

Early Ionian Philosophy: Thales, Anaximander, and Anaximenes

Following the reports of Aristotle (*Metaphysics* 983b27–33) and several others ancient sources (e.g. Sextus Empiricus *adversus Mathematicos* 7.89) it is fairly conventional to see Thales (*floruit* c. 600 (?) BC), Anaximander (*floruit* c. 580 BCE (?), died c. 547 BCE), and Anaximenes (*floruit* 545 (?) BC) as being among the first to inquire into the causes and principles of things in something like a systematic and naturalistic manner. All three were from Miletus, a prominent Ionian city on the western coast of Anatolia (modern day Turkey). While the Milesians seem to have been interested in numerous issues, including many that would nowadays be regarded as ‘scientific’ (such as the observation and prediction of phenomena such as eclipses, solstices, and floods), Aristotle and many of those who followed him focus especially on one particular aspect of Milesian thought: their (supposed) material monism, according to which the universe has one fundamental principle and underlying stuff.

Thales

[22] Herodotus, Duris, and Democritus are agreed that Thales was the son of Examyas and Cleobulina, and belonged to the Thelidae who are Phoenicians, and among the noblest of the descendants of Cadmus and Agenor. As Plato testifies, he was one of the Seven Sages. He was the first to receive the name of Sage, in the archonship of Damasias at Athens, when the term was applied to all the Seven Sages, as Demetrius of Phalerum mentions in his List of Archons. He was admitted to citizenship at Miletus when he came to that town along with Nileos, who had been expelled from Phoenicia. Most writers, however, represent him as a genuine Milesian and of a distinguished family.

[23] After engaging in politics he became a student of nature. According to some he left nothing in writing; for the Nautical Astronomy attributed to him is said to be by Phocus of Samos. Callimachus knows him as the discoverer of the Ursa Minor; for he says in his *Iambics*:

Who first of men the course made plain
Of those small stars we call the Wain,
Whereby Phoenicians sail the main.

But according to others he wrote nothing but two treatises, one *On the Solstice* and one *On the Equinox*, regarding all other matters as incognisable. He seems by some accounts to have been the first to study astronomy, the first to predict eclipses of the sun and to fix the solstices; so Eudemus in his History of Astronomy. It was this which gained for him the admiration of Xenophanes and Herodotus and the notice of Heraclitus and Democritus.

[24] And some, including Choerilus the poet, declare that he was the first to maintain the immortality of the soul. He was the first to determine the sun's course from solstice to solstice, and according to some the first to declare the size of the sun to be one seven hundred and twentieth part of the solar circle, and the size of the moon to be the same fraction of the lunar circle. He was the first to give the last day of the month the name of Thirtieth, and the first, some say, to discuss physical problems. Aristotle and Hippias affirm that, arguing from the magnet and from amber, he attributed a soul or life even to inanimate objects.

[25] Pamphila states that, having learnt geometry from the Egyptians, he was the first to inscribe a right-angled triangle in a circle, whereupon he sacrificed an ox. Others tell this tale of Pythagoras, amongst them Apollodorus the arithmetician. (It was Pythagoras who developed to their furthest extent the discoveries attributed by Callimacmis in his Iambics to Euphorbus the Phrygian, I mean "scalene triangles" and whatever else has to do with theoretical geometry. Thales is also credited with having given excellent advice on political matters. For instance, when Croesus sent to Miletus offering terms of alliance, he frustrated the plan; and this proved the salvation of the city when Cyrus obtained the victory. Heraclides makes Thales himself say that he had always lived in solitude as a private individual and kept aloof from State affairs.

[26] Some authorities say that he married and had a son Cybisthus; others that he remained unmarried and adopted his sister's son, and that when he was asked why he had no children of his own he replied "because he loved children." The story is told that, when his mother tried to force him to marry, he replied it was too soon, and when she pressed him again later in life, he replied that it was too late. Hieronymus of Rhodes in the second book of his Scattered Notes relates that, in order to show how easy it is to grow rich, Thales, foreseeing that it would be a good season for olives, rented all the oil-mills and thus amassed a fortune.

[27] His doctrine was that water is the universal primary substance, and that the world is animate and full of divinities. He is said to have discovered the seasons of the year and divided it into 365 days. He had no instructor, except that he went to Egypt and spent some time with the priests there. Hieronymus informs us that he measured the height of the pyramids by the shadow they cast, taking the observation at the hour when our shadow is of the same length as ourselves. He lived, as Minyas relates, with Thrasybulus, the tyrant of Miletus.

Diogenes Laertius 1.22–7 = DK 11 A1 (part), trans. R. D. Hicks

Thales, the one who started this sort of philosophy, says it is water (because of this, he also declared that the earth rests on water), perhaps reaching this supposition from seeing that the nourishment for all things is moist, that the hot itself comes to be from this, and what is alive lives by this (and what they come to be from is the principle of everything). Because of this, then, he reached this supposition, and because the seeds of all things have a moist nature, and water is the principle of the nature of moist things.

Aristotle *Metaphysics* 983b20–7 = DK 11 A12

Thales of Miletus declared that the principle of all things was water. For he says from water come all things and into water do all things decompose. He infers this first from the fact that the seed of all animals is a principle which is moist; thus it is plausible that the totality has its origin from the moist; second, that all plants are nourished and bear fruit from moisture, but when they are deprived of it they wither; third, that the very fire of the sun and the heavenly bodies is fed by exhalations of waters, as is the world itself

Aëtius 1.3.1, S 1.10.12 = Graham *The Texts of Early Greek Philosophy* 1.16, trans. D. Graham

Of those who say the principle of all things is one and in motion, whom [Aristotle] properly calls natural philosophers, some say it is limited in number, such as Thales son of Examyus, of Miletus, and Hippo (who is said to have been an atheist). They said the principle was water, being led to this view by considering what appears to the senses. For in fact the hot lives off the moist and dead bodies dry out and the seeds of all things are moist and every kind of nourishment is juicy. And things are naturally nourished by the very thing they are composed of. And water is the source of the moist nature and holds all things together. That is why they understood it to be a source of all things and they asserted that the earth rests on water.

