

The Presocratics

Preliminaries

The writings of the Presocratics are substantial – the standard edition of their works (by Hermann Diels, 1922, revised by Walther Kranz, 1961) contains three large volumes – and so we are immediately faced with the problem of text selection discussed in the Introduction. There is, in addition, another significant problem when it comes to the source material of Presocratic philosophy: it is fragmentary in nature. Furthermore, the fragments are of two kinds (at least according to Diels): some (the “A” fragments) are reports about the Presocratics given by other ancient thinkers, while others seem to be original to the thinkers themselves (“B”). Trying to

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defend a coherent interpretation of these fragments is a monumental challenge for a philological detective.

The “A” fragments pose a unique difficulty. For example, several of the most extensive of them come from Aristotle. But, as one scholar, echoing the complaint made by Kingsley cited in the Introduction, says, “Aristotle focuses narrowly on exactly that aspect of [his predecessors’] theories which is of relevance to his own intellectual concerns” (Inwood 2001, p. 73). In short, Aristotle may not give us an objective or accurate account of the Presocratics.

In this chapter, all my citations of the Presocratics will be from Diels and will be indicated by using his notation (for example, A12, B34). Unless mentioned otherwise in the notes, translations are my own. Before beginning, however, a small step backwards must be taken. The first author to be discussed in this book will not be a philosopher at all. Instead, he will be a poet, a myth-maker: Hesiod.

Before the Beginning: Hesiod

Thales of Miletus (a town on the far eastern or Ionian side of the Hellenized world, in what today is western Turkey) is generally regarded the first philosopher in the west. Very little is known about his life, but since many scholars believe that he correctly “predicted an eclipse which took place in 585” (Kirk, Raven, & Schofield [hereafter KRS] 1983, p. 76), this is a convenient, albeit contrived, date to pinpoint the beginning of western philosophy.¹

Even if Thales was the first philosopher, he surely was not the first person to think in ancient Greece. Nor was he the first to write. (Indeed, it is possible that Thales himself did not actually write a book of his own. See KRS 1983, p. 88.) Homer composed his extraordinary epics, the *Odyssey* and the *Iliad*, around 700, and these are rich with profound reflections on war, courage, friendship, honor, fate, mortality, marriage, personal identity, and a host of other themes.² Hesiod wrote the *Theogony* about the same time, and in it he told a story about the beginning and then the development of the world itself. During the seventh century the lyric poets Sappho, Alcaeus, and Anacreon gave exquisite voice to the human emotions.

With all this intellectual and literary activity before 585, what makes scholars so sure that Thales was the first to philosophize?

The answer is simple: “Thales evidently abandoned mythic formulations; this alone justifies the claim that he was the first philosopher” (KRS 1983, p. 99). Thales occupies the throne because unlike his predecessors he did not make up stories, write poems, or retell myths. To use the Greek word that encapsulates all these creative activities, Thales did not engage in *muthos* (the ancestor of our word “myth”). Instead, he was a practitioner of *logos*, of rational thought or speech, which is, in turn, the lifeblood of philosophy.

But what exactly is *logos* and what differentiates it from *muthos*? To suggest an answer, this section will take a peek at passages from Hesiod’s *Theogony*. The hope here is that by identifying what philosophy is not – namely the work of a storyteller or myth-maker – we will be in a better position in the next section to discuss what it actually is, and thus why Thales, rather than any of the poets, is traditionally counted as the first philosopher. (See Hyland 1992, pp. 29–33 and 38–44 for a good discussion of this theme.)

Hesiod begins the *Theogony* by invoking the Muses:

From the Heliconian Muses let us begin to sing, who hold the great and holy mount of Helicon, and dance on soft feet about the deep-blue spring ...

And one day they taught Hesiod glorious song while he was shepherding his lambs under holy Helicon, and this word first the goddesses said to me – the Muses of Olympus, daughters of Zeus who holds the aegis:

“Shepherds of the wilderness, wretched things of shame, mere bellies, we know how to speak many false things as though they were true; but we know, when we will, to utter true things.”

So said the ready-voiced daughters of great Zeus, and they plucked and gave me a rod, a shoot of sturdy laurel, a marvellous thing, and breathed into me a divine voice to celebrate things that shall be and things that were aforetime. (*Theogony*, 1–33)³

The Muses, daughters of Zeus and Memory, are the goddesses of inspiration. They “breathe into” (the literal meaning of “inspire”)

the poet; they fill him up with creative energy and enable him to sing. Without them he would be mute.

On the one hand, invoking the Muse is merely a convention traditionally employed by ancient poets. On the other hand, it signifies something basic to the act of literary creation: it cannot be fully explained. By invoking the Muses the poet denies ultimate responsibility for, and therefore knowledge of, his own poem. He needed the Muses, and they came to him from outside of himself. He did not make his poem up entirely by himself, and so he cannot quite understand it.

Hesiod tells a story: one day he was shepherding his animals when, for no apparent reason, he was visited by the Muses on Mount Helicon. They began by insulting him. A “mere belly,” a thoughtless and voiceless blob of desires, is what they called him. Even worse was what they said next. They warned Hesiod that even though they are capable of speaking the truth, they could well be telling him “a false thing,” and if so, he would have no way of finding out. After all, these are the goddesses of creative activity, and so their lies seem “as though they were true.” They are, in other words, plausible and effective.

As a “mere belly” Hesiod is utterly dependent on the Muses. They “breathed into him a divine voice” without which he would not have been able to “sing.” The situation implied by the invocation is therefore quite grim. Hesiod is in the grip of confessed liars, and he does not have the rational power to determine the truth of what they say. His is a precarious enterprise for the story he tells can never be fully verified.

To anticipate the next section and the transition to *logos*: the philosophical project, unlike the poetic or mythic one, will demand verification. The philosopher, unlike the storyteller, must accept full responsibility for his *logos* and will not be allowed to invoke a Muse. He must offer an argument, a set of reasons he himself conceives and articulates, for the views he presents. He must defend what he says. If he fails to do so, he may be deemed a “mere” poet.

After the invocation, Hesiod begins his actual song:

At the first Chaos came to be, but next wide-bosomed Earth, the ever-sure foundation of all the deathless ones who hold the peaks of snowy Olympus, and dim Tartarus in the depth of the wide-pathed Earth,

and Eros [Love], fairest among the deathless gods, who unnerves the limbs and overcomes the mind and wise counsels of all gods and all men within them. From Chaos came forth Erebus and black Night; but of Night were born Aether and Day ... (*Theogony*, 116–24)

In the beginning there was “Chaos.” The English is misleading. While it is phonetically identical to the word it translates, namely the Greek *chaos*, the latter has a different meaning. Our “chaos” is a confused mass of disordered parts, while the Greek means “the abyss,” or even better, the “gap.” It is the empty space in-between.

This is crucial. In the beginning there was an abyss from which, for no apparent reason, came Earth, Tartaros (the underground), and Eros (sexual desire). According to Hesiod’s Muse-inspired *mythos*, the beginning of the world is unintelligible. Unlike the creation story in the biblical Genesis there is no supreme being who brought the universe and all its inhabitants into existence. Unlike the big-bang theory, there is no explanation of the beginning. For Hesiod, the world just popped up.

The first generation of beings to emerge from the abyss included the Earth, on which most of the subsequent developments in the poem will take place, Tartarus, the place below the earth, and Eros. Note the descriptions of Eros. It “unnerves the limbs,” it masters minds, and it subdues wills. These phrases ring true: sexual desire can make us weak at the knees and drive us (and other animals) crazy. We fall madly in love and then, despite the fact that we know better, often act in stupid and self-destructive ways.

Eros plays an essential role in the poem because the *Theogony*, which literally means “the birth or generation of the gods,” is a kind of family history. In the beginning there was the empty abyss. Then came the first generation, which was composed of three members. Then came Night. And then Earth gave birth to Sky and Hills and the Sea. She then coupled with Sky and gave birth to all the gods and other beings that eventually populate the world with which Hesiod was familiar. In short, the *Theogony* is a genealogy, a family tree whose branches grow and are progressively occupied. Since the process by which this development takes place is sexual reproduction, Eros must be present at the outset to make all these future births possible.

These three features of the *Theogony* – Hesiod’s invocation of the Muses, the fact that no reason is given why Earth emerged from the primordial abyss, and the crucial role Eros plays in the subsequent sexual generation of the various inhabitants of the world – together express the poet’s basic conviction: the world in which we live is a shaky place. At its core it is not fully intelligible. It began in the abyss and this cannot be rationally comprehended. *Chaos*, after all, is some sort of empty space and so comes close to meaning “nothingness,” and no one can comprehend nothingness. (See Miller 2001 for an alternative interpretation of this passage.) This is because to understand or rationally grasp something requires that the something be determinate or distinct. It must be some thing, and not no-thing. To be intelligible is to be determinate, to be this rather than that. Because the abyss is indeterminate, nothing can be said or understood about it.

By contrast, the world, as Hesiod (and everybody else) actually experiences it, is essentially differentiated and intelligible. A tree is a tree and not a rock, and so we chop the former and not the latter. This tree is not that one. The door is not the wall, and so we walk through it rather than into the latter. This rabbit is not that bird and so we do not expect it to fly.

The trajectory of Hesiod’s *Theogony* is now clear. It moves from an incomprehensible one to an organized and thus comprehensible many; from a formless and indeterminate abyss to the determinations or differentiations of ordinary experience. Because “at first Chaos came to be,” the origin of our intelligible experience is itself unintelligible. This means that the intelligibility we take for granted is itself not entirely reliable. We are reminded of this every night when the bright light of day, in which distinctions between trees and rocks, rabbits and birds, can easily be seen, gives way to a darkness in which such clarity disappears. Night is a vestige of the abyss, from which it is directly descended. (“From Chaos came forth Erebus [another underworld] and black Night.”) Despite the trust we invest in the intelligibility of our daily lives – we are confident that we will walk through doors and not into walls – night often shakes us to the core.

