiod being “irrational.” He’s laying out a theology, and that theology is at least meant to be consistent and explain something, or even explain everything. If you think theology can’t be rational, just wait until we get to Aquinas.

I think a better way of understanding the Pre-Socratics would be to say that their views were, at least implicitly, grounded in *arguments*. This, to me, is the difference between early Greek philosophy and other early Greek cultural productions. We mostly have too little evidence about Thales to reconstruct the arguments that gave rise to his views, but Aristotle was probably right to try to reconstruct arguments of

some sort or another. We can follow his example by turning finally to Thales' few attested philosophical claims. The best known is that he thought water was really, really important. It's a little unclear, unfortunately, in what way exactly he thought water was important. Aristotle tells us that Thales believed the world floats upon water, like a piece of wood (§84). Here we seem to have a cosmological view that would be at home in a non-philosophical religious or theological tradition: the heaven, as even Homer says, is like a dome above us, and the world is a disc floating upon the sea under that dome.

However, Aristotle tells us something else about Thales and water: he thought that water was a cosmic *principle*. Here Thales may well have been anticipating arguments that would be made by his immediate successors. As we'll see very soon, various Pre-Socratics thought that the materials the world is made of were formed out of the condensation or rarefaction of other materials. So perhaps Thales, observing the importance of water for life in plants, animals, and humans, or the earthy residue left after water evaporates into air, decided that in the first instance everything comes from water. Now, probably you are not thinking, "My God, he's right, everything *does* come from water!" But if Thales got to his water principle in this kind of way, then at least it would show him giving a novel explanation of the cosmos, and using a process of argument to get to that explanation. Whether, as Aristotle implies, Thales also thought everything is literally *made* of water seems more doubtful (§85). To think this he would have to have believed that something like rock, which seems eminently dry and solid, in fact consisted of water. And there is no reason to believe he attempted such an account, though an explanation like this would be given not much later by another philosopher from the same city, Anaximenes.

Another philosophical claim ascribed to Thales is that a magnet has a soul, and so does amber (§§89–90). (When you rub amber, it attracts things just as a magnet does; this is due to static electricity.) What sense can we make of this? Well, Aristotle tells us about Thales and the magnet in the process of asserting that all philosophers associate soul with motion. Aristotle may be right to say that Thales was already onto this point: there must be soul in a magnet, otherwise it could not initiate the motion that pulls it and a piece of iron towards one another. Aristotle tells us also that, according to Thales, "all things are full of gods" (§91). This is a classic bit of Pre-Socratic philosophy, philosophy in the form of a catchphrase. As we'll see, Heraclitus is the master at this style of philosophy. But let's take seriously the claim that all things are full of gods, by putting it together with the other idea about magnets. What you get is a nice little argument, which would go something like this: everything is full of gods, and I'll show you this using the example of the magnet.

It seems to be lifeless, but it must have soul, because it can initiate motion. So by extension, you should at least be open to the idea that everything has soul, which is divine. That's obviously doing a lot of Thales' work for him, by combining two fragments and filling in the gaps. But that, as I hope you'll come to agree over the following chapters, is what makes the Pre-Socratics so much fun.

INFINITY AND BEYOND

ANAXIMANDER AND ANAXIMENES

Thales was not the only Pre-Socratic thinker to hail from Miletus. He was followed by two thinkers with wonderful, albeit confusingly similar, names: Anaximander and Anaximenes. We know a bit more about them than we do about Thales, but don't get your hopes up too high: our evidence about them is pretty thin. I have already mentioned how amazing it is that information about these earliest Greek philosophers has reached us at all. Maybe it's worth dwelling on this just a bit longer. Remember, these figures lived in the sixth century BC. To get some idea of how much time has elapsed since the birth of philosophy, take someone else who lived a long time ago: Charlemagne, the conqueror who founded the Holy Roman Empire. He was born in the mid-eighth century AD, which is early in the medieval period. But that still puts him slightly closer to us in time than to the birth-date of Thales. Even for ancient philosophers like Aristotle, Thales and his immediate successors were far enough in the past that it was hard to know much about them. So we should really marvel that we, more than two millenia after Aristotle, know anything about the earliest Greek philosophers at all.