Simplicius *In Phys.* 23.21–9 = DK 11 A13, trans. D. Graham

It seems, on the basis of what is recalled about him, that Thales took the soul to be something which puts things in motion — if indeed he said that the stone [i.e. magnet] has a soul because it moves the iron.

Aristotle *De Anima* 405a19–21 = DK 11 A22 (cf. Plato *Laws* 899b; Diogenes Laertius 1.24)

And some say that it [the soul] is mixed together in the whole. This is presumably why Thales thought that all things are full of gods.

Aristotle *De Anima* 411a7–8 = DK 11 A22

Thales was the first to show that the soul is a nature which is always putting things in motion or self-moving.

Aëtius 4.2.1 = DK 11 A22a

Anaximander

[1] Anaximander, the son of Praxiades, was a native of Miletus. He laid down as his principle and element *to apeiron* (the indefinite, unbounded, unlimited, infinite) without defining it as air or water or anything else. He held that the parts undergo change, but the whole is unchangeable; that the earth, which is of spherical shape, lies in the midst, occupying the place of a centre; that the moon, shining with borrowed light, derives its illumination from the sun; further, that the sun is as large as the earth and consists of the purest fire. He was the first inventor of the gnomon and set it up for a sundial in Lacedaemon, as is stated by Favorinus in his *Miscellaneous History*, in order to mark the solstices and the equinoxes; he also constructed clocks to tell the time.

[2] He was the first to draw on a map the outline of land and sea, and he constructed a globe as well. His exposition of his doctrines took the form of a summary which no doubt came into the hands, among others, of Apollodorus of Athens. He says in his *Chronology* that in the second year of the 58th Olympiad Anaximander was sixty-four, and that he died not long afterwards. Thus he flourished almost at the same time as Polycrates the tyrant of Samos. There is a story that the boys laughed at his singing, and that, when he heard of it, he rejoined, 'Then to please the boys I must improve my singing.'

Diogenes Laertius 2.1–2 = DK 12 A1, trans. R. D. Hicks

Anaximander, the son of Praxiades, of Miletus, the successor and student of Thales, said the principle (*archē*) and element (*stoicheion*) of what there is is *to apeiron* (the indefinite, unbounded, unlimited, infinite), being the first one to apply this term to the principle. And he says it is neither water nor any of the so-called elements, but some other *apeiron* nature from which all the heavens and the worlds in them come to be. Those things, from which the things that are come to be, are also those things into which the things that are pass away, in accordance with what must be. *For they give justice and restitution to one another for their injustice in accordance with the ordering of time*, as he puts it in rather poetic terms. It is clear that, observing the change (*metabolē*) of the four elements into each other, he did not think it appropriate to make one of them the underlying stuff (*hupokeimenon*), but something else besides them. He did not make out that coming to be occurs from the alteration of the elements, but from the separation of opposites (*enantiōn*). It is on account of this Aristotle placed him in the company of Anaxagoras.

Simplicius *In Phys.* 24.13–25 = DK 12 A9, B1

He said that the principle of what exists is a certain nature, namely that of *to apeiron* (the indefinite, unbounded, unlimited, infinite). From this the heavens and the cosmos that is in them comes about. It is eternal (*aidios*) and unaging and it surrounds all the cosmos (*pantas periechein tous kosmous*). He discusses time in view of being limited and of coming to be and of being and of destruction. He said that the principle and element of what there is is *to apeiron*, and he was the first to call the principle by this name. In addition to this, there is eternal motion in which there occurs the coming to be of the heavens. The earth is floating in suspension. It is not controlled by anything, but remains still due to being equally far from all things. Its shape is round, similar to a stone column. We walk upon one of the surfaces while the other surface is on the opposite side. The stars (*astra*) turn out to be a ring of fire, which are separated from the fire of the cosmos, and are surrounded by air. There are certain passages which are openings through which the stars appear. Accordingly, eclipses occur as a result of the blocking of these passages.

Hippolytus *Refutation* 1.6.1–4 = DK 12 A11, B2

It is clear from these considerations that consideration of the unlimited (*to apeiron*) is appropriate for physicists. They have all put it forward as a principle (*archē*) with good reason for it does not exist without reason and it cannot have any power except as a principle. For everything is either a principle or derived from a principle; however, there is no principle of the unlimited because then it [the principle] would be its limit (*peras*). Moreover, it is uncreated and indestructible in the manner of some kind of principle. For what comes to be must have an end (*telos*) and there is an end (*teleutē*) of all passing away. That is why, as we say, there is no principle of the unlimited but it seems to be a principle of other things and surrounds everything and rules everything — as is said by those who do not produce other causes besides the unlimited, such as *nous* or *philia* [cf. Anaxagoras, Empedocles] — and this is the divine. For it is immortal and indestructible, just as Anaximander and most physicists say.

Aristotle *Physics* 203b3–15 = A15, B3

Anaximenes

Anaximenes, the son of Eurystratus, a native of Miletus, was a pupil of Anaximander. According to some, he was also a pupil of Parmenides. He took for his first principle air or that which is unlimited. He held that the stars move round the earth but do not go under it. He writes simply and unaffectedly in the Ionic dialect. According to Apollodorus he was contemporary with the taking of Sardis and died in the 63rd Olympiad.

Diogenes Laertius 2.3, trans. R. D. Hicks