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THE ORIGINS OF PHILOSOPHY

BY CATHERINE OSBORNE

1. When?

According to a long-standing tradition, dating back to Classical times, Western Philosophy began in the 6th Century B.C. with a man called Thales. For Aristotle (384 to 322 BC), one of our most useful witnesses for evidence about the early history of Greek Philosophy, Thales was the founding figure, at least in respect of theories about the shape and structure of the natural world.

This is what Aristotle has to say about the matter:

Οἱ δ' ἐφ' ὕδατος κείσθαι. τοῦτον γὰρ ἀρχαιότατον παρειλήφαμεν τὸν λόγον, ὃν φασιν εἰπεῖν Θαλῆν τὸν Μιλήσιον, ὥς διὰ τὸ πλωτὴν εἶναι μένουσαν ὥσπερ ξύλον ἢ τι τοιοῦτον ἕτερον.

Aristotle *De Caelo* 294a28-31.

It is not clear whether the idea that Thales was the first in this field antedates Aristotle. Plato (427 to 347 BC) alludes in passing to the history of Presocratic Philosophy at *Sophist*, 242d to 243a, but his summary is vague and mentions very few names; it is not clear whether the first group of thinkers that he mentions, who appeal to images of sexual union between physical forces to explain the origins of the world, are supposed to be the early cosmologists, the ones that we think of as philosophers, or whether he is including the mythological accounts that preceded them. And at *Theaetetus* 174a Plato's anecdote about Thales falling into a well characterises him only as a star-gazer, like any philosopher or sage, but does not place him distinctly as the first in that line. Nor does his place as one of the traditional seven sages support the idea that he was thought to be the first, for several of the others typically included in that list are older.

But in any case it is not evident that either Plato or Aristotle meant that there had never been any kind of search for wisdom before Thales. There are many different kinds of wisdom, not all of which we would count as philosophical, and not everything that Thales said was very philosophical in its interests. As we shall see, Thales was a man of many interests.

Modern accounts of the history of Greek Philosophy generally follow Aristotle in assuming that the story starts with Thales, however arbitrary that might be (and we shall do the same in this chapter). But they also generally take a look at the period before to see where one might trace antecedents of the philosophical questions or the philosophical mentality in the extant poetry of seventh century Greece, or in other cultures with whom the Greeks might have had contact. We have space here to think about these things only very briefly, in section 3, below.

2. Where?

Thales lived in a city called Miletus on the coast of Asia Minor in what is now Turkey but was then a thriving part of the Greek world, with many trade routes to the islands of the Aegean, mainland Greece, Egypt and the Middle East. Two other philosophers, generally considered to be Thales' disciples or colleagues, also lived in Miletus. If we take these "Milesian" thinkers as the pioneers of philosophical enquiry, it is reasonable to say that it started in Miletus.

If we ask not just about the very first philosophers, but about the period of Presocratic Philosophy more generally, we find a very striking pattern to the geographical spread. Several early thinkers belong to cities in Ionia, not just Miletus but Ephesus, Samos and Colophon. But another cluster occurs in the West, in the coastal cities of southern Italy and Sicily. Some thinkers, such as Pythagoras, seem to have migrated from Ionia to the western colonies, so the two clusters are not entirely isolated from one another, although there are some intriguing differences in their style of thought. These differences feature strongly in Hegelian histories of philosophy written in the 19th and 20th centuries, which identify a dialectic between Doric and Ionic moments in philosophy as explanatory of the development of thought during this period.

Meanwhile mainland Greece remains apparently benighted, until the end of the Presocratic period when we find Anaxagoras active in Athens in the mid fifth century. Also about that time the Sophists turn up in force, and it looks as though Athens was a favourite haunt of theirs even if they also practised their art in many different city-states, servicing the needs of an increasingly complex network of political communities.

3. Whence?

Did philosophy arise out of the blue? Or was there something there before it, which gave rise to what we now think of as philosophy? This question has fascinated historians of philosophy's early period, and it sometimes generates controversies about racial or cultural prejudice. Is philosophy a purely Greek phenomenon? Or did it ride on the back of discoveries made by other non-western cultures? If so, what, if anything is so great about what the Greeks did? Should we conclude that western culture is somehow the better for it?

The main places to look for non-Greek influences are in the cultures with which Miletus and the other Ionian cities would have had trade links. These include Egypt, Babylon (modern Iraq), and Phoenicia (on the Eastern shores of the Mediterranean), all of which had ancient cultures of spectacular brilliance. Did the Greeks get something from them that sparked the beginnings of Western Philosophy?

One crucial contribution is the invention of writing, and particularly the use of alphabetic scripts (as opposed to hieroglyphs or syllabic scripts). This probably came to the Greek world by way of Phoenicia. Writing appears in Greece from about the seventh century BC. It makes sense to think that literacy might contribute to the development of philosophy, because it facilitates a certain kind of critical engagement with other people's ideas, which can be recorded and checked (and the very notion of checking or scrutinising records invites an attitude that demands truth, accuracy, proof, not rumour, allegation and speculation). The invention of writing also leads to the idea of written codes of law, and this seems to be plausibly connected with the development of legal institutions that rely upon a combination of rational debate in the courts, with appeal to a body of statutory rules rather than the arbitrary will of an autocratic sovereign.

However the plausibility of the link between writing and philosophy is weakened once we recognise that laws and statutes existed in oral form before the invention of writing. Early laws were often transmitted in the form of verse that was memorised and recited. Similarly, some at least of the early philosophers taught orally rather than by writing books. There is no reason to deny that philosophy may have originated as an oral form. Much of the early philosophical literature is in verse, and the only writings typically attributed to Thales were poems on scientific and practical subjects in a genre we know as didactic poetry, which goes back to pre-literate societies. All of this testifies to philosophy's likely

development from story-telling practices of a pre-literate age, rather than it being a new idea prompted by the debates of the law courts.

Another consideration that might partially explain the development of philosophy is the cultural and religious diversity among the peoples of the Mediterranean and the Middle East which would have become apparent to seafaring citizens of the Greek world in the course of their trading expeditions. If you find that the people you visit speak another language, worship other gods, live by other moral standards, have strange clothes and houses, or habits and manners that would be unacceptable at home, you may begin to wonder whether the truths that you were brought up to respect are really truths, or only customs and beliefs. We can see a fascination with these kinds of cultural curiosities in the early historians and logographers (Hecataeus in the sixth century BC, Herodotus in the fifth century). In the early period of Greek Philosophy Xenophanes (sixth century BC) uses the variation in people's ideas of what the gods are like to raise questions about the accuracy of any human portrait of the gods.¹

One further possible stimulus to enquiry might be the astronomical records maintained by the civilisations of the ancient near East, including both the Egyptians and the Babylonians, and their contributions to mathematics, of which we have some impressive evidence. Did Thales have access to astronomical data from Babylon to assist him in predicting the likelihood of a solar eclipse?² Did he acquire some geometrical expertise from the Egyptians? Did Anaximander use measurements from Egypt or Babylon to give some basis to his calculations about the shape and size of the universe?³

We can guess that it might be so. And the guesses have some plausibility. But even if they are true, they provide only material, so to speak, that a philosopher might use to work with. They don't provide a model of previous cultures actually engaging in philosophy and handing it down to the Greeks. So if the people of those other cultures had access to mathematics, and astronomical records, and writing, and the experience of cultural relativism, why did they not start thinking about them with the kind of questions that signal the beginning of philosophy? That is, why did they not engage in theoretical

¹ Xenophanes fragment 16 DK. See further below.