To summarize: Hesiod's *muthos* is a genealogy whose undifferentiated and hence unintelligible beginning gradually develops into a world occupied by all the many divine, natural, and human entities with which we are so familiar. However distinctly delineated and well formed these entities might seem to be, their origin is blank and formless. The world, as our dreams and nighttime agonies too often remind us, is not quite as clear-cut as it seems during the day.

In a similar vein, the fact that mind-mastering and “unnerving” Eros is the energy source powering the genealogical development, implies that this development is also not completely intelligible or rational. After all, Eros makes those it attacks do stupid things and no one can predict or control it. Indeed, because Hesiod's story is a genealogy, contingency or chance is given a crucial role to play in the coming into being of the world and its inhabitants. All family histories are testimony to this. Why exactly did your grandparents get married and give birth to your parents?

Given Hesiod's basic conviction that the intelligibility of the world is precarious, it makes perfectly good sense for him to appeal to the Muses. The genealogy he retells is not fully amenable to *logos*. The only reason Hesiod can, for example, report that “at first Chaos came to be,” when *Chaos* itself is not rationally comprehensible, is because the inexplicable and unreliable Muses decided, for no apparent reason, to help him. As a result, the invocation to the Muses with which he begins his poem fits together beautifully with what his story actually says. The way Hesiod expresses himself, the form of his story, namely Muse-inspired *muthos*, coheres with the content of the story, namely a world beginning in *Chaos* and fueled by Eros. In this important sense, Hesiod's *muthos* has its own kind of internal coherence and integrity.

These three features of Hesiod's *Theogony* – the invocation of the Muse, the world's beginning in *Chaos*, and the centrality of Eros – are characteristic of *muthos* itself. In other words, *muthos* is a world-view, a conception of what it means to be a human being in the world. It is a powerful intellectual option, one which has never ceased to be attractive and compelling to human beings eager to express their own experience of life. It is not, however, philosophical. For this, we must turn to Thales.

The Ionian Philosophers of the Sixth Century

a) The Beginning: Thales of Miletus

Thales may well have been responsible for impressive breakthroughs in engineering, astronomy, and other areas. But far and away his most significant contribution to the history of western culture is revealed in the following statement by Aristotle, listed by Diels as an “A” fragment:

Of those who first philosophized, most believed that the first principles of all beings are only first principles in the form of matter. For that of which all beings are and that from which they originally come into being and that into which they finally perish, the Being persisting but changing in its attributes, this they state is the element and first principle of beings. And on account of this they believe that nothing comes to be nor is destroyed since this sort of nature is always preserved ... Thales, the originator of this kind of philosophy, declares [the first principle] to be water ... Perhaps he got this idea from seeing that the nourishment of all things is moist, and that the hot itself comes to be from this ... and also because the seeds of all things have a moist nature, and water is the first principle of the nature of moist things. (A12)

This passage typifies the problem of Presocratic source material discussed above. No writings attributable to Thales himself survive, and, to reiterate the complaint, many scholars believe that “Aristotle was not necessarily conscientious in using original sources” (KRS, p. 87). In fact, it is possible that Aristotle has translated Thales’ *logos* into his own philosophical terminology. Even so, this passage is so rich and it is extremely useful to assume it does represent Thales’ position (an assumption that is not implausible and cannot be disproven), for doing so will help account for, and give shape to, the subsequent philosophical developments of the sixth century. For these reasons, and fully cognizant of the grain of salt with which it must be taken, we will treat the passage above as if it accurately reflected Thales’ views.

There are several critical terms in the passage that will appear repeatedly throughout the Presocratic period, and will establish a general conceptual framework or worldview, which will be called “The Milesian Picture.”

- 1) The phrase “philosophize” translates the Greek *philosophein*, which literally means “to love [*philein*] wisdom [*Sophia*].”
- 2) “First principle” translates the Greek *arché*, but it could also be rendered as “origin,” “source,” “beginning,” and, significantly, “ruler.” The *arché* is thus the origin that persists and continues to exert authority.
- 3) “Beings” translates *ta onta*, which derives from the verb “to be” (*einai*). The tree, rock, door, wall, rabbit, and bird are all “beings.” Together they constitute the world. “Things” can also be used to translate *ta onta*.
- 4) “Beings” are all the particular items in the world that “come into being.” This verb translates *gignesthai*, “to become.” After “beings” come into being, they change; they become different. And then they perish; they cease to be. This entire sequence of activities can be encapsulated by the single word “Becoming.”
- 5) Like *ta onta*, *ousia* is also derived from *einai*, “to be.” It is a noun that in ordinary usage means “that which is one’s own, one’s substance or property,” but for the philosophers it comes to signify “Being” understood as what is most real and enduring.⁴ Why it is useful to capitalize “Being” in order to contrast it with “beings” will be explained shortly. Note that the Greek *to on*, which is the singular version of *ta onta*, can be used synonymously with *ousia*. Our word “ontology,” which means “the study of Being in general,” has its roots in *logos* and *to on*.
- 6) “Nature” translates *phusis*, the origin of our words “physics” and “physical.” In the passage above, it comes close to being a synonym of “Being.”

Why Thales’ *logos* was so extraordinarily influential, and why its departure from the prevailing worldview of the past centuries (from *mythos*) is genuinely revolutionary, can be explained by using these terms and by referring to figure 1.1, a diagram of “the Milesian Picture.”

Thales (and other Milesian philosophers) believed that there was an *arché*, a first principle that is the origin of, and so is responsible for, all beings. It itself persists: it does not come into being nor does it cease to be. It is not itself a being nor does it participate in

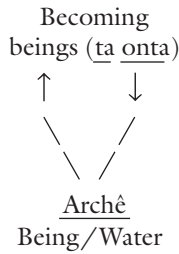


Figure 1.1 Thales

Becoming. Instead, it is that which is most real and enduring: it is Being or Nature. It is the unifying principle of all reality.

The things of this world come into being, and then pass out of being. They are finite. Everything that comes into being eventually passes out of being. My pet rabbit, for example, was born, came into being, in 1996 and went out of being in 2001. Everything that comes into being changes while it is in being. My rabbit began life as a bunny and after a while became a mature adult. By contrast, the *archê* neither changes nor does it come into being and perish. It always just IS.

Thales drew a distinction between Being and beings, between the one enduring principle that is most real, and all the many little beings in the world that are here today and gone tomorrow. Despite these differences, Being and beings are inextricably related, precisely because the former is the *archê*, and thus the origin of the latter. To reformulate this point: Thales was an ontological dualist who divided reality into two categories, Being and Becoming. Again, the former is the origin of, and so more real than, the latter.

At this stage “the Milesian Picture,” the general worldview with which philosophy began in the west, may seem similar to Hesiod’s *muthos*. After all, in his poem Hesiod also identified what is first or at the beginning, namely *Chaos*, and this functions as a kind of *archê*. There are, however, radical differences between the philosopher’s beginning and the poet’s.

Thales’ *archê* is an ordinary, observable substance: water. Unlike the abyss it is determinate and so it can be recognized. It is intelligible and can be understood. Furthermore, Thales (at least as presented by Aristotle) arrived at his conception of the *archê* (his “archaeology”) through a thoroughly rational process. Without a Muse to assist him, he observed that all living beings need water,

that the ocean on whose shore he lived seemed to stretch forever and that the earth seemed like a flat disk floating on its surface. He noticed that through the processes of evaporation and condensation water underwent various transformations. When it boils, it becomes more like air; when it cools, it returns to liquid form. During all these changes, however, it always remains what it is, namely water. (See KRS 1983, pp. 89–95 for a good discussion.)

These observable characteristics of water provided evidence that water is the basic and unifying element of all reality. In general, the Ancient Greeks conceived of the material world as composed of four basic elements – earth, air, fire, and water – and perhaps Thales thought that through evaporation and condensation each of the other three elements somehow came from water. This, plus its power to sustain life on earth and in the sea, and its apparently permanent supply, makes water an attractive and empirically plausible candidate for the *archê*.

At first blush, Thales' identification of water may well seem primitive to our sophisticated eyes. After all, we know that water itself is composed of hydrogen and oxygen, and so cannot possibly be the first principle. Nonetheless, Thales' rational articulation and empirical defense of his conception of the *archê* is such a stunning break with Hesiodic *mutbos* that the year 585 is as significant as any other in the history of western culture. For the first time human beings attempted to penetrate reality with reason alone. No longer was a Muse needed to supply inspiration. No longer was the heart of reality indeterminate and mad Eros its driving force. Instead, human reason, unaided by external (and unreliable) assistance, could work hard and figure out what the *archê*, the grounding principle of all things, is, and then take responsibility for giving good reasons why it should be so. Philosophy has begun.

Two points need to be made before moving forward. First, in this early period there was no distinction between what we call “philosophy” and “natural science.” Second, the Milesian Picture betrays a fundamental conviction (which to some might seem a prejudice): that which is permanent and changeless, namely the *archê*, is ontologically superior to that which is temporary and changeable. Being is prior, is “more real,” and in some significant sense, better than Becoming, than those beings which come into being, change, and then perish.

b) The First Debate: Anaximander v. Anaximenes

Anaximander

It is possible that Anaximander of Miletus (ca. 610–540) was Thales' student. Such, at least, was the view of the fourth-century philosopher Theophrastus, who described him as “the ‘successor and pupil’ of Thales” (KRS, p. 101). Even if this assertion cannot be proven, it will be useful nonetheless to think of the relationship between the first two Milesian thinkers in this manner. To be more specific, think of Anaximander as the very best of students, the one who exhibits the qualities every teacher seeks: he was a good and intelligent listener who understood and affirmed much of what his teacher had to say. But he was anything but a passive disciple. Instead, Anaximander was willing to criticize Thales. His doing so pushed western philosophy forward, into its first great debate.