Even if Aristotle wasn't necessarily all that well informed about the first Pre-Socratics, he is still one of our most important sources of information about them. Another main source is Aristotle's student Theophrastus, who made it his business to collect and interpret bits of information about the history of philosophy up until his time. This is the sort of thing Aristotle and his followers loved to do: they were great collectors of information, and threw themselves into it zealously, whether they were dissecting shellfish or trying to piece together the ideas of someone like Anaximander. Unfortunately there are a couple of pitfalls for us here. In the last chapter, I mentioned that Aristotle often recast Pre-Socratic ideas in terms of his own ideas and vocabulary. A good example is the first book of the *Physics*, in which Aristotle tries to classify a whole range of Pre-Socratic thinkers in terms of how many "principles of nature" they recognized. As you would expect, given that he was Aristotle's student, Theophrastus seems to have followed Aristotle in this respect.

A second problem is that Theophrastus' own works, like the writings of the Pre-Socratics themselves, are mostly lost. Apart from Aristotle, the most useful surviving reports on the Pre-Socratics come from late antiquity. Like Aristotle and Theophrastus, the late ancient reporters were rarely interested in neutral presentation of Pre-Socratic theories. Certain very informative works known as "doxographies" itemize the characteristic doctrines of these long-dead thinkers, drawing in part on Theophrastus. These follow the Aristotelian tendency to force the Pre-Socratics into schematic contrasts and systems.¹ Other important sources include late ancient Platonists, especially Simplicius, a commentator on Aristotle who lived in the sixth century AD, and the Church Fathers. Simplicius does have some philosophical axes of his own to grind, but is unusually interested in accurate reporting of "the ancients" because he worries that information about them is becoming increasingly difficult to find already in his own day. Predictably, the Christian Fathers have a somewhat less positive attitude towards these long-dead pagan thinkers. The upshot is that, when we read through a collection of testimonies and fragments from the Pre-Socratics, we are nearly always seeing them filtered through multiple layers of interpretation and distortion. The task of reconstructing Pre-Socratic thought is beginning to look pretty daunting.

Despite all this, as I say, we do know more about Anaximander and Anaximenes than we do about Thales. The tradition claims that Anaximander was actually Thales' student, and Anaximenes was then Anaximander's. We don't need to take this too seriously, because ancient authors loved to construct chains of teacher-student relationships whether they existed or not. All you really need to know is that Anaximander was just a bit younger than Thales, and that Anaximenes was the generation after that. So let's tackle Anaximander first. Like Thales, he could claim some expertise in physical science: he's credited with setting up a *gnomon*, a device like a sundial, in Sparta back in mainland Greece (§94). Remember that Miletus is on the western coast of what is nowadays Turkey, so it's notable that he would have traveled from there as far as Sparta. Another scientific achievement was his production of a map which showed, we are told, both the earth and the sea (§§98–100). This would have been an appropriate activity for someone from Miletus, which as we've seen was a vibrant economic center with trading connections all over the Mediterranean and up into the Black Sea area.

Anaximander is best known for saying that the principle of all things is what he called "the infinite." The word in Greek is *apeiron*, which means, literally, "that which has no limit." Several different English words have been used to translate this: not only "infinite," but also "boundless," "unlimited," and "indefinite." These different translations bring out different connotations which really do apply to

Anaximander's principle. He did apparently think that the *apeiron* was infinitely big, in other words, that it stretched out in space indefinitely far, and surrounds the cosmos in which we live. And we also know that he thought it was eternal—so, infinite in time as well as space. On the other hand, Theophrastus thought it was important to contrast Anaximander to Thales, by saying that whereas Thales' principle was water, Anaximander's principle was nothing in particular: it was, in other words, *indefinite*, having no one nature. Rather, Anaximander said, things with definite nature like air or fire were, as he put it, "separated out" from the *apeiron* (§§104, 119).

This takes us to a rather exciting moment, which is the opportunity to quote the first substantial surviving fragment from Pre-Socratic philosophy. It was reported by Theophrastus, and then preserved by Simplicius, the aforementioned commentator on Aristotle. Here it is: things come to be and are destroyed, Anaximander said, "according to necessity. For they mete out penalty and retribution to one another for injustice, according to the ordering of time" (§§101, 110). After citing this, Simplicius adds that Anaximander was expressing himself rather poetically, even though he was writing in prose and not verse. The fragment isn't a lot to work with, and in fact it's not even certain how it is supposed to relate to the principle called the infinite or indefinite. But taking up the idea of "separating off," what interpreters tend to think is that the different substances separated out of the *apeiron* generate and destroy each other, and that over the long haul this process balances out, so as to restore what Anaximander calls "justice." The idea about the "ordering of time" might suggest that this all happens according to some kind of cycle, which is a popular idea in early Greek thought, and found also in Hesiod.