² Herodotus 1 74 (1 1 A5 DK). See further below.

³ See Martin L. West, *Early Greek Philosophy and the Orient* (Oxford: Clarendon Press, 1971). [Add or replace this reference with suitable books available to a French readership?]

investigation of *the reason why*? It seems that something else needs to go into the explanation, besides the presence of the technical mathematical expertise and the habit of tracking the stars. One can do that kind of thing and never stop to ask why the mathematics works, or what the stars are, or what causes them to move as they do, or how we could prove that any of it is true.

We have been looking outside the Greek world for influences from non-Greek cultures. But of course the early Philosophers were also heirs to a wealth of earlier Greek culture, much of it oral, which we can only partially reconstruct. How much of this anticipates the work of the early Greek Philosophers? There are two main candidates to look at: one is the epic tradition, and particularly Homer and Hesiod, together with the traditional myths of the Olympian gods; the other is the shadowy world of mystery religion, Orphic poetry and chthonic cult.

In the first case, scholars have looked at how traditional mythology, including Homeric religion and the genealogy of the gods in Hesiod's *Theogony*, picture the world, including its geography and the way the meteorological phenomena are explained.

The Homeric epics (the *Iliad* and the *Odyssey*) are not about physics; they are epics of the Trojan war. But in amongst the details of the story we find hints of the idea that the earth is a kind of circular tablet with a dome of sky above; the inhabited parts of the world are surrounded by water (the river Oceanus) which supplies the water for all the rivers and springs in the world.⁴ and the sun rises from the water in the East and drives across the sky each day before sinking into the sea again in the West.⁵ Phenomena such as rainbows, thunder, lightning and earthquakes are typically attributed to the emotions of the gods. Under the earth, or beyond the river Styx, is a shadowy place where the dead live, the underworld or the house of Hades.

Hesiod's *Theogony* opens with an account of the origin of the gods and of the cosmos. The main causal motif employed by the poet to explain the developments, both cosmic and theogonic, is that of two gods having sexual intercourse and thereby giving birth to a new entity (together with the idea of later gods usurping the power of earlier ones by various kinds of violence). It is unclear whether Hesiod's poem (which dates, at least in its written form, from the seventh century BC) is systematising some very

⁴ Homer *Iliad* XXI 194-7

⁵ Homer *Iliad* VII 422; and see Mimnermus fr. 10 (Diehl).

primitive and traditional myths of the Greek world, or whether it is importing motifs from cultures of the Near East where this kind of thinking may also have been widespread. Hesiod also portrays a place called Tartarus beneath the surface of the earth, and he specifies the dimensions of his universe by saying that it would take a bronze anvil nine days to fall from sky to earth, and nine days again to fall from earth to Tartarus.⁶

It is tempting to see some of these traditional beliefs as not just the inspiration for the first philosophers, but also the targets against which the early philosophers were trying to establish a more naturalistic explanation. We can plausibly think of the philosophers as removing the mythical elements of the stories, and trying instead to provide a factual account of the structure and order of the world that would explain the phenomena naturalistically, in as economical way as possible, and without ascribing so much to the anger or desires of the gods. Yet although that idea has some truth in it, we have to remember that the philosophers often describe their own causal factors as 'divine', and that they have done little more than substitute 'separation' or 'emergence' out of a primeval stuff for the 'birth' motifs of the old myths.

The other strand of mythology that has been investigated in relation to Presocratic Philosophy is the material from the Orphic tradition, which focuses more on the individual destiny of the human soul. There are some difficulties in reconstructing what these myths and poems were like (much of the evidence is extremely unreliable and contaminated with later material; some is hard to date). However, it does seem that this material casts considerable light on the thinkers of the south of Italy, including Pythagoreans, Empedocles and Parmenides, and that the origins of the idea of reincarnation and the transmigration of souls may lie in these traditional cults.⁷ Here too, it seems that philosophers take much from their local mythology, and they are not simply out to question or replace these stories. Rather they try to take them up and think new thoughts with them, exploring and developing the metaphysics that is implicit in the mythology.

⁶ Hesiod *Theogony* 720-725.

⁷ See, for instance, Peter Kingsley, *Ancient Philosophy, Mystery and Magic: Empedocles and Pythagorean Tradition* (Oxford: Oxford University Press, 1995). [Add or replace with a suitable book available to French readers]

4. Who?

Taking Thales as the first, we can build up a list of about twenty major thinkers in the period before Plato. First, three philosophers from Miletus, Thales, Anaximander and Anaximenes in the early sixth century BC. Second Pythagoras of Samos in the sixth century and the later Pythagorean tradition, running into the fifth century, including the work of Philolaus. Third, Xenophanes from Colophon, near Miletus. Fourth, Parmenides of Elea and his contemporary Heraclitus of Ephesus, both working at the turn of the sixth to fifth centuries but in different parts of the Greek world. Fifth, two followers of Parmenides, Zeno of Elea and Melissus of Samos. Sixth, five fifth century thinkers with a range of alternative accounts of the cosmos, change and causation, namely Empedocles, Anaxagoras, the two atomists Leucippus and Democritus, and Diogenes of Apollonia. And, finally, the major Sophists including Protagoras, Gorgias, Prodicus, Hippias and Antiphon. Although we can list them in groups that reflect chronology and (to some extent) their philosophical interests, it is not necessarily helpful to think of them as falling into "Schools". Indeed there are many ways of grouping them which would be more or less appropriate for different purposes. In what follows we shall sketch their contributions roughly by subject matter.

5. How do we know?

Reconstructing the work of the Presocratic philosophers is not easy. For the most part we do not have access to any complete texts, but rather we rely on reports (*testimonia*) in later writers, often writing several centuries later, together with excerpts preserved as quotations in those later texts. The latter kind of evidence is known as "fragments", and these snippets of text are often collected and assembled by modern editors, usually with some editorial attempt to reconstruct the original shape of the works from which they must have derived, by putting the fragments into a probable order. The classic edition of this kind is Diels-Kranz (referenced here as DK) which presents a standard collection of such evidence, both the *testimonia* and fragments, for all the Presocratic thinkers. Other more recent editions generally follow a similar approach. This kind of edition can convey a spurious sense of certainty about the reconstruction of the thinker's ideas based on rather intractable resources.

A third kind of evidence is derived from the occasional, though rare, archaeological discoveries of papyri, such as those from Aphrodisias, Herculaneum and so on. These have supplemented our

knowledge in a few cases, although the texts are often badly damaged and the papyri are generally copies from the Roman period, and may reflect errors in the repeated copying over a period of six or more centuries of transmission.