Anaximander, who almost certainly wrote a book, was perhaps the first Greek to construct a map of land and sea. He probably did significant work in meteorology, zoology, and cosmology. But what makes him crucial in the history of philosophy, and what shows him to be just the kind of loyal yet critical student described above, is found in his one remaining fragment:

Anaximander ... said that the indefinite [*to apeiron*] was the first principle and element of beings, and he was first to give this name to the first principle. He says that it is neither water nor any other of the so-called elements, but some other nature which is indefinite, out of which come to be all the heavens and the worlds in them. It is that from which beings come to be, and into which they come to perish according to necessity. For they pay a penalty and reparation to each other for their injustice and according to the order of time. (A9)

Anaximander affirmed the general conceptual structure represented by “the Milesian Picture” he had inherited from Thales, but he also revised it critically. His worldview looks like figure 1.2.

Like his teacher, Anaximander conceived of the many beings constituting the world, those coming into being and passing away, as originating from and returning to a stable and unifying *arché*. Being underlies and organizes becoming. But Anaximander offered a fundamental criticism of Thales as well. The *arché*, he reasoned, cannot be a determinate substance like water. Instead, it is “the indefinite.”

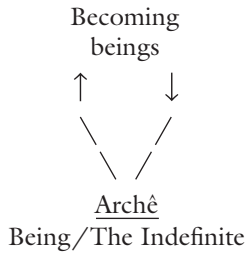


Figure 1.2 Anaximander

(The Greek word *apeiron* is composed of *a*, the “alpha privative,” which is a negative prefix, and the noun *peras*, “end, limit, boundary.”)

Anaximander agreed with Thales that Being, or the *archê*, must be different from beings. His criticism was that water, Thales’ candidate, was not different enough. Water is, after all, an ordinary, identifiable substance. But precisely because it is so readily identifiable it is like other things. What is characteristic of beings is their definiteness. A being is a “this” and not a “that.” A rabbit is not a bird because it has certain definite features that the bird does not. Because Being differs essentially from beings it must be stripped of all definition. It must be utterly indefinite.

To reach the same conclusion, Anaximander’s thought may also have proceeded like this: the *archê* is the source of everything else. It is the “one” underlying the “many.” But a definite thing cannot perform such a task. Because it is definite, it is limited. As the word itself suggests, to be de-finite, is to be finite. But the *archê* cannot be finite, for its job is to be the origin of everything. Therefore, Anaximander reasoned, while the Milesian Picture discovered by his teacher was fundamentally sound, Thales was wrong to identify the *archê* with a definite substance. Even though water has qualities making it attractive as a candidate for the first principle – it is in every living thing, the earth is surrounded by it, and it goes through the transformations of evaporation and condensation – it is still too limited. Water does not seem, for example, to be present in fire. As fluid as it is, it is still too determinate, too chunky, to be responsible for and somehow present in everything. The Milesians agree that the first principle is material, but according to Anaximander it must also be indeterminate. (This is, at least, Aristotle’s rendition of Anaximander’s argument. See *Physics* 204b22–30.)

One last version of Anaximander's criticism of Thales: the *arché* is Being. It endures, neither coming to be nor passing away, even as all things change. But, the argument goes, it stands to reason that all definite things, because they are finite, do come into being and pass away. Therefore, no determinate substance, no thing, can be permanent or qualify as the *arché*.

We can now see that at the very beginning of western philosophy there was a conflict between two competing conceptions of how human thought understands reality, between what came to be known as "empiricism" and "rationalism." If Thales was an empiricist, someone who thinks that human knowledge comes from observations made by the senses, then Anaximander was a rationalist. For him, the *arché* could not be observed. What we see with our eyes is limited and definite. The "indefinite," by contrast, cannot be seen, touched, heard, etc. It can only be thought. For Anaximander reason, unaided by the senses, could penetrate to the heart of reality.

The last chunk of Anaximander's fragment is strange, and so is worth repeating: "[The indefinite] is that from which beings come to be, and into which they come to perish according to necessity. For they pay a penalty and reparation to each other for their injustice and according to the order of time." The terms "penalty," "reparation," and "injustice" seem to jump out of nowhere. What do they mean in the context of Milesian ontology? The key lies in the notion of negation.

Imagine a piece of wood that is placed into a roaring fire. After a few minutes it is consumed by the flames, and becomes ash. When this happens the wood ceases to be. Coming to be ash requires the negation of being wood. When the bunny becomes a mature rabbit, the bunny is no more. Anaximander conceives of the process of Becoming as necessitating such negations, and he expresses this in terms of "injustice" and "retribution." The ash must be punished for having negated the wood. It must eventually pay the same penalty. When the wind blows, the ash will scatter and end up in the ocean. The ash, like the wood whose negation gave rise to it, will meet the same fate. Eventually, it too must be negated.

To put the point generally, Becoming is a strictly temporal affair. No being, no thing, is permanent, for it will eventually cease to be. Such, says Anaximander, is the "order of time." In other

words, time itself is nothing but a sequence of negations. Every moment or “now” will, upon arriving, become not-now. Time continuously flows from the future, through the present, into the past. The flow never ceases; the negations never stop. Time is the relentless negator, and everything temporal is victim to its cruel logic. If something comes to be it commits an “injustice”: it negates. And then it must face equivalent retribution.

Only the first principle, which can be conceived of as purely positive, is immune from this relentless stream of negations. It is one, unlimited, impervious to the ravages of time.

Anaximenes

Diogenes Laertius, an ancient historian writing in the third century ce, reported that “Anaximenes son of Eurystratus, of Miletus, was a pupil of Anaximander” (KRS 1983, p. 143). This cannot be proven, but once again it will be useful to think it to be the case. Imagine that Anaximenes studied with Anaximander because, like others of his generation, he was inspired by the radically new forms of rational investigation that were being practiced in Miletus. At first, he was deeply impressed by Anaximander’s criticism of Thales. He recognized the power of his teacher’s argument: if there is to be a first principle, then there must be an essential difference between it (Being) and all the many beings for which it is responsible. Since every thing (including water) is definite, the first principle must be “the indefinite.”

The logic seemed impeccable. Soon, however, a problem surfaced: the “indefinite,” precisely because it is not a thing, is unintelligible. To think is to think something, and not no-thing. Anaximenes had a disturbing realization: Anaximander’s *arché* was uncomfortably close to Hesiod’s *Chaos*, his “gap,” his “nothingness.” His teacher thus ran the risk of betraying the fundamental philosophical commitment to the intelligibility of Being, and so had to be criticized. (For a different view of Anaximander, and a comprehensive interpretation, see Kahn 1960.)

Anaximenes’ solution was simple: “air,” he asserted, “is the *arché* of beings” (B2). Air is a determinate, empirically observable substance, and so in this sense Anaximenes returned to Thales’ essential intuition. But air is far less determinate than water, and so with it Anaximenes could preserve some of the force of Anaximander’s

critique. Air, unlike water, is boundless but not indeterminate. While water cannot be present in fire, air can run through earth, water, and fire. It can go anywhere. It is invisible and as such is the least determinate of the determinate substances.

The first great debate in western philosophy has begun. Is Being definite and thing-like, as Thales and Anaximenes proposed? Or is it indefinite, as Anaximander insisted? There are advantages to both positions. Anaximander has on his side the force of reason. His *logos* was driven by a purely rational argument that looks something like this:

If X is definite thing, then X is finite.

If X is finite, then X comes into being and passes away.

The first principle neither comes into being nor passes away.

Therefore, the first principle is indefinite.

As powerful as such pure reasoning is, it culminates in a conclusion that cannot be empirically verified and so rests on the shaky foundation of logic alone. By contrast, Anaximenes insisted that Thales was headed in the right direction. The first principle must be a definite, observable substance. Because it is the most indefinite of the definites, air is the best candidate.

c) Sixth-Century Rationalism: Xenophanes and Pythagoras

Before moving forward to the fifth century, when powerful objections were raised against the Milesian Picture, two additional thinkers need to be briefly discussed. Both are best construed as rationalists who reason in a spirit similar to that of Anaximander.

Xenophanes

Like the Milesians, Xenophanes (ca. 570–475) was an Ionian. He came from Colophon, a city north of Miletus. Apparently he wandered around quite a bit, and perhaps he ended up in Elea, a city on the far western side of the Greek world, which later became the home of the great philosopher Parmenides.

A single insight animates Xenophanes' thought: Being must be essentially different from the beings of which it is the origin. Xenophanes develops this thought in theological terms. He begins with a critique of standard Greek polytheism, the religious view

held by the poets Homer and Hesiod. It is, he argues, absurdly anthropomorphic.

Homer and Hesiod have attributed to the gods everything that among human beings is shameful and blameworthy: stealing, adultery, and deceiving each another. (B11)

Ethiopians say that their gods are flat-nosed and dark, Thracians that theirs are blue-eyed and red-haired. (B16)

If oxen and horses and lions had hands, or could draw with their hands and do the things men do, horses would draw figures of the gods that look like horses, and oxen would draw figures of the gods that look like oxen. (B15)

Xenophanes' point is that human beings project an image of themselves onto what they call the divine. As a consequence, the Greek gods are no more than inflated versions of ourselves. As depicted by Homer, for example, Zeus falls in love, gets angry with his wife, and desires revenge. Such projections, however, tell us nothing about the divine itself. Instead, they only disclose information about those who do the projecting. If the gods are conceived as being dark, then the human beings who made them up are probably dark. If the gods have blue eyes, then rest assured that fair Thracians did the telling. To emphasize how absurd this sort of anthropomorphism is, and how little it tells us about the actual nature of the divine, Xenophanes says that if horses were able to draw a picture of the divine, it would look like horses. In other words, religious people are narcissists who see an image of themselves wherever they look.