We can make this a bit more concrete by looking at further evidence about Anaximander, which again comes ultimately from Theophrastus (§121). This evidence bears on the way Anaximander thought the world around us was formed, and in particular how the sky and heavenly bodies come about. He said that, through a process which is unfortunately rather obscure, a ball of fire came to exist around the air surrounding the earth. This ball of fire surrounded the air, Anaximander said, like bark surrounding a tree. The flame then burst apart into rings or circles, which were again enveloped in some kind of air or mist. Round holes in the mist allow us to see the circles of fire, but only partially: and these circular glimpses of the fire are the heavenly bodies. The moon waxes and wanes because the holes in the mist are closing and opening.

Now, this is clearly pretty cool, but how does it relate to the business about the infinite, and things being separated, paying retribution to one another, and all that? Well, the report I've just been describing starts by saying that in Anaximander's

scheme something separates hot and cold out from the eternal—the eternal is presumably his first principle, the *apeiron*. The cold part is probably the air or mist, and the hot part is obviously going to be the fire. Notice how they then interact with one another, the mist first being hugged tight by the fire, like the bark on a tree, and then shrouding the rings of flame out in the heavens. All of this suggests that Anaximander was fascinated by the opposed forces we see in nature around us. These countervailing forces, which are things like mist and flame, with opposing characteristics, are what pay retribution to one another. The infinite is indefinite—it has no characteristics that could be opposed to one another. But it is somehow the source of what does enter into opposition. And, because it is infinite in the sense of being inexhaustible, the process of mutual opposition will never cease.

This theme of constant and dynamic opposition, which takes place against the background of an underlying unity, is one of the most enduring features of Pre-Socratic philosophy. We'll find it most strikingly in Heraclitus, but the same idea will appear too in Empedocles and Anaxagoras. Even Aristotle will try to explain nature in terms of opposition and unity. Also typically Pre-Socratic is the attempt to explain something huge and complicated—in fact, the whole cosmos—by invoking fundamental constituents and forces. The ambitions of the theory may go further still: some evidence suggests that Anaximander had in mind more than just our cosmos. Theophrastus tells us that in Anaximander's theory it wasn't just stuffs like air and fire that are separated out from the infinite, but also whole worlds (§§113–14). If this is not entirely misleading—and some think it is—then this could mean either an infinite number of worlds like our own, scattered out through the infinity, or it could mean an unending series of cycles for our own cosmos. Both ideas would, again, have resonances in later Pre-Socratic thought.

The notion that at least our own cosmos does operate in cycles is supported by a bit of testimony which says that Anaximander believed our world is drying out, the seas gradually retreating as the sun heats them and turns the moisture into wind (§132). Maybe the idea is that we live within a part of the cosmic cycle where heat is gradually overwhelming what is cold and moist: a sixth-century BC version of global warming. The idea that things were wetter in the distant past would go well with another scrap of information, which preserves what is probably Anaximander's most memorable idea apart from the infinite principle. He claimed that the first animals were gestated inside moisture and then broke out of it, as if through the bark of a tree—he seems to have had a thing about bark, one can't help noticing (§133). He also suggested that man couldn't originally have been the way he is now, since the first generation of children would not have survived (far too helpless).

Rather, they were formed inside of fish, and full-grown adults burst out of them (§135). This shouldn't be taken as some kind of proto-theory of evolution, because there's no idea here that fish gradually become more and more human over many generations. Rather, it looks more like an attempt to take the idea of Thales that all things come from water or moisture and flesh it out, if you'll pardon the pun. (If you won't pardon the pun, this book may not be for you.)