6. Cosmology

It is usual to think of philosophy as starting with an interest in cosmology, including questions about the origin and material composition of the present world order and how it works. Thales is best known for his contribution to cosmology, because, according to Aristotle, he made water the basic principle of all things, and proposed that the earth floated on water.⁸ However, it is clear that even in Aristotle's time little was known about what he meant or why he said this, or even the words in which he said it. The thesis is taken as important largely because it is regarded as the first contribution to a subject that is characteristic of Presocratic philosophy, namely speculation about how the world is and why.

However, there is evidence that this was not the only kind of enquiry that interested Thales. He had views on the nature of life or soul,⁹ and was renowned for certain achievements in geometry—in particular five theorems in elementary geometry were credited to him by later geometers. Some of these seem to have served in practical tasks, such as calculating the distance of a ship at sea.¹⁰ Herodotus reports a story (which he does not himself believe) according to which Thales, while serving with Croesus King of Lydia in a campaign against the Persians, engineered a means of getting the army across the river Halys without any bridges.¹¹ Herodotus also relays a tale about Thales having forewarned the Ionians about the likelihood of a solar eclipse, in advance of a battle between the Lydians and the Medes, during which "day was turned to night".¹² The eclipse in question can be dated to either 585 or 582 BC. However, the forewarning is only said to predict its occurrence "within the limits of the year in which it

⁸ Aristotle *Metaphysics* I 3 983b18-27 (I I A12 DK).

⁹ Aristotle *De anima* 405a19-21.

¹⁰ Proclus *Commentary on Euclid* 352.14-18, quoting Eudemus fragment 87 Spengel. (I I A20 DK) and cf. I 57.10; 250.20; 299.1.

¹¹ Herodotus I.75 (I I A16 DK)

¹² Herodotus I.74 (I I A5 DK)

did occur". It is generally thought that Thales lacked the resources to do better than that. He also had a reputation, in both early and late sources, for political wisdom,¹³ and also for a shrewd financial investment based on predicting a bumper olive harvest one year.¹⁴ The range of interests credited to Thales goes well beyond what we should nowadays call "philosophy", but the definition of what counts as philosophy has, in any case, narrowed over time since ancient times.

Anaximander's contributions to cosmology include the idea that there was some kind of indefinite stuff out of which the materials of the world develop and into which they return. He described this as *apeiron* (infinite or indefinite). The point, so our sources report, was that it was not water (as Thales had suggested) nor any other familiar material, but something without any qualities at all.¹⁵ It was also important that things should emerge and return in balanced reciprocal processes. One sentence of Anaximander's own words seem to be preserved, describing the regulation of this process:

ἐξ ὧν δὲ ἡ γένεσις ἐστὶ τοῖς οὖσι, καὶ τὴν φθορὰν εἰς ταῦτα γίνεσθαι κατὰ τὸ χρεών·
 διδόναι γὰρ αὐτὰ δίκην καὶ τίσιν ἀλλήλοις τῆς ἀδικίας κατὰ τὴν τοῦ χρόνου τάξιν.¹⁶

The imagery is quaint and archaic, as Simplicius, quoting it twelve centuries later, remarks. Anaximander was probably using the imagery of law and punishment to suggest that whereas one element may perhaps encroach for a time, while another withdraws, yet this encroachment will, in due course, be "punished" by the return of the latter and the suppression of the former for a compensating portion of time.

Anaximander's views on the shape of the cosmos are remarkable for his time. Although he still has a flat earth, with earth is the central body of the universe, his earth is a short fat cylinder with two flat surfaces, not one: it seems that our side is not the only 'top'.¹⁷ With a dome of sky on each flat surface, this column drum forms a spherical ball, which lies at the centre of a ring of circles that form the supports for the sun, moon and stars. Instead of asking what holds the earth aloft, Anaximander points out that if a

¹³ Herodotus I.170; Diogenes Laertius I 24.

¹⁴ Diogenes Laertius I.24 quoting Hieronymus of Rhodes (3rd century BC)

¹⁵ Simplicius *Physics commentary* 24.13 (12A9 DK).

¹⁶ Anaximander fragment I, preserved by Simplicius *Physics Commentary* 24.13 (12B1 DK).

¹⁷ Hippolytus *Refutatio* I.6.3 (12A11 DK).

body is equidistant from the surrounding containers, it has no reason to move one way rather than another, so the question "Why doesn't it fall down?" is inappropriate. It does not need an answer.

Equilibrium and balance are the essence of both his chemistry and his physics.

Anaximander completes his cosmology with some splendid speculations regarding the stars, moon and sun. These, he suggests, are jets of fire that emerge from holes in vast black tubes like the rims of cart wheels, which rotate at a vast distance from the earth. The diameters of these concentric wheels, Anaximander suggests, are in neat geometrical proportions, relative to each other and to the diameter of the earth.¹⁸ The details are less important than the crucial fact that Anaximander worked to a basic principle of scientific reasoning, namely the expectation that nature makes mathematical sense and that the correct answer to cosmological questions will be found by doing calculations with numbers, rather than by taking observations.

Anaximander's successor Anaximenes, also from Miletus, seems rather less sophisticated. He too suggests that the earth is a disk, but unlike Anaximander he seems to think that it has only one top side. That top side, where we live, is capped with a dome of sky. He pictures the paths of the heavenly bodies as being like the rotation of a woolly hat (that is they circle in the area of the dome of the sky and round the edge of the equator, but they don't pass beneath the earth).¹⁹

Furthermore, Anaximenes does not concur with Anaximander's thought that no support is required to hold the earth aloft. Instead he claims that the earth "rides on air", and he uses the earth's flatness as an explanatory factor. We can see that this thought is not so naïve as it is often supposed to be, once we correctly understand the image of "riding on air" (*epocheisthai*). The thought is probably this: a strong current of air is rushing upwards from below the earth. The earth, a flat disk, sits aloft on this current and can't fall down against the stream of air. Furthermore, the rush of air round the edge of the Earth's crust causes an upward current on which further flat disks, namely the sun, moon and stars, are buoyed up and flung across the domed surface of the sky, rising and falling as the current catches and drops them, like falling leaves in a storm.

¹⁸ Hippolytus *Refutatio* I.6.5 (I2A11 DK).

¹⁹ Hippolytus *Refutatio* I.7.6 (I3A7 DK).

We can confirm this interpretation of Anaximenes' cosmic theory if we correctly understand this text from Aristotle's *De caelo*:

Anaximenes and Anaxagoras and Democritus say that its flatness is the reason why the earth stays where it is. For it does not cut the air beneath, but sits over it like a lid—which is what bodies that have flatness appear to do. For such bodies are hard to move into the wind, because of their resistance.

Aristotle *De Caelo* 2.13, 294b13-18.²⁰

In terms of physics this theory is not implausible, particularly since observation of the behaviour of elements here on earth suggests that air typically rises to the higher regions, while solids and liquids drop to lower places. Hence one might reasonably suppose that in the universe as a whole there would be a tendency for air to travel upwards, creating a strong draught from below, on which flat but solid disks such as the earth and the sun could be supported—not because they are light but because they are windproof.