From this scathing critique of polytheism comes Xenophanes' own teaching:

One god, greatest among gods and human beings, not like mortals in body and thought. (B23)

All of him sees, all of him thinks, all of him hears. (B24)

But without labor he shakes all things by the thought of his mind. (B25)

Always in the same place [god] remains moving not at all. Nor is it fitting [for god] to go here and there at different times. (B26)

God is the *arché* and “shakes all things.” God is essentially different from everything else. God is “one” while all “mortals,” indeed all things, are many, i.e., are composed of more than one part. A human being has eyes, ears, etc. God, however, does not. When God sees, “all of him sees.” By contrast, when a human being or an animal sees, only a part does the seeing. Indeed, everything we do – seeing, hearing, thinking – is complex and thus requires motion over time. When we think, we think a series of thoughts. When we walk, it is a step at a time. All “mortal” beings as well as the activities they perform can be divided into parts.

Xenophanes’ God somehow moves (“shakes”) everything else, while “moving not at all.” What exactly this means is unclear. Nonetheless, of this we can once again be sure: God is fundamentally unlike mortals. In order to move something else, a mortal thing must itself move. My hand moves the book by itself moving over the desk. By radical contrast God is, to use a phrase Aristotle will later make famous, an “unmoved mover.”

Xenophanes’ theology can be represented as a version of the Milesian Picture (figure 1.3).

Because God is essentially different from the mortal beings that it “shakes,” because God has an ontological unity unavailable to any empirical entity, it is knowable only by an act of thought. For this reason, there is an affinity between Xenophanes’ God, his version of the *arché*, and Anaximander’s “indefinite.” Both are accessed through a form of reasoning whose conclusion must be formulated negatively.

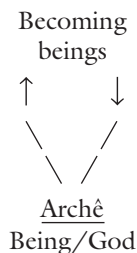


Figure 1.3 Xenophanes

Just as the “indefinite” is precisely what all things are not, so too is Xenophanes’ God “not at all like mortals in body or thought.”

(For an alternative interpretation of Xenophanes, which argues that God is not some one original Being, but instead “is identical with the world,” see KRS 1983, p. 172.)

Pythagoras

Pythagoras was born in approximately 570 in Samos, which is near Miletus in the eastern Aegean. He moved to Croton, a city located in what is now southern Italy, where he “founded a community that was philosophical, religious, and political” (Cohen, Curd, & Reeve 2000 [hereafter “Cohen”], p. 15).⁵

“The Pythagorean Theorem” is still taught today, but there is no evidence that Pythagoras himself discovered it. In fact, no writings whatsoever can be attributed to him. All of his work is shrouded in mystery, for his community of disciples was probably cultic in nature and its members sworn to secrecy. (See Burkert 1972 for a thorough discussion.) What we today call “Pythagoreanism” is based on a series of fragments collected over a long period of time and apparently written by Pythagoras’ followers. Three in particular express the central insight most relevant to the history of Greek philosophy. The first two come from Aristotle, the third from Philolaus (born ca. 470), the earliest Pythagorean whose work survives.

They [the Pythagoreans] supposed the elements of numbers to be the elements of all existing things. (Cohen, p. 19)

The elements of number are the even and the odd, and of these the latter is limited and the former unlimited. The One is composed of both of these (for it is both even and odd) and number springs from the One; and numbers, as I have said, constitute the whole universe. (Cohen, p. 18)

And indeed all things that are known have number. For without this nothing whatever could possibly be thought of or known. (Cohen, p. 20)

Simply put, the Pythagoreans believed that number constituted the intelligible structure of all reality. To borrow a metaphor used much later in western history, they held that “the book of nature” was written in the characters of mathematics. What makes “all existing things” into what they are, and what makes them knowable, is their arithmetic structure.

One of the best examples of this, and according to legend the first discovery made by Pythagoras, comes from music. The difference between mere noise and the harmonious sound produced by a lyre (the ancestor of the guitar) can be explained in terms of the numerical ratios of the musical scale. The beauty of music, which seems to be strictly a sensory phenomenon, can in fact be explicated mathematically. Under or behind music, then, lie ratios. This, for the Pythagoreans, is the great clue to reality itself. The order and harmony of the sensible world is grounded on the purely intelligible world of numbers.

Why the Pythagoreans might well have been a religious cult should now be clear. For them, the sensible things we touch and see and hear are but a superficial and temporary manifestation of a much deeper and enduring “spiritual” reality. The individual lyre playing this piece of music, and the flute playing that one, and the boy over there whistling, are all but instances of an intelligible arithmetic structure that itself can not be heard. Invisible, changeless, and utterly pure, numbers are more real than lyres, flutes and boys. In this sense, they are “spiritual,” and as such they can be virtually worshipped.

The Greek word for number is *arithmos*, the root of “arithmetic.” While it is properly translated as “number” it also means “count.” This nuance reveals an important difference between the Greek conception of number and our own. For the Greeks, *arithmos* implies plurality. A number is a number of things because when we count we count more than one thing. If there is a single book on my desk, nobody would ask, “how many things are on your desk?” Instead, the question would be, “what’s that on your desk?” Only when there are two or more books would the question arise, “how many?”

To count requires the identification of a unit to serve as the basis of the count. So, if there are several books on my desk, as well as several pencils, and you ask, “how many?”, I would respond, “how many

what?” “How many books?” you say. Now I can count, for the unit has been established. When the count is not of sensible objects, when I simply count 4–5–6 or add 7 and 5, the unit being used is pure and not the least bit sensible. It is impossible to touch, see or smell the number 3. Instead, it is strictly intelligible, thoroughly immaterial, entity.

The above implies that, quite unlike our own version of arithmetic, two is the first number. *Arithmos* is a count, and thus requires units to be counted. One is not itself an *arithmos* but is instead the “unit itself” and as such, as Aristotle puts it, is the “source (*archê*) of number” (*Metaphysics*, 1021a10). The One makes *arithmos* possible and in this sense “number springs from the One.” This accounts for what, to a modern thinker, seems so strange in the second quotation above: the One is “both even and odd.” All numbers, according to the Pythagoreans, were either even or odd. Since the One is the origin of and so participates in all numbers it must be both. As a result, it cannot itself be a number.

Because they conceived of *arithmos* strictly as whole positive integers beginning with two, the Pythagoreans would have obvious difficulty explaining (among other things) what today we call an “irrational number,” say the square root of 2. This cannot be expressed as a ratio between whole numbers. Legend has it that the Pythagoreans themselves discovered irrational numbers, and when they did the discovery was so disruptive of the cult that they swore their members never to divulge it.

While it is significantly different from other versions of the Milesian Picture, Pythagoreanism nonetheless can be represented by using its basic terms (figure 1.4). Like Xenophanes’ God and Anaximander’s unlimited, the Pythagorean One is fundamentally different from all those things for which it is responsible. “All things that are known have number,” but the One itself is not an *arithmos*. It is, to quote Aristotle again, the *archê* of all things arithmetical.

d) The Crisis of Sixth-Century Philosophy

The Milesian Picture dominated sixth-century thought and gave rise to all subsequent developments in western philosophy. It represents a powerful yearning for intellectual order, for it demands that the multiplicity, variety, and tumultuous change of the sensible

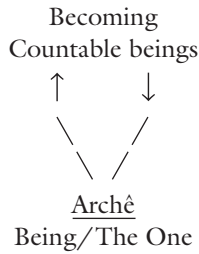


Figure 1.4 Pythagoras

world be derived from a single source, which itself can be discovered and then articulated through the hard work of human reason. *Logos*, the Milesians boast, can do it alone. Unlike Hesiod’s *muthos* no Muse is required. The human intellect, whether it operates on the basis of empirical observations (Thales, Anaximenes) or brilliant strokes of abstract theorizing (Anaximander, Xenophanes, Pythagoras) is a mighty tool and can penetrate, on its own, the heart of Being. Indeed, this lust for a theory of Being may well be the best way to characterize sixth-century thinking in general. It is also the source of its greatest problem: ontological dualism, the division of reality into two distinct categories.

Each of the thinkers discussed so far relies on a basic distinction between Being and beings, between what always IS and what is Becoming. Because Being is stable and enduring, while beings are constantly in flux, the dilemma repeatedly facing the Milesians is how to reconnect the two. For the empiricists, Thales and Anaximenes, the question becomes, how do water or air actually become the other elements? For Xenophanes, the problem is, how can a motionless God “shake” all things without itself moving? How can a single, utterly unified Being interact with the multiplicity of beings without losing its self-identity? The question haunting Anaximander is similar: if all things are definite, then how can they derive from a first principle said to be indefinite? To put the question in metaphorical terms, how can the first principle, upon making contact with the things for which it is responsible, avoid becoming polluted by them? The *archê* is, after all, meant to be that which is impervious to all change.

The crisis embedded in the Milesian Picture, then, is that after having succeeded brilliantly in distinguishing the ontological categories

of Being and Becoming, it is not clear how philosophers can possibly bring them back together again.