Overall, it looks like Anaximander had a more abstract approach—one is tempted to say, more philosophical approach—than Thales did. His infinite is a conceptual leap, and seems to be derived from pure argument rather than empirical observation. Some have seen another impressively philosophical approach in his explanation of why the earth stays where it does. He thought the earth is a squat cylinder, shaped like a drum, and we live on the flat upper surface (§122). Aristotle tells us that Anaximander then wondered why this cylindrical earth doesn't move around. The reason, he decided, is that the earth is right in the middle of the cosmos. So no direction would be a more appropriate way for it to move than any other (§123). This is interesting because it shows Anaximander demanding that there be a good *reason* for the earth to move in a particular direction, if it is going to move. The mere equivalence of all the directions it could move is enough to keep it in place.

We might have expected things to develop further in this way, getting more abstract and conceptual. Indeed they will, when we get to Heraclitus. However, the very next thinker on our itinerary is Anaximenes, who seems to go in the other direction. He agreed with Anaximander that the principle of everything is infinite, but he was happy to go ahead and identify it with a particular substance: not water this time, but air. It would, however, be wrong to think that Anaximenes was just ignoring his similarly-named predecessor and retrenching to a view like that of Thales. His philosophy actually builds on Anaximander's in at least one important way, by explaining how the different stuffs that make up the cosmos are generated out of one another.

If you start with air, Anaximenes said, you can change it by making it thicker or thinner (§§140–1). When it gets thinner, more diffuse, it gets hotter and becomes fire. But when it gets thicker, it gets colder and becomes wind, then cloud, then water, and finally earth and rocks. Why does he start with air and not fire, the thinnest stuff—or for that matter, rocks, the densest stuff? Three reasons, I'd guess. First, the sources suggest that Anaximenes was impressed by the fluidity of air. So perhaps he selected air as his principle because he wanted to emphasize the dynamism of the natural world, like Anaximander with his constantly opposed forces. Second, a related point: just like Anaximander's *apeiron*, Anaximenes' air is that from which other things are separated out. The nice thing about air, at least on his theory, is that

you can either thin it out and make fire, or thicken it and make cold things like water and earth. It is an in-between kind of stuff, and so can be the principle for both hot and cold things. Third, there's the fact that air is invisible, unlike fire, clouds, seas, and rocks. So if there is some infinite, unbounded substance surrounding us in all directions, it must be air. Otherwise we would be able to see it.

Like Thales and Anaximander, Anaximenes wanted to explain the whole cosmos in terms of these basic constituents. He said that the earth we live on is shaped not like a drum, but like a disc (§§150–1). It forms by the aforementioned process of thickening air, and then rides on the air that is still in its original state. The obvious comparison is to a frisbee, although I haven't seen any secondary literature about Pre-Socratic philosophy that is frivolous enough to draw this particular analogy. His earth, then, is held up by the air, the way Thales' earth floats in water like a piece of wood. That similarity is not likely to be a coincidence. Certainly, here Anaximenes was closer to Thales than to Anaximander, since he agreed with the earlier thinker both about the disc-like shape of the earth, and the need for it to be borne up by something. He furthermore said that the stars, planets, sun, and moon are made of fire. In a lovely image, Anaximenes apparently compared them to fiery leaves which are floating up in the airy, boundless heaven (§154). In a more amusing comparison, he said the heavens rotate around the disc of the earth like a felt hat being spun around on somebody's head (§156).

Anaximenes also had something to say about the soul. Unsurprisingly, he said that the soul is made of his favorite stuff: air, which in this case is breath (§160). This idea of the soul as breath, or in Greek *pneuma*—that's where we get the word “pneumatic”—is going to have a long career in later ancient philosophy. It makes a certain amount of sense, given that if an animal stops breathing, it stops living. This also allows Anaximenes to make a comparison between the human body and the body of the cosmos: both are sustained by the most fundamental substance, namely air. Again, this is an idea with a long afterlife. Right down through the medieval period it will be popular to say that the human is a little version of the physical cosmos, literally a microcosm. Though some doubt that Anaximenes was making this point, I find it plausible to believe that he already had something like the idea of man as a microcosm. Before too long Heraclitus will set out a very similar theory, according to which both the soul of man and the principle of the universe are made of the same stuff, in his case fire. Remember that Thales too said that magnets have a soul, possibly because he wanted to argue that the whole physical cosmos is permeated by soul just like we are. So during the early generations of Pre-Socratic philosophy, this parallel between man and the cosmos seems to have been, if you'll pardon another pun, in the air.