Anaximenes is also credited with the belief that air is the basic element. Other elements, liquid solid and gaseous, are, he suggests, modifications of air, produced merely by variations of density. Increased condensation of air produces first mist, then water, then earth and solid rocks. At the more rarefied end of the scale we find 'fire' (by which we presumably we understand the incandescent gases given off as flames in a process of combustion).²¹ The theory is neat, metaphysically economical, simple. Anaximenes seems to suggest that the state of the matter (solid, liquid or gas) is merely an effect of the density of its structure—what we might call a physical phenomenon—rather than due to the kind of stuff it is made of—its chemical composition. He also thinks that the changes in density are produced by physical changes, heating and cooling, requiring no additional entities to be posited.²² Some reports suggest that Anaximenes backed up the theory with evidence from observation, such as the fact that blowing through narrowly pursed lips produces a cold puff while blowing from an open mouth yields a

²⁰ DK13A20. Note that the translation given here differs significantly from that given in most text books (which are, for the most part, wrong about the meaning). **[NB this may not be true about French text books??]**

²¹ Simplicius *In Phys* 24.26 quoting Theophrastus (DK13A5).

²² Hippolytus *Ref* 1.7 (DK13A7).

warm breath.²³ It makes sense to think of Anaximenes as a pioneer in introducing several metaphysical commitments typical of what we call science: the commitment to reducing the number of supposed primary explanatory entities and processes, the preference for simple explanatory hypotheses, the desire to secure those hypotheses by recourse to evidence from observation.

Some cosmological enquiries can be found in subsequent figures including Xenophanes, Parmenides, Heraclitus and Empedocles, but these will be treated in relation to their more significant contributions to metaphysics and psychology below. The cosmological tradition returns as a project in its own right in the fifth century with Anaxagoras, the Atomists and Diogenes of Apollonia.

Anaxagoras and the atomists share a similar starting point for their cosmological theories, namely the idea that there is, was, and always will be a plurality of different things in the world, and that all the observable changes that we see around us can be explained in terms of some microscopic components that are moving around, changing places at a level too small for us to see. The main difference between them is that Anaxagoras conceived of the primary ingredients of things as being divisible all the way down, so that there is no limit to how small a droplet of (say) water might be. However small the droplet, it can always be subdivided to secure two smaller droplets. By contrast the famous atomists, Leucippus and Democritus, suggested that there are small hard uncuttable bodies, atoms, which are the bottom rung of matter. These come in a range of styles, but by putting them together in different combinations, nature can produce a much greater range of textures, colours and types of material.

This summary describes only the most basic similarity between Anaxagoras and the atomists. We should look a little more closely at what Anaxagoras was trying to achieve. Part of the aim was clearly to secure an account of change, including chemical change, that respected the old principle that “nothing comes from nothing”.²⁴ When a chemical change takes place we need an explanation of how the materials that we had before have been transformed into what we now have. Do things really change? Or is the same stuff there, just looking different? Anaxagoras experiments with the idea that the original stuff was really a mixture, though it appeared superficially to be pure, and when it appears to be the source of some new material this is because the new material was already there in the mixture and has just settled

²³ Plutarch *de prim frig.* 7, 947F (DK13B1).

²⁴ DK 59B17

out. For instance, if a glass of water dries up it leaves a chalky deposit. That is because the water was a mixture of water and chalk. Most of the watery part evaporates and leaves a residue that is mostly the chalky part. A similar story must then be told for every case of change. Indeed Anaxagoras claims that *everything* contains miniscule admixtures of every other kind of stuff (and that will be true of the chalky stuff left behind, even though it contains a greater concentration of chalk, yet it still contains a little of everything else).²⁵

Besides this theory of mixture, Anaxagoras also provides an account of how the original homogeneous mixture, which was there in the beginning, came to be sorted out into the cosmos that we now know.²⁶ This involves appeal to “Mind” or *nous*, which is the one thing that is not a mixture but is pure and unmixed with anything else. It appears that Mind is a kind of divine intelligence that sets up the right kind of motion to bring about the current arrangement of the cosmos. “Mind” also seems to refer to the intelligence in individual living things.²⁷

We can contrast these theories with those of the atomists (or rather with Democritus, since we have no detailed evidence for Leucippus’s views). Democritus’s cosmology avoids invoking any divine organising mind, and tries instead to explain the movement of atoms in the void as due to random knocking about. Atoms do not have any natural motion, it seems, but they bump into each other and ricochet off one another, causing further motion in others.²⁸ In addition there is a kind of vortex or whirlpool effect which accounts for the development of cosmic structures at suitable points in the void, and there is not just one world of this sort but potentially any number.²⁹ Some of these proposals were taken up and developed further by the Epicureans in the Hellenistic period (as well as being an inspiration to scientists and philosophers in the early modern period).

Diogenes of Apollonia takes a quite different line, against this mechanical kind of causation. Rather than separate matter from mind, and leave matter inert and without design, Diogenes invents a

²⁵ DK 59B6

²⁶ DK 59B1, B12.

²⁷ DK 59B11, B12.

²⁸ Simplicius *Commentary on Aristotle’s Physics* 42.10-11 (DK 68A47)

²⁹ Diogenes Laertius *Lives of the Philosophers* 9.31-2 (DK 67A1).

new kind of principle that is both air and spirit: a material principle that is itself intelligent. This explains not only the ways that it changes to produce the material aspects of the universe, but also the origin of life and the way in which things that breathe also have intelligence. Changes in intelligence are due to variations in heat. Although it is clear that Diogenes used this theory as the basis of a cosmology, it is also clearly also intended as a contribution to the explanation of mind and the activities of intelligence and perception.³⁰

7. Metaphysics, epistemology and theology

Metaphysics begins during the Presocratic period, with the development of the idea of “reality”, or true being (as distinct from how things appear to be), and with the invention of the idea of incorporeal reality. Linked with the idea of incorporeality and absolute existence is also the philosophical ideal of an omnipotent God, which appears for the first time during this period.

Before we move on to the famous metaphysical thinkers at the turn of the sixth to fifth century, we should begin with Xenophanes and the Pythagoreans. Xenophanes, whose long life spanned most of the sixth century, made his most important contributions in theology and epistemology, including the distinction between appearance and reality. In theology he raised important doubts about the traditional images of the gods, challenging simple-minded anthropomorphism and arguing for a single deity with some kind of non-physical powers of knowledge and action. Probably he is gesturing towards the idea of god as an incorporeal power, who does not need eyes to see, nor physical limbs to achieve his desires. Rather (as Xenophanes puts it)

He remains for ever in the same place, entirely motionless,
Nor is it proper for him to move from one place to another.
But without any effort, he shakes everything by the sheer thinking of his mind.

DK 21 B26 and 25

Other passages show that Xenophanes was thinking about what we can know and how. His reflections on whether humans can attain knowledge include the following lines:

καὶ τὸ μὲν σαφὲς οὐ τις ἀνὴρ ἴδεν οὐδέ τις ἔσται

³⁰ See particularly DK64B5.

εἰδὼς ἀμφὶ θεῶν τε καὶ ἄσσα λέγω περὶ πάντων·
 εἰ γὰρ καὶ τὰ μάλιστα τύχοι τετελεσμένον εἰπών,
 αὐτὸς ὅμως οὐκ οἶδε· δόκος δ' ἐπὶ πᾶσι τέτυκται.