Heraclitus and Parmenides: Extreme Solutions

a) Heraclitus: Lover of Flux

Before beginning this section, two warnings: first, the interpretation of Heraclitus to follow will be controversial. To some extent, it is influenced by Plato's critique of Heraclitus as found in the dialogue *Theaetetus*, and as Kirk points out, Plato "may not have known as many of the actual sayings of Heraclitus as even we do" (Kirk 1954, p. 82). As will be explained shortly, it is also inspired by Nietzsche's commentary on the Presocratics in his early work *Philosophy in the Tragic Age of the Greeks*, a book which is hardly objective and clearly reflects the author's own intensely-held philosophical convictions. It would thus be reasonable for the reader to consult alternative readings of Heraclitus (Kirk 1954 and Kahn 1979 are good places to start, as well as KRS 1983, pp. 181–213. Also, see Hyland 1992, pp. 145–69.)

Second, throughout this section the word "fragments" will be used to describe the various sayings of Heraclitus. This implies that they were part of a larger whole, perhaps an entire book. It is possible, however, that Heraclitus fully intended his work to be fragmentary. If so, "aphorism," a concise, deliberately crafted statement or maxim, would be more accurate than "fragment" to describe his writings. Given the interpretation to be presented below, it is tempting to use "aphorism" to characterize Heraclitus' writings. Since, however, the exact status of Heraclitus' text cannot be established, this section will use the more conventional "fragment."

Translations below are my own, and as usual will be indicated only by their standard Diels number.⁶

With a single, insanely bold stroke, Heraclitus of Ephesus (who probably did his writing early in the fifth century) resolved the crisis of Milesian philosophy: he eliminated Being. With no Being in the picture, the enormous problem of accounting for the relationship between the things of Becoming and the *arché* vanishes. (See figure 1.5.)

Heraclitus expressed his essential insight imagistically: "Into the same river it is not possible to step twice" (B91). This is not merely an empirical observation about the continual flow of water

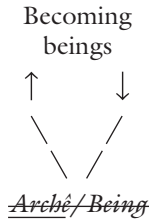


Figure 1.5 Heraclitus

molecules. It is an image of what always goes on everywhere. Nothing is stable, nothing endures. Heraclitus is thus an “anarchist,” which literally means one who denies the existence of a first and ruling principle, or *arché*.

No one has loved Heraclitus more than the nineteenth-century philosopher Friedrich Nietzsche. His affinity with the “obscure one,” as Heraclitus has been called since antiquity (see KRS 1983, p. 183), was so deep that Nietzsche effortlessly imagined himself speaking in Heraclitus’ own voice.

Heraclitus proclaimed: “I see nothing other than becoming. Be not deceived. It is the fault of your myopia, not of the nature of things, if you believe you see land somewhere in the ocean of coming-to-be and passing away. You use names for things as though they rigidly, persistently endured: yet even the stream into which you step a second time is not the one you stepped into before.” (Nietzsche 1962, pp. 51–2)

The key to this passage is Nietzsche’s notion of the “myopia,” the weakness of sight, which is reflected in ordinary language. Language, especially its nouns, misleads, for it suggests the existence of stable entities in the world. The word “rabbit,” for example, apparently refers not just to this particular animal right here, but to all rabbits. Like all beings, an individual animal is continually changing and soon will perish, but the noun might seem to promise that the species (or the “form” as Aristotle will later put it) “rabbit” will endure. The unreflective use of ordinary language might, therefore, suggest the sort of ontological dualism intrinsic to the Milesian Picture. One may be tempted to think that a species endures and just IS, even as individual members of that species come-into-being and cease to be. But to believe this is to suffer

from myopia. Nothing, neither this rabbit right here nor “rabbit” in general, endures.

The realization that it is impossible to step into the same river twice – which will be called the “flux” doctrine – is potentially awful. If nothing endures, then one may well conclude that nothing has meaning or value or importance at all. As Nietzsche puts it:

The everlasting and exclusive coming-to-be, the impermanence of everything actual, which constantly acts and comes-to-be but never is, as Heraclitus teaches it, is a terrible, paralyzing thought. Its impact on men can most nearly be likened to the sensation during an earthquake when one loses one’s familiar confidence in a firmly grounded earth. (Nietzsche 1962, p. 54)

Perhaps Heraclitus’ elimination of Being is most terrifying on a personal level. If nothing is stable, then neither am “I.” In other words, if he is right, then there is no enduring self uniting all the many experiences “I” go through, and so, in the deepest sense, “I” do not exist at all.

In a similar vein, Heraclitus’ insight plays havoc with the very possibility of *logos* itself. If ordinary language is deceptive, and nothing is stable, how can there be a rational account of this ever-changing state of affairs? Consider the following sentence: “everything is constantly changing.” If it is true, then presumably the meaning of the very words within the quotation marks are changing. But if so, then they do not have a fixed meaning. As a result, the Heraclitean elimination of Being might undermine the basic philosophical project of offering a meaningful, rational articulation of the world.

It is striking, however, that far from abandoning *logos*, Heraclitus seems to affirm it enthusiastically.

This *logos* always is but human beings fail to understand it. (B1)

Thus it is necessary to follow what is common. But even though the *logos* is common, most live as if they had their own private wisdom. (B2)

Listening not to me but to the *logos* it is wise to agree that all is one. (B50)

These fragments sound positively Milesian. But how can there be a unifying *logos* if everything flows and nothing abides? Given Heraclitus' "flux," how in the world could "all be one?"

There is a Heraclitean *logos* – he is a philosopher – but it is very strange and radically different from any belonging to a previous (or subsequent) Greek philosopher. This is because his *logos* embraces contradiction. For example: "The road up and the road down are one and the same" (B60). This translation, like so many, actually adds a bit to the original Greek. A literal version of the fragment would be, "road up down one and the same." The first "and" in the translation does not appear, and there is no verb. (The latter feature is not unusual: Greek often omits inflections of "to be.") Instead, what Heraclitus does is place two words with opposite meanings – "up" and "down" – side by side. In the original fragment, there would not even have been a space between them, just this: road up down one and the same.

Heraclitus likes to do this. "Changing it rests" (B75) is an example. So too is "into the same rivers we both step and do not step, we are and we are not" (B49). And this: "The same thing living and dead, and awake and asleep, and young and old" (B78). These are contradictions, the attribution of opposite predicates to a subject. In formal terms, a contradiction is expressed as "S is P & not-P," and at least since Aristotle, it has been declared illogical, illegal, and an affront to reason itself. If S can be both P and not-P, then S can also be Q or not-Q, R or not-R. S can be anything at all. If contradictions are allowed, then the possibility of a truth-giving *logos* (the root of "logical") seems to be destroyed. A basic requirement of logical reasoning, and hence of philosophy itself, seems to be that if "S is P" is true, then "S is not-P" must be false.

The logical situation is not quite as simple as suggested above. The "Principle of Noncontradiction" (PNC), the rule prohibiting contradictions as illogical, includes at least two conditions. First, S cannot be P & not-P "in the same way." Sue, for example, may be both intelligent and unintelligent if "intelligent" is used differently in the two instances. Sue may be intelligent when it comes to mathematics, but unintelligent when it comes to poetry. The PNC only

prohibits her from being both intelligent and unintelligent “in the same way.”

It is also possible, sadly enough, that Sue’s mathematical intelligence may decline precipitously when she gets very old. She thus can be intelligent and unintelligent at different times of her life. This indicates the other crucial condition placed on the PNC: S cannot be P and not-P “at the same time.”

This second condition is central to understanding Heraclitus’ thought. The phrase “at the same time” implies the possibility of a “moment” frozen in time. In other words, the sort of *logos* governed by the PNC is a timeless one. If Bob says “I am sitting at my desk” and he insists that the statement “I am not sitting at my desk” is false, it is because he thinks he is sitting at his desk right now. If Sue says “three is odd and not even” she believes her statement always has been and always will be true. By contrast, for Heraclitus no thing, no statement, and no truth can resist the relentless flow of time. There is no timeless truth; there is no “right now.” In this sense, for Heraclitus the PNC is simply irrelevant. For him, a philosophical *logos* must consist of opposites predicated of a single subject, for only they express the true logic of time. “The wise alone is one; it is willing and unwilling to be called by the name Zeus” (B32).

To explain a bit further, recall the perplexing statement made by Anaximander.

[The indefinite] is that from which beings come to be, and into which they come to perish according to necessity. For they pay a penalty and reparation to each other for their injustice and according to the order of time.

The temporal flow of becoming is a continuous series of negations. The wood, having been thrown into the fire, becomes ash. Coming to be ash requires the negation of being wood. In a metaphorical sense this implies an injustice and as a result the ash must be punished for what it has done. It must also suffer negation. When the wind blows it into the sea, it will become water. To put the point most generally, time itself is nothing but a continuous sequence of negations. Every moment or “now” will, upon arriving, immediately become “then” or “not-now.” Time continuously flows from

the future into the past, with the present as no more than a gateway, which itself has no magnitude or duration of its own, in-between. The flow never ceases. Time is the relentless negator, and everything temporal is victim to its unforgiving logic.

In good Milesian fashion, Anaximander conceives of the *arché*, which for him was “the indefinite,” as timeless. As opposed to the negativity of time and Becoming, Being simply and always is; it is purely positive. Heraclitus, by contrast, is an anarchist: for him, nothing is permanent, nothing is stable, for “Into the same river it is not possible to step twice.”

Because it embraces contradictions, Heraclitus’ *logos* is inherently at odds with itself, and so it is no wonder that “Timon of Phlius, the third-century B.C. satirist, called [him] *ainiktês*, ‘riddler’” (KRS 1983, p. 183). (*Ainigma*, the root of our word “enigma,” means “riddle” in Greek.) KRS characterizes this description of him as a “legitimate criticism” (p. 183). But on this they miss the point entirely. The enigma, the riddle, the self-contradiction, is in its own way truth-giving for Heraclitus. For only such a *logos* gives voice to the ceaseless flow of time. Consider the following fragment:

Human beings are deceived about the knowledge of things that are apparent, like Homer who was wiser than all the Greeks. For children who were killing lice deceived him by saying, “whatever we saw and grasped we have left behind, but whatever we neither saw nor grasped we carry with us.” (B56)

Knowledge is like lice. If it is grasped, it is lost. Only if it is missed is it kept. There is a necessary elusiveness in Heraclitus’ writing. It is meant to articulate the fluid alterations of temporal beings. It is designed to do justice to the negations of the temporal flow. His *logos*, therefore, must be enigmatic. Were it not, it would be false. Such, at least, seems to be the message implied by the following fragment: “An unapparent harmony than an apparent one is better” (B54). Literally, this fragment would read, “harmony unapparent apparent better.” Or consider this one: “Nature loves to hide” (B123).

Heraclitean flux seems to shake the ground under our feet. Nothing endures. Such a thought may well cause despair. If nothing endures, then one might conclude that nothing matters. But

Heraclitus' own writings do not suggest a trace of despondency. For example, he says, "One man to me is ten thousand if he is best" (B49). Indeed, the simple fact that Heraclitus wrote at all, and with such graceful and playful ingenuity, suggests a creative mind actively, perhaps happily, at work. The next question is why, given his conception of flux, didn't Heraclitus succumb to despair? Why did he bother to write at all?

Once again, Nietzsche offers a fruitful suggestion: "It takes astonishing strength," he says, to transform this potential for despair "into its opposite, into sublimity and the feeling of blessed astonishment" (1962, p. 54). But what sort of strength does Nietzsche have in mind? How can the thought of flux inspire such positive feelings? The clue lies in the following fragment: "A lifetime [or, eternity] is a child playing ... the kingdom belongs to a child" (B52).⁷ The Greek for "play" is related to "child," and so the fragment itself contains some word-play: "Child playing" translates *país paizôn*.

The kingdom is in the hands of a child playing. And what characterizes child's play? It is free-flowing and imaginative, spontaneous and, most important, not bound by a strict set of rules or objectives. It thus stands in radical distinction to adult play, which mainly takes the form of clearly defined games. In basketball, for example, the players are not permitted to use their feet to move the ball, and a referee is employed to make sure this rule is enforced. By contrast, when young children play, there is no referee and either there are no rules or the rules keep changing. The child uses her feet, her hands, her nose to move the ball any way she likes. Bound by no predetermined goals, oblivious to the clock, constrained by no demands, child's play aimlessly moves forward. In doing so the *país paizôn* is an image of Heraclitean flux itself. As Nietzsche puts it, "In this world only play, play as artists and children engage in it, exhibits coming-to-be and passing away, structuring and destroying, without any moral additive, in forever equal innocence" (Nietzsche 1962, p. 62).

The key phrase is "without any moral additive." Children do not play because they should. They play for fun and care not a bit about the health or social benefits of their activities. Their imaginations are constantly at work and are capable of transforming any object – the ball, the shoe, the shoelace – into a plaything.

“The kingdom is in the hands of a child.” In other words, the world is unstructured, aimless flow. “The most beautiful cosmos is a heap of sand poured out at random” (B124).

Heraclitus’ affirmation of play exerted a powerful influence on Nietzsche, and through him on his many postmodernist descendants (especially Derrida; see 1976, p. 50.) It is a delicious notion suggestive of a fluid, productive, joyful moving forward. Not surprisingly, however, Heraclitus himself seems to contradict it with the following: “War is of all things the father, of all things the king, and some he reveals as gods, others as humans; some he makes slaves, others free” (B53). Again the words are carefully chosen for their sound: *polemos patér pantón*, “war father of all things.” (Each of the three Greek words are roots of English ones: “polemic,” “paternal,” and “pan,” the prefix meaning “all.”)

At first blush, no two activities could seem more dissimilar than child’s play and war. The latter is the filthy work of deadly serious men, while the former is the province of happy, bubbling children. On reflection, however, the two share much. To illustrate, consider for a moment the lines on a map demarcating the borders of various countries. Most of these have been established by war. The United States, for example, has a long border with Mexico. This line between the two countries was the result of the Mexican-American War of 1846–8 when the Rio Grande was fixed as the southern boundary of Texas, which in turn became part of the USA.

Look at a map. The lines on it seem to suggest fixed structures. When one says “United States of America” one might well think of the shape formed by the borderlines. But to think this shape is some sort of stable form is to succumb to what Nietzsche called “myopia.” These lines are contingent and temporary. They were the result of a battle which could have gone either way. The fact that the USA won this particular war only means that it might lose the next one. If “war is the father of all” then the “all” is in flux, temporary, unstable.

This is the connection between war and play. Both are unpredictable, not bound by a fixed set of rules. Both reveal the power of time. In both there is an element of chaos, of surprise.

Several of Heraclitus’ fragments seem to have a similar theme:

Pigs take pleasure in mud more than pure water. (B13)

Mules would choose garbage rather than gold. (B9)

Pigs wash themselves in mud, birds in dust or ash. (B37)

These are not empirical observations made for the purpose of zoological classification. They are, once again, imagistic expressions of a philosophical idea. In this case, the idea is “ethical relativism,” the view that the meaning and authority of ethical values are dependent upon the person or group holding those values. In other words, the ethical relativist denies that any value is absolute. “Absolute” comes from the verb “absolve,” “set free from.” What is “absolute” is absolved of all dependence on anything else. An ethical absolutist believes certain values are binding regardless of who holds them. In opposition, the relativist refuses to grant values this sort of independence.

Heraclitus denies absolutism precisely because he affirms the flux. If nothing is stable, then no value could be stable. Instead, as the fragments cited above are meant to suggest, values are relative to the ones who hold them. A mule thinks rubbish is good; a person thinks gold. Since individuals and groups are always changing, so too are values. In eighteenth-century America, slavery was widely considered to be morally defensible as a social good. In twenty-first century America, it is universally denounced as immoral. For the relativist, slavery is neither good in-itself nor bad in-itself. Instead, it depends. It was good for those living 200 years ago, it is bad today. Values, like all else, change.

Before closing this discussion of Heraclitus, we must look carefully at a series of fragments that could well be used to challenge the basic argument of this section.

This cosmos, the same for all, not one of the gods nor of human beings made, but it was always and is and will be an ever-living fire being kindled in measures and being extinguished in measures. (B30)

For fire going forward will decide and compel all things. (B66)

All things are an exchange for fire and fire for all things, as goods for gold and gold for goods. (B90)

These fragments might seem to support an interpretation of Heraclitus as a Milesian thinker in the tradition of Thales and Anaximenes. On this reading, far from being an anarchist, he identifies the *arché* with one of the four standard elements, namely fire. There is, he might seem to be saying, an orderly “exchange” between fire, construed as the primal element of the world, and everything else. If this were the case, then fire would indeed play the role of Being. This is certainly the way Kirk and Kahn read the fragments, and the case they make is not implausible. Nonetheless, these “fire fragments” must be balanced with one already cited: “The most beautiful cosmos is a heap of sand poured out at random.” In other words, there is no orderly exchange, no structure to reality, only anarchy. In fact, the very nature of fire itself may suggest why.

Of the four elements, fire is the least likely candidate for the *arché*, which, after all, is required to be stable, enduring, the intelligible source of all the many beings in the realm of becoming. But fire is uniquely ill-suited to perform this task. This is because it is inherently and visibly in motion. And its motion, as every fire-watcher knows, is unpredictable. A fire dances. It plays. This is why it is so visually alluring and speaks so forcefully to the pyromaniac within.

Furthermore, there is an inherent contradiction lying at the heart of fire. While it is life-giving and, as the myth of Prometheus has it, the source of civilization itself, it is also terribly dangerous. It cooks our food and burns down our homes. It is both creative and destructive. Or, as Heraclitus puts it, “Fire is need and fullness” (B65). The dance of the flames becomes the roar of the inferno. For this reason, and not because it is suitable as a traditional Milesian *arché*, Heraclitus puts such emphasis on fire. In other words, just as he invokes the river, the child playing, and war, fire is an image of the ever-moving flux, of the astonishingly anarchic movement of all things.

b) Parmenides: Champion of Being

Even though he agreed with Heraclitus that the Milesian Picture was fatally flawed and so had to be thoroughly revised, Parmenides (born around 515) despised his enigmatic colleague. Utterly opposed to Heraclitus, he was the consummate rationalist, the purely logical man for whom the Principle of Noncontradiction was absolutely binding.

(*Warning*: as KRS 1983, pp. 182 and 244, notes, there is only a hint in Parmenides' writings to suggest that he may actually have known, or been responding to, Heraclitus at all. The opening statement of this section is thus quite possibly exaggerated. Nonetheless, it is a useful way to organize the material at this stage of the story.)

Parmenides' critique of the Milesian Picture looks like figure 1.6. With an extremism every bit as intense as Heraclitus', Parmenides eliminated the ontological category of Becoming and all the many beings that come-into-being, continually go through changes, and then pass away. As opposed to the dualism characteristic of the Milesians, Parmenides, who came from the other side of the Greek world (Elea, in present day Italy) was an ontological monist. For him, Being was one, indivisible, changeless, and eternal.

Even if Heraclitus' anarchy is difficult to swallow, Parmenides' elimination of Becoming may prove even more so. After all, what could be more obvious in all of human experience than the fact of flux and change, of motion and generation? We open our eyes and we immediately seem to be looking at many things moving around. Who in his right mind could deny this?