DK 21 B34

Here Xenophanes makes the crucial distinction between what he calls *dokos* or [guesswork: substitute whatever the French translation for *dokos* is] and what he considers to be *knowing* (*oide, eidôs, iden*).

About a certain range of subjects there is *no* human being who qualifies as *knowing* the clear truth. It is not clear from this fragment, isolated as it is, what is the range of subjects that he means to include among the things about which we do not have the clear truth. Is it *everything*? Or is it just the subjects to be treated in Xenophanes' book, which might include the nature of the gods, and the origin of the world perhaps?

In either case Xenophanes introduces a note of scepticism, even intellectual humility into the proclamations of the philosopher. He inaugurates the tradition of asking *how* we can know, and indeed how we might prove that we know what we think we know. And the distinction between truth and mere guesswork, or even well-informed opinion,³¹ prefigures an important distinction in Parmenides, which we shall meet shortly.

Our next metaphysician is Pythagoras whose name is perhaps better known than that of any other Presocratic thinker. Secure evidence about the man himself is lamentably scarce, however. Some things are clear. Pythagoras was an almost exact contemporary of Anaximenes and Xenophanes. He was born in the island of Samos, probably around 570 BC. He moved to Southern Italy around 530, and settled in Croton. After a long period in which Pythagoras and his associates held considerable influence in Croton, there was a political backlash and many were assassinated. Pythagoras himself escaped and survived in Metapontum for a while. There he died, sometime around the beginning of the fifth century.³²

That bare life story does not convey any sense of the complexity of the traditions about who Pythagoras was and what he taught. The main traditions relate to (1) mystical teachings and cult practices; (2) the exact sciences including mathematics, astronomy and harmonics; (3) the political association and activities in Croton. The earliest evidence testifies to the first of these; the third is well-attested from the

³¹ See DK 21 B35 and B18.

³² Iamblichus *Life of Pythagoras* 248-9 (DK14.16).

historical records, but is less interesting to the historian of philosophy. The second is the aspect most commonly identified with Pythagoras in popular tradition, and is the topic relevant in this section.

Among the earliest evidence for Pythagoras himself we find references to a belief in reincarnation, or the transmigration of souls. Three of the earliest poetic allusions to Pythagoras are in Xenophanes, Empedocles and Ion of Chios.³³ All of them are about the idea of life after death. Prose allusions in the fifth century include two passages in Herodotus, both about the immortality of the soul.³⁴ Apart from two puzzling references to Pythagoras in obscure sayings of Heraclitus,³⁵ this is the main theme of all our earliest evidence for the teachings of the original Pythagoras. One influential view, prevailing in the latter part of the twentieth century, following the work of Walter Burkert,³⁶ is that virtually nothing can safely be attributed to Pythagoras himself other than these teachings of a primarily mystical and religious nature, such as the material on reincarnation and the transmigration of souls into other animals. There is also some evidence that he was interested in the mathematics of musical harmony, and had a particular fascination for the number ten, and for the triangle of numbers 1, 2 3 and 4 (making ten), for which he had a technical name (the *Tetraktys*) and by which his followers were required to take their oaths.

Further important mathematical and scientific work can be attributed to the Pythagoreans of later generations. A major figure here is Philolaus, a Pythagorean of the fifth century BC, for whom we have a considerable wealth of evidence and who evidently wrote extensively on mathematical and cosmological subjects. A key theme in his thought seems to have been the notion of the unlimited, and the idea that the world can be explained as structured out of "limiters" and what is unlimited (which is limited by the limiters). Although the details are somewhat obscure, the ideas seem to anticipate some aspects of the thought of Plato and Aristotle in respect of form and matter.³⁷ In any case the focus on numbers, geometry, harmonics and astronomy signals a metaphysical turn in philosophy that was

³³ DK21B7, 31B129, 36B4,

³⁴ Herodotus *Histories* 2.123; 4.95. (DK14.1; 14.2)

³⁵ DK22B40, 22B129.

³⁶ Walter Burkert, *Weisheit und Wissenschaft: Studien zu Pythagoras, Philolaos und Platon* (Nürnberg: Verlag Hans Carl, 1962).

³⁷ See further in Carl Huffman, *Philolaus of Croton* (Cambridge: Cambridge University Press, 1993).

influential for generations, and is clearly significant in leading to the development of the idea of incorporeal objects (such as the numbers) and ideal forms such as we find in Plato.

Parmenides and Heraclitus were two major figures both active around 500 BC. Heraclitus was at work in Ephesus on the coast of Asia Minor. Parmenides was at work in Elea in southern Italy. Parmenides is associated with the idea that there is just one thing (monism) and that it never changes. Heraclitus is associated with the idea that "everything flows", there is constant change, and that the relation between opposites (a "unity in opposites") is fundamental to the structure of the world. Although these philosophical positions seem about as far apart as their geographical locations, they are nevertheless both metaphysical theses about the fundamental nature of reality and about the very possibility of change. It is unclear whether Parmenides and Heraclitus knew each other's work, and whether they were attacking each other.³⁸

Both thinkers are notable for their distinctive style of doing philosophy in written form. Parmenides writes in hexameter verse (this was the normal genre for epic and didactic publications at the time) but is breaking the mould in order to devise expressions to convey the constraints of logical reasoning (the idea that there is such a thing as a logical necessity, which necessitates that something is the case if a sound argument proves that it is so). Heraclitus has a quite different style of presenting his views, uttered as mysterious sayings, many of them playing on ambiguities in language that are not just accidental but probably deliberate and part of the message he is trying to convey. For Parmenides we have some long passages of text, unbroken passages of up to 30 or more lines of verse from what was evidently a continuous argument. For Heraclitus we have a great many very truncated utterances, nothing more than two or at most three sentences and most of them only one sentence, in some cases formulae that do not even contain a verb, and nothing that resembles a developed argument.

³⁸ See Daniel W. Graham, "Heraclitus and Parmenides," in *Presocratic Philosophy: Essays in Honour of Alexander Mourelatos*, ed. Victor Caston and Daniel W. Graham (Aldershot: Ashgate, 2002).; Alexander Nehamas, "Parmenidean Being/Heraclitean Fire," in *Presocratic Philosophy: Essays in Honour of Alexander Mourelatos*, ed. Victor Caston and Daniel W. Graham (Aldershot: Ashgate, 2002).; Catherine Osborne, "Was there an Eleatic Revolution?," in *Rethinking Revolutions*, ed. Robin Osborne and Simon Goldhill (Cambridge: Cambridge University Press, 2006).