Parmenides' position is, as we shall see, deeply "paradoxical." This word comes from the Greek *para*, "to the side of" or "contrary to," and *doxa*, often translated as "opinion," but better conceived more broadly as "what seems to be the case." Most generally, *doxa*, an altogether crucial word in the history of western philosophy, means "the appearances." At times, especially in Aristotle, it can come close to meaning something like "commonsense" or "what people commonly say." Parmenides' ontological monism is paradoxical because nothing seems to manifest itself or appear as clearly as Becoming. What sort of reasoning led him to make his extraordinary denial?

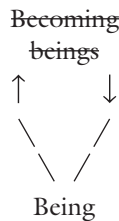


Figure 1.6 Parmenides

The first step of Parmenides' argument is found in the following fragment. (Parmenides, by the way, wrote in the form of poem in which a Goddess was addressing him. Despite this, he was in no way a practitioner of *muthos* as, say, Hesiod or Homer were. His is a thoroughly, indeed obsessively, rational *logos*. See Lombardo 1982, pp. 1–9, for a quite different interpretation.)

Come now, I will tell you, and having heard my story, you must carry it away with you, these are the only paths of inquiry to be thought: the one, that it is and that it is not possible for it not to be, is the way of Persuasion (for it accompanies Truth); the other, that it is not and that it is necessary for it not to be, this I say to you is a path completely unlearnable, for you can neither know that which is not (for it cannot be done) nor can you say it. (Fr. 2)⁸

The first step of the argument concerns “nonbeing.” This English phrase, which will be used consistently in this section, will cover several Greek phrases, including “it is not” and “that which is not.” (It is important not to be misled by these verbal phrases. Greek verbs are “synthetic”: they have their subject built into them and so do not require a separate pronoun. Thus, the one word *estin*, with no subject specified, can indeed be translated as “it is.” No “it,” however, is actually used. The phrase *to mê eon* is formed from a participle derived from *einai*, “to be.” *Eon* is just a slight variation in spelling of the word *on*, which is the root of “ontology.”)

As paradoxical as Parmenides' thought may ultimately be, his initial step is quite straightforward: nonbeing, he explains, is unthinkable. To discover what this means, simply try to prove him wrong: try to think nonbeing. No matter how hard you concentrate, it is impossible to summon “nonbeing.” To make this point more clear, substitute the word “nothing” for “nonbeing.” (Even if “nothing” is somewhat misleading as a way of translating *to mê eon*, it is nonetheless helpful as a way of appreciating the fundamental dynamic of Parmenides' argument.) Note again what happens: it is impossible to think nothing. To think, in other words, is to think something. Or, as Parmenides puts it, “The same thing is for thinking and being” (Fr. 3). He makes much the same point in more concrete terms in the following fragment: “But gaze upon things which although absent in the mind are securely present” (Fr. 4).

Think about your friend Sue. She's not in the room with you right now. But when you think of her, perhaps by summoning a clear visual image from your memory, you do not, because you cannot, think her as absent, but only as present. She is, to use the familiar metaphor, "in your head." Or reflect upon your own childhood. It is past. But you cannot think it as past, because when you bring your childhood to mind you bring it into the present. This is why we so commonly say "time flies," and why Parmenides' argument has such power. Upon thinking the past the gap between it and the present is obliterated. As a result, the passage of time, and so Becoming itself, may well seem to have no substance at all.

The Greek for "things absent" is *apeonta*, formed by the prefix *apo* – "away from, off" – and *eonta*, which like *eon* is a participial form of *einai*, "to be." "Present" translates *pareonta*, literally "being right here at hand." (Note that both English words have "ent" in them, which derives from the Latin *esse*, to be. *Absesse* means "to be away from," while *praesesse* is "to be present.") To put the point most generally, thinking for Parmenides is presencing. An absent object, like Sue or your childhood, can be thought of only as present. For this reason, nonbeing, or being-absent, is unthinkable.

However unexpected, this first step of the argument may seem plausible. But the second step, which follows directly from the first, will generate a conclusion even more difficult to swallow.

What is said and what is thought must be. For it is possible for it to be, but not possible for nothing to be. I ask you to consider this. For I bar you from this first path of inquiry, but next from the path on which mortals, knowing nothing, two-headed, wander. For helplessness in their breasts steers their wandering mind. But they are carried on equally deaf and blind, muddled, undiscerning swarms, for whom both to be and not to be are judged the same and not the same, and the way of all is backward-turning. (Fr. 6)

Some scholars "see a particular reference to Heraclitus" (Wright 1985, p. 81) in the statement, "for whom both to be and not to be are judged the same and not the same," and so he may well be the "two-headed" know-nothing Parmenides scorns. In any case, from this passage the basic logical critique Parmenides brings to bear against Becoming can be extracted.

Becoming is an ontological category. It is a concept, and a complex one, for contained within it are the additional concepts of both being and nonbeing. The most obvious sense of Becoming is coming-into-being and then ceasing-to-be. But both of these concepts are themselves complex and they too require nonbeing. Before something comes-into-being it must not have been, and when it ceases-to-be it, to put the point awkwardly, goes-into-nonbeing. As the first step of the argument dictated, however, nonbeing is an impossible concept: it cannot be thought. Therefore, since it is implicit in the concept of Becoming, the latter cannot be thought either. Upon analysis, Becoming is revealed as conceptually impossible.

To illustrate this argument by means of an image, think of nonbeing as a deadly computer virus that destroys any hard-drive it enters. Nonbeing is infectious. If it enters into any concept, it destroys it. It enters into Becoming, and so Becoming is annihilated.

One last way to put this point: the concept of Becoming is self-contradictory. As Parmenides puts it, “both to be and not to be are judged the same and not the same” by those who, like Heraclitus, would affirm Becoming. This is because Becoming requires and implies a temporal process, and time itself is a self-contradictory. A “moment” in time is what we call the present. But time’s moment has no duration for it is nothing but the gateway between the past and the future, both of which are not here now, i.e., are absent. The moment, therefore, is both present and absent, both now and not-now. It is precisely this sort of contradiction, which is the very life-blood of the enigmatic Heraclitean *logos*, that Parmenides condemns as an affront to reason itself. As a consequence, he is obligated by the force of his own reasoning to sacrifice Becoming. Indeed, Parmenides is above all else a strict rationalist. More specifically, he is a conceptual analyst. He dissects ideas and only if they are free from the nonbeing virus and pass the test of a logic governed by the PNC are they allowed to stand. Because of his commitment to this conception of rationality, he rejects the testimony of *doxa*. Consider the following:

For in no way may this prevail, that the things which are not, are. But you, bar your thought from this way of inquiry, and do not let the habit that comes from much experience force you along this path and direct your sightless eye and your ringing ear and your tongue, but decide by reason [*logos*]. (Fr. 7)

Recall that Thales was described above as an “empiricist.” He seemed to draw his conclusions about the world on the basis of observation. He saw that water was found in all living things, was seemingly inexhaustible, and that the earth seemed to float on it, and concluded that water must be the *arché*. The root of “empirical” is the Greek *empeiria*, which is related to *polupeiron*, translated above as “much experience.” Unlike Thales, Parmenides dismisses all who would claim to learn anything true on the basis of their experience of the sensible world. The eye, far from providing information, is “sightless,” and so the worst “habit” one could fall into would be to accept what one sees as actual knowledge. Instead, a thinker must rely solely on pure reasoning, on what Parmenides here calls *logos*, to arrive at the truth.

(This is an excellent example of just how flexible the Greek word *logos* is. Both Heraclitus and Parmenides claim to champion it, but what it means is radically different for each thinker. Indeed, what a philosopher means by *logos* goes a long way toward characterizing him in general.)

To put the same point in slightly different terms, for Parmenides there is a radical disjunction between *doxa* and Truth. As he puts it, “You must learn all things – both the unshaken heart of well-rounded Truth [*alêtheia*] and the opinions [*doxas*] of mortals in which there is no true conviction” (Fr. 1).

There is, for Parmenides, only one coherent line of thought: Being is. In the longest remaining fragment of his writings (Fr. 8), Parmenides, by means of the most careful argumentation, attributes four characteristics to Being.

1) First and foremost, “Because it is ungenerated it is also imperishable” (8.3). Being cannot come-to-be. If it did, it would have to come-to-be from something other than Being. It would have to come-to-be from nonbeing. Nonbeing, however, is not, so nothing could possibly come from it. Therefore, Being is “ungenerated.” Or as Parmenides puts it, “I will not allow you to say or to think that it came from non-being, for that nonbeing is can neither be said nor thought” (8.7–9).

In a similar vein, Being cannot cease-to-be. If it did, it would have to “go into” nonbeing, and this it cannot do. Therefore, Being is imperishable. More generally, from this line of argument “coming to be has ceased to be and destruction is unheard of” (8.20–21).

2) Being has no future: “How could what is be in the future?” (8.18). In other words, Being is only in the present tense. The phrase “it will be” implies that it is not now, and Being is now. In a parallel vein, the phrase “it was back then” implies that it is not now. Being has no past. As Parmenides puts it, “Nor was it ever nor will it be, since it is now” (8.5). In short, Being is pure presence. To reformulate using a term of enormous significance in the history of western culture, Being is “eternal.” It is important to be clear what this word means. The eternal is not the same as the immortal. Greek gods, for example, were conceived as being immortal. They were born, but they did not die. They existed just as we do, in the passage of time – they had a past and could anticipate the future – but for them time never ran out. By contrast, time does not pass in the eternal. Instead, it is presence without past or future. The immortal is the endless, the eternal is the timeless. (Of the philosophers we have studied so far, Xenophanes’ God, which moves without being moved, comes closest to the eternity of Parmenidean Being. It is not surprising, therefore, that Parmenides was reputed to have been a student of his [KRS 1983, p. 240]).