It is traditional to think that Parmenides has discovered and introduced a new method into philosophy, namely the practice of defending your views with reasoned arguments, and it is tempting to think that those who came after him would have immediately recognised that this was the correct way to do things, and that it was no longer acceptable simply to make utterances expressing your vision of the world. It is partly for this reason that historians in the Anglo-saxon analytic tradition usually assume that Parmenides was writing after Heraclitus, and that Heraclitus must have been ignorant of the progress that Parmenides had made in discovering how philosophy ought to be done, and what kind of proof is required to defend the truth of a philosophical theory. But philosophers from continental Europe tend to rate Heraclitus more highly and are not so narrowly committed to the idea that there is just one kind of proof or that philosophy can only be done in the analytic style. And for them it remains possible that Heraclitus was responding to Parmenides. For it might be that Heraclitus knew the work of Parmenides but did not share his idea that the test of a good theory is the soundness of the proofs given in support. The test of a good theory might be the way in which it opens one's eyes to things about the world that one had not noticed before. In Heraclitus's words this would be a matter of revealing the *logos*; that is, revealing the underlying rational structure of the world we live in, which one can come to understand once one perceives the hidden message in Heraclitus's enigmatic utterances (utterances which themselves mirror in their form the enigmatic structure of the world they encapsulate).

Parmenides's work comes in three parts of which the first two are the best preserved. The first part (the first 23 lines of fragment 1) is a proem or introduction in which Parmenides pictures a young man on a mythical journey to meet a goddess far off the beaten track beyond the gates of night and day. In the rest of the poem the young man reports the words spoken by this goddess. The poem is thus couched in the form of a divine revelation. There is scope for considerable speculation regarding the significance of the details of the journey recounted in the proem and the mythical motifs employed there.

The second part of the poem ("*To truth*") is the most famous. This recounts the "way of enquiry" that the goddess recommends as the only route to truth. In this section the goddess proposes that the only acceptable premise from which to start an argument that leads to truth is the affirmative claim "is", whereas any premise that is couched negatively ("is not") goes nowhere. Assertions in the form "is and is not" seem to be "backward turning" (fragment 6.9), perhaps because any progress towards truth achieved

by the affirmative part of the claim is undone by the negative part. The basis for this thought may be something to do with the idea that the truth is *what is so*, while falsehood is *what is not so*. In order to state the truth, then, we must state what *is*, not what *is not*.

Parmenides's Goddess derives a number of crucial claims on the basis of the idea that we cannot think or speak of what is not, and that 'nothing' cannot exist at any time. The arguments in "*To Truth*" are challenging, because they appear to lead to the conclusion that there can be only one thing, and that there can be no change, no beginning, no end and no past or present time. Naturally we are inclined to doubt the conclusions, but the important thing is that Parmenides' Goddess demands that we judge the arguments on the basis of reason (at least this is the normal interpretation of her challenge at line 5 of fragment 7 "But judge by reason my battle-hardened proof").

After this devastating monism, the third part of Parmenides's poem ("*To opinion*") comes as something of a surprise. The goddess introduces it by saying that she has completed her reliable account of the truth and that the young man must now learn the opinions of mortals. The reason for this obligation to understand something that is apparently not true, perhaps even deceitful (fragment 8 52), is somewhat unclear and a matter of controversy in the literature. She goes on to provide a cosmological narrative in something like the same style as earlier scientific and philosophical work of the Milesian tradition, invoking a pair of principles apparently called "fire" and 'night". In several respects this narrative is very advanced for its time. For instance it is clear that Parmenides knew that the moon gets its light from the sun, and this seems to be a breakthrough unknown to anyone earlier (fragment 14).

Scholars have wondered, and continue to wonder, why Parmenides has his Goddess present a model cosmology and yet claim that it is not the truth. Is it intended to be the best possible attempt at a scientific account of the world of the senses? How then does the world of the senses, the world of mortal opinion, relate to the "truth" or reality, which, apparently, is supposed to be one unchanging being? Parmenides gives very few hints as to the status of the cosmology in the third part of the poem, and most modern scholarship has taken his work in *On truth* as his most significant contribution to philosophy. And indeed the challenging arguments against change and plurality in that work were of lasting significance from Plato onwards, prompting the move towards separating a metaphysical world of reality from a physical world of appearances.

Turning back to Heraclitus, we should briefly examine some of his theses, including those mentioned above (that everything flows, that there is a unity in opposites and an underlying pattern in all change). The first of these themes appears most obviously in the famous sayings about the river. These are three texts preserved by different authors. It is a matter of controversy whether all three derive, with varying degrees of accuracy, from one and the same Heraclitean saying or whether (perhaps more likely) Heraclitus said a number of similar things about rivers. These are the texts as we have them:

- (a) "It is not possible to step twice into the same river, nor to touch mortal substance twice in the same condition, but it scatters and comes together again; it comes and goes with an acute and swift change." DK 22 B91
- (b) "Different and different waters flow onto those same people who are stepping into those same rivers." DK 22 B12
- (c) "We do and we don't step into the same rivers. We are and we are not." DK 22 B 49a

The sayings can be taken at face value, as observations about the nature of rivers and the flow of constantly new water in them. But they can also be read as more general claims, about the nature of reality and the constant change which means that things and people are not permanently in the same condition even though we regard them as in some sense "the same". What should we learn from noticing that? Either that we are wrong to think of them as "the same", or that "the same" does not always refer to the same physical material.

If we take the latter reading, then we might say that being the same river *requires* a constant flow of new water. That's what a river is. And the same might be true of the world and other things in it. To be a "World" is to have a dynamic environment in which things happen. Yet, at the same time, the events should not be wholly random or chaotic. The water in the river obeys a certain set of rules; it flows one way, although its path too may change in a measured way. The predictable patterns that govern the processes in nature, and the way we identify and re-identify the "same" objects around us, seem to be an important key to understanding the world for Heraclitus. He says that there is a rationale or system (a *logos*) which is both obvious to those who look for it and also hidden from those too sleepy to notice it:

This rationale exists for ever, but humans grow up for ever uncomprehending of it, both before they've listened and on first hearing. For despite the fact that everything happens in accordance with this rationale, they resemble inexperienced people as they experience expressions and deeds of this kind, such as I am setting out, as I draw the distinctions in accordance with nature for each and say what condition it is in. But for

other people even what they are doing when awake passes them by, in just the way that the things they do when asleep pass them by.

DK 22 B1

The rationale that gives sense to the structure and changes of the world may also make sense of the relation between opposites (which is another prominent theme in Heraclitus's work). He makes various claims to the effect that things which are apparently opposed are (really?) one and the same. Here are some examples:

The road up and the road down are one and the same

DK 22 B60

The sea is a most clean and most polluted water. Whereas it is drinkable and life-saving for fish, it is undrinkable and deadly for humans.

DK 22 B61

Hesiod: a teacher of most people. They are aware that he knows most things—he who did not have knowledge of day and night. For they are one.

DK 22 B57

Disease makes health pleasant and good; hunger does so to fullness; weariness to rest.

DK 22 B110

The different examples seem to appeal to different ways in which the opposites are linked or mutually dependent, so that it is hard to see the pattern which Heraclitus might have in mind in saying that it is all explained by an obvious rationale that most of us are unaware of.

Apart from these obscure sayings (of which there are many more than we can investigate here) Heraclitus offers us little in the way of sustained analysis or explanation. For these reasons Heraclitus's philosophical position remains hard to reconstruct in detail, although we have access to over one hundred brief quotations of this kind, which seem to derive from his book.

In the next two generations of philosophers two followers of Parmenides, Zeno of Elea and Melissus of Samos, make important contributions in metaphysics. They are often classified as belonging to an Eleatic school of thought, because both Parmenides and Zeno actually came from Elea. Besides the shared doctrines, both thinkers share Parmenides' commitment to providing arguments in support of their views. Zeno, however, is distinctive because he adopts an indirect method of proving a hypothesis by showing the impossibility of any alternative. For instance, he sets out to show the impossibility of dividing up space and time, by demonstrating that however you divide it you reach absurd or impossible results.

Here, for example, is one way in which we might reconstruct his first paradox concerning motion. Imagine a runner at the starting line of a running stadium. Is it possible for him to reach the finishing line at the other end? Well, yes, we might think. But no, says Zeno. Because actually, however

long he runs he will never get there. Here's why. Before he gets to the end he must reach the half way point which lies between here and there. After that he will need to cover the remaining distance, which involves first reaching the point that lies half way across that distance (that is, three quarters of the complete course). Then he will need to run half of the remaining distance and then half of what is left. This continues for ever, for there will always be a distance ahead of him remaining to be traversed. However many times he runs half of the remaining distance, he will always have the other half between him and the end.

This paradox assumes that the distance to be traversed can be divided infinitely into smaller and smaller parts. By subdividing in this way, we can conceptualise the entire task as composed of smaller events, consisting of running through an infinite series of smaller and smaller distances. Since the series is infinite, it has no last distance, and the task does indeed seem to be endless. How, then, are we to resolve this puzzle if we do indeed believe that space is infinitely divisible, at least in mathematical theory, even if it would be too complicated to mark such small divisions on a real race track?

One way to resolve part of the difficulty is to observe that time too is infinitely divisible. And, moreover, if the runner is continuing at the same speed throughout, he will pass through the smaller and smaller distances in shorter and shorter periods of time. The smaller the remaining distances the more quickly they will vanish in minute bits of the remaining time. For indeed the time taken to complete the *whole* run is not longer just because we have subdivided it into very small components.

Zeno has several arguments of this kind. They are designed to destabilise our sense that space and time can be unproblematically divided into chunks, either finite numbers of such chunks or infinite numbers. The arguments are intended to force us into conceding that plurality is impossible, and all that goes with it, because it leads to irrational results. It is tempting to think that modern mathematics has easily resolved these puzzles. But it remains true that the idea of *completing* an endless set of tasks is indeed problematic and irrational.

Melissus also followed Parmenides in most of his thinking. He tried to prove that reality must be permanent, unchanging, and unitary. His one major departure from the conclusions in Parmenides' *To Truth* is that Melissus claims (in fragment 2) that reality lasts throughout time (rather than being timeless without past or future as Parmenides had suggested). He also holds that reality is of unlimited magnitude,

there being no void or nothingness beyond its limits, and he provides a sophisticated argument in fragment 8 against trusting the senses when reason shows us that they must be wrong.

We should conclude this section by noting that the extensive fragments of the atomist Democritus (mentioned above for his cosmology) include some important remarks about knowledge. It appears that these fragments may be the remains of some quite sophisticated work on this subject. In particular he explores the idea that theoretical knowledge derived from reasoning is superior to mere sense perception (and he concludes that much of our sensory experience is subjective and dependent on the condition of the body or of the environment), but then he also notices that his attempt to condemn the senses is somehow self-defeating or paradoxical, since the mind has to use sensory evidence to conclude that the senses are unreliable.³⁹

8. Soul and Mind

Inquiry into the nature of soul and mind begins with Thales. Aristotle reports that Thales thought that "all things are full of gods" and takes this to be expressing a belief that there is soul (or mind) mixed into the whole universe.⁴⁰ It is also plausible to think that his comments on magnets (that he thought that they had souls) implies that soul is related to the ability to move things of your own accord.⁴¹ Yet these thoughts tell us little about the psychology of the human soul, and seem to be more related to physics (why do things move? are some things self-moved?) and biology or cosmology (is the whole world alive, or just some parts of it?).

The next stage in the development of the philosophy of mind seems to be an interest in personal identity, and the soul as the location of the self. We have already noted the early evidence for the idea of re-incarnation in Pythagorean thought. This is also taken up by Empedocles in the fifth century, and for Empedocles we have much more extensive evidence, although much of it is controversial. Empedocles is often read as a philosopher in the cosmological tradition (he introduced the idea of four basic elements,

³⁹ The main texts are DK 8B8, B9, B11 and B125.

⁴⁰ Aristotle *De anima* 411a7-8, DK 11A22.

⁴¹ Aristotle *De anima* 405a19; Diogenes Laertius *Lives* 1.22.

from which other stuffs are made by mixture,⁴² and suggested that the world alternates between periods of increasing unity and periods of increasing disunity, the former governed by love and the latter by strife.⁴³ In biology he is noted for the idea that the existing species of animals might have developed by natural selection).⁴⁴ Empedocles succeeds in combining features of both the Eleatic and the Pythagorean traditions in an extremely complex world system which he described at length in a major work of poetry running to several books. But although there is a kind of cosmology there, it is important to notice that the cosmological narrative ties in with a narrative that invokes causation in the form of choices made by *intelligent beings*. Indeed the idea that the world alternates between love and strife should not necessarily be taken to be a metaphor. Rather the world is governed by "elements" which are also *gods* or *spirits* (*daimones*), and the behaviour of these spirits is governed by their attraction towards or repulsion from each other, that is their love or their hatred. Among the key texts known from the poem of Empedocles is a famous passage in which he describes these spirits being expelled from the perfect unity and condemned to wander the world, repeatedly reincarnated in different elemental environments, for a period of thirty thousand seasons. It is a sentence meted out as punishment for a crime they have committed, perhaps murder.⁴⁵ This ties in with other passages in which Empedocles protests against sins, such as eating meat and slaughtering animals for sacrifice, which are sinful because the animals are or may be reincarnations of our dearest human relations.⁴⁶

Empedocles' work is a curious mixture of detailed scientific analysis (he includes some detailed work on how the senses work, and on respiration)⁴⁷ and deeply religious explanations of our place in the world and of the way to escape from the world and achieve a period of salvation for our spirits or souls. It is controversial whether all this work belongs to one poem or to two separate works, one in physics and one in moral and religious thought. The controversy has been fuelled by the discovery in the 1990s of

⁴² DK 31B6, 31B21.

⁴³ DK 31B17

⁴⁴ DK 31B57-61, Aristotle *Physics* 198b29, Simplicius *In Phys* 371.33

⁴⁵ DK31B115

⁴⁶ DK 31B136, B137

⁴⁷ DK 31B84, B88, B89, B100

additional evidence on a very poorly preserved papyrus,⁴⁸ supplementing the existing evidence derived from two divergent traditions in the ancient sources.

We should conclude this section by mentioning the material in Anaxagoras and Diogenes of Apollonia on the role of mind in the cosmos (mentioned above) and the work of Democritus in developing a materialist account of perception and knowledge.⁴⁹

9. Political and ethical thought

It is often said that ethics was not invented until Socrates started asking about how one ought to live, but this is hardly fair to the Presocratic period. Philosophy was already interested in exploring or dictating how a person ought to live by the time the Pythagoreans became an influential society with political and social roles in the sixth century in southern Italy.

Let us look at the political role of the Pythagoreans briefly first. The main evidence for this comes from Iamblichus's *Life of Pythagoras*, but Iamblichus (c.250-c.325 A.D., a Neoplatonist) derives his material from Aristoxenus, a fourth century BC thinker from the Pythagorean city of Tarentum. Aristoxenus probably had access to oral traditions about the demise of the Pythagorean community. Political life in Croton in the sixth century seems to have been organised round political associations, *hetaireiai*. Pythagoras and his associates seem to have established a successful association of this kind, which was the leading political party for at least twenty years. How far the members of this political association were identical with the members of Pythagoras's philosophical and cult following is unclear. According to the tradition, the Pythagoreans gave up their involvement in politics after the arson at their Croton headquarters in about 500BC,⁵⁰ but the implication is that in the sixth century, it was the same group of people who belonged to the "Pythagorean way of life" and who had the political role in government of the wider community.

⁴⁸ Alain Martin and Oliver Primavesi, *L'Empédocle de Strasbourg: Introduction, édition et commentaire* (Berlin: Walter de Gruyter, 1999).

⁴⁹ See above under cosmology and metaphysics

⁵⁰ Iamblichus *Life of Pythagoras* 248.8-251.3 (DK14A6)

Perhaps the Pythagorean "way of life" was something that could be embraced to varying degrees. Yet the distinction recorded by Iamblichus between two sects known as '*acousmatici*' and '*mathematici*'⁵¹ does not seem to reflect different degrees of commitment but rather a divergence between two sects with different views on what could count as authentic pursuit of the Pythagorean rule of life. It seems likely that this bifurcation occurred after the death of Pythagoras, and reflects the new directions in mathematics and the exact sciences taken by some thinkers, the *mathematici*. Meanwhile the *acousmatici* are said to reject the claims of the *mathematici* to be true followers of the master. Instead they insist that one must adhere only to what Pythagoras himself actually taught, and in particular they take a fundamentalist attitude to a list of obscure formulae, which are to be known by heart, and perhaps acted upon (where the formulae take the form of instructions, and not the answers to questions. The latter are more like riddles).

Some sources give examples of the sayings (*acousmata*) revered by the *acousmatici* and some writers offer various speculations as to what they were for. Their role was not well understood by the time our sources were writing, if it ever was. The examples include some formulae that appear to be ritual instructions, such as "Do not stir the fire with a knife;" "Rub out the mark of a pot in the ashes;" "Do not wear a ring;" "Spit on your nail cuttings and hair trimmings;" "Do not pee facing the sun."⁵² Others are questions with official Pythagorean answers: "Q: What are the Isles of the Blest? A: Sun and moon." "Q: What is most just? A: To sacrifice." "Q: What's the wisest thing? A: Number."⁵³ Some sources call the sayings "*sumbola*" or tokens, and one possibility is that you could identify a fellow member of the secret society, if the person could give the correct answer to the test question, or if in their daily tasks they took trouble to perform the ritual act that was a mark of a devotee (an act that only one in the know would be looking out for and find significant). Another option is that some of the formulae that look like instructions are actually riddles, such that only those in the know understand the deeper meaning, a meaning that is not what the words seem to say.

⁵¹ Iamblichus *Life of Pythagoras* 81-6 (DK18.2; 58C4).

⁵² Excerpts from Iamblichus *Protrepticus* 21 (DK 58C6).

⁵³ Excerpts from Iamblichus *Life of Pythagoras* 82 (DK58C4)

One such ritual instruction is the famous Pythagorean prohibition on eating beans. Even in antiquity this was a matter of dispute. Was it genuinely an instruction not to eat beans? Or was it a riddle prescribing abstention from some other practice (for instance sex, or democratic politics)?⁵⁴ As with most aspects of the Pythagorean way of life it is almost impossible to get behind the façade of myth and legend to discover any reliable facts.

We have already looked at the work of Empedocles who seems to have been a thinker in the same tradition as the Pythagoreans, and had similar views on reincarnation, the offensiveness of meat-eating and the need to avoid eating beans.⁵⁵ In a rather different tradition, there are extensive sayings of an ethical nature to be found in the material attributed to Democritus, a man more famous for his atomist physics but who was clearly also keen to express his views on how one ought to live. Some of these seek to relate genuine pleasure and the good life to a calm state of the soul, conceived as a material entity materially affected by atoms in the environment. In this Democritus anticipates the search for "tranquillity" by way of moderate pleasure that is associated with the later Epicurean school of atomists.⁵⁶ Some thinkers have observed a resemblance between the ethical theories of Democritus and things we associate with Socrates (including the idea that it is a good idea to act morally)⁵⁷ but in Democritus's work the thoughts are undeveloped and rather superficial; which may, of course, be due to the inadequacy of the fragmentary sources.

Ethical enquiry becomes much more prominent in the period of the great Sophists, which also overlaps with the life of the historical Socrates (though not with the period in which Plato composed the dialogues that portray Socrates and the Sophists in conversation). The Sophists were travelling teachers who offered a form of private higher education for young men aspiring to make a success in political or professional life. Part of the task was to educate the student to be persuasive, to win in debates, so rhetorical skills and the use of language for effective communication was one aspect of the curriculum offered by teachers such as Gorgias and Prodicus. Another area of consideration was a form of meta-

⁵⁴ Diogenes Laertius *Lives* 8.4-5 citing Aristotle's lost work on the Pythagoreans (DK I4.8)

⁵⁵ DK 31B141

⁵⁶ DK 68B189, B191, B235

⁵⁷ DK 68B31, B174, B187,

ethics, concerned with questions about the constraints (if any) imposed by traditional customs, laws and moral codes. A key issue here was the debate about custom versus nature (*nomos* versus *physis*). Are moral constraints just conventions, devised by human beings and not natural? If they are not natural, is there any obligation to live by them? Would we not be better off living by nature's dictates? Several thinkers in the period of the Sophists were intrigued by these questions; the main ones we know of include, most importantly, Antiphon the Sophist and some characters portrayed in Plato's dialogues, such as Calicles and Thrasymachus.

The Sophists belong to a period of intense intellectual and artistic activity. Some of the same themes appear in speeches uttered by characters in tragedy (Sophocles in particular), comedy and in Thucydides' History of the Peloponnesian War. It seems safe to conclude that by the second half of the fifth century, philosophy had fully come to birth and was now making a widespread impact upon the intellectual, cultural and political life of the cities of the Greek world, and Athens in particular. In such a climate it is easy to see why the Sophists could make a living by teaching it to a growing crowd of young people hungry for challenging ideas, and why the Athenian populace might become increasingly worried about the effect such free thinking might be having on the morals and behaviour of the young. We can observe the signs of this anxiety in Aristophanes' comedy *The Clouds*, which worries about the sophistic training in rhetoric (making the worse argument appear the better), in the condemnation of Anaxagoras for atheism in about 450, and eventually in the trial and death of Socrates at the end of the fifth century.

Yet such events are, in some ways, the rewards for philosophy having reached its maturity and making a real impact on the lives of ordinary people.

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