3) As (2) clearly implies, Being is “unchanging” (8.26) and “remains the same in the same and by itself” (8.29).

4) Being is “all together, one, continuous” (8.5–6). “Nor is it divided, since it all is alike” (8.22). In other words, Being is indivisible. Parmenides’ reasoning here is that division implies difference, and that difference implies the impossible concept, the deadly virus, of nonbeing. To illustrate imagine Being is a circle (figure 1.7):



Figure 1.7 Parmenides’ Monism

Now, imagine that Being were divided into four parts (figure 1.8):



Figure 1.8 Divisibility

This apparently simple maneuver generates a big problem: what makes one quadrant of the circle different from another? Presumably, the top right is not the same as the bottom left. As such, it must not

be the bottom left. But the entire circle is meant to symbolize Being. Therefore, if the top right is not the bottom left, then it is not Being. Nonbeing, however, is impossible. Hence, Being cannot be divided.

To make the same point, consider what the lines on the diagram might represent. Their function is to divide one quadrant from another. They themselves, however, are not part of any of the four quadrants. Hence, they must be nonbeing.

The basic point is that division implies difference, and difference – being able to say “this is not that” – requires negation. Because Being cannot be negated, it cannot be divided. It is one, continuous, and indivisible.

Parmenidean Being is accessible only to pure thinking, to *logos* understood in this sense of the word. By contrast, Becoming is the essential ingredient of *doxa*. It is important to emphasize that Parmenides would not disagree with this statement. Indeed, it is possible that in the second half of his poem he articulates the very structure of *doxa* as a self-contradictory movement between opposites (e.g., “all things have been named light and night” [Fr. 9]). No one could deny that human beings typically are aware of a multiplicity of being in constant change. What Parmenides does deny is that this ordinary empirical awareness contributes anything to our understanding of the Truth.

Because of this radical distinction between *doxa* and Truth, Parmenides is the first thinker in the west to don “the philosopher’s hat.” What this means is that he is the first to separate his work as a conceptual analyst from the ordinary living of his life. When Parmenides says, Being is “now, all together one, continuous,” he is speaking strictly as a philosopher. So, if you were standing on the railroad tracks, and a train were approaching, he would not advise you to stay there. If you argued that because Being is one the train could not possibly break you into lots of little parts, you would be making a big mistake. *Doxa* has its own kind of validity. Our experience is, of course, always based on the assumption of change, multiplicity, and Becoming. So, as an ordinary person, you would be well advised to get off the tracks. But donning the philosopher’s hat, one is compelled by the demands of strict logical analysis to admit that Becoming is an impossible concept.

Perhaps because of the purity of his conception of *logos*, his willingness to abide by the dictates of reason alone, Plato once used the phrase “Father Parmenides” (*Sophist* 241d) to describe his Presocratic predecessor. Far more than Thales or Anaximenes, whose work actually is of a piece with what today we might call physics or cosmology, Parmenides, the first great rationalist who discovered the concept of Being and argued that it must be eternal, changeless, and one, is the father of western rationalism.

Recall how warmly Nietzsche expressed his affection for Heraclitus. Not surprising, then, is what he says about Parmenides.

All sense perceptions, says Parmenides, yield but illusions. And their main illusoriness lies in their pretense that the non-existent coexists with the existent, that Becoming, too, has Being. All the manifold colorful world known to experience, all the transformations of its qualities ... are cast aside mercilessly as mere semblance and illusion. Nothing may be learned from them. (Nietzsche 1962, p. 79)

One’s sympathy towards phenomena atrophies; one even develops a hatred for phenomena including oneself, a hatred for being unable to get rid of the everlasting deceitfulness of sensation. Henceforward truth shall live only in the palest husks of the most indefinite terms, as though in a house of cobwebs. And beside such truth now sits our philosopher, likewise as bloodless as his abstractions. A spider at least wants blood from its victims. The Parmenidean philosopher hates most of all the blood of his victims, the blood of his empirical reality which was sacrificed and shed by him. (Nietzsche 1962, p. 80)

Nietzsche’s distaste for “Father Parmenides” can be countered by an admiration for the astonishing intellectual strength it takes to methodically think through concepts like Being, Becoming, and nonbeing, and the courage to be willing to abide by the result of one’s analysis regardless of how massively paradoxical it may be. It can also be countered by the often sad realization that because the past can only be thought by having been made present, time does indeed fly and its passage may really amount to nothing at all.

Fifth-Century Elementalism

The extreme philosophical positions of Heraclitus and Parmenides emerged in the fifth century as responses to the essential dilemma of the Milesian Picture, namely ontological dualism and the problem of reconnecting Being and Becoming. Some readers may find the extremism of both thinkers attractive in itself. Heraclitus and Parmenides each have the courage to think a single thought through to its end and they do not shirk from the conclusions they reach. However admirable this may be, neither could be ultimately satisfying, and Greek philosophy could not help but move forward. The Heraclitean denial of Being, while perhaps faithful to our experience of change, generates an elusive, self-contradictory, and enigmatic *logos*. Surely, one might object, something must BE stable out there, and philosophers can do better than make statements like “road up down one and the same.” By contrast, the Parmenidean *logos* concludes that Being is one, eternal, motionless, and indivisible. Even if its logical rigor is deeply impressive, its comprehensive denial of the truthfulness of *doxa* seems outlandish. Surely, one might object, the appearances cannot be all wrong.

The history of philosophy must continue, and its path is clear. There must be some sort of reconciliation between Heraclitus and Parmenides. This is precisely what later thinkers in the fifth century tried to provide. They were “elementalists.” They were persuaded by Parmenides’ arguments about Being. It must, they agreed, be eternal, changeless, and indivisible. But for them Being was not just one. Instead, they conceived of “bits of Being,” or elements, each of which had the features Parmenides attributed to Being. This move allowed them to offer a far more generous account of Becoming than Parmenides and thereby to preserve the ordinary experience of multiplicity and change. In a qualified sense, the elementalists maintained, beings do come into being, change, and go out of being. But they do not do so simply or absolutely. Instead, when things seem to come into being what really happens is that elements are combined. When they change or go out of being elements separate.

My pet rabbit came into being in 1995. Various elements, such as the carbon atoms that are essential to all organic matter, combined to form her. She died in 2001. When she did, her carbon atoms did

not cease to be, even if she did. Instead, they scattered, eventually to be recombined to form some other organic compound.

This insight, that while the basic constituents of the universe remain unchanged, they do move around and enter into and go out of various combinations, is fundamental to all forms of fifth-century elementalism. In this way Becoming is retained as an ontological category, albeit at a much lower level than Heraclitus would allow, while much of what Parmenides said about Being is retained, but only as a description of the elements.

One fifth-century thinker, Anaxagoras, succinctly expressed the elementalist credo:

The Greeks incorrectly believe that there is coming to be and perishing, for nothing comes to be, nor does it perish, but from things that are they are mixed together and are separated apart. Thus it would be correct to call coming to be “being mixed together,” and perishing “being separated apart.” (B17)

On the level of the elements, which is the ultimate level of reality itself and is, as we shall see, microscopic, nothing perishes or comes to be. On the macroscopic level of ordinary objects, things do, in a qualified sense, come to be and perish. The power of this ingenious reconciliation of Heraclitus and Parmenides will soon become evident.

There were three great elementalist thinkers, Anaxagoras (500–428), Democritus (born approx. 460), and Empedocles (493–433). We will begin with Democritus who, although not the earliest in a chronological sense, offers the most basic elemental scheme of all, namely atomism.⁹

a) Democritus: Atomic Theory

Democritus’ theory is not only brilliant, but also resoundingly familiar.

Democritus believes that the nature of the eternal things is small beings unlimited in multitude. He posits another place for these which is unlimited in magnitude, and he calls the place by these

names: the void, the nothing, and the unlimited ... He thinks that these beings are so small that they escape our perception. All sorts of shapes and all sorts of forms and differences in magnitude belong to them. From these, just as from elements, he generates and compounds visible and perceptible objects. (A37)

[Democritus] said that the principles are unlimited in multitude, and believed them to be atoms and indivisible ... These atoms, which are separate from one another in the unlimited void and differ in shape and size and position, and arrangement, move in the void, and when they overtake one another they collide, and some rebound in whatever direction they may happen to, but others become entangled in virtue of the relation of their shapes, sizes, positions, and arrangements, and stay together, and this is how compounds are produced. (A14)¹⁰

The Democritean universe is composed of atoms – miniscule, invisible, and indivisible bits of Being – moving through the void (or empty space). The Greek word *atomos*, composed of the alpha-privative and the word derived from the verb “to cut,” means “uncuttable.” Because they cannot be subdivided, they cannot fall apart and so they are imperishable. Furthermore, these atoms are qualitatively homogeneous (a notion we will explore shortly). They do, however, differ in quantitative senses such as shape, size, position, and arrangement, and they are in motion (and so would have velocity). As they are moving through the void some “collide” and become “entangled.” This is the way in which visible objects “come into being.” Again, this coming-into-being is not quite literal. Instead, it is, as Anaxagoras put it, a “mixing together.”

Because he endorses these views, Democritus is rather like Parmenides in being a “paradoxical” thinker, one who strictly separates *doxa* and Truth. Ordinary experience suggests that the book you are holding in your hand is a real object in and of itself. As a result, if someone asked you, “what is it you are holding?,” you would quickly answer, “a book.” (Always keep in mind how closely intertwined *doxa* is with ordinary language.) But according to Democritus, you would be wrong. What you hold in your hands is not really a book at all. Instead, it is a collection of atoms moving through the void that happened to clump together and will soon separate. To

reach this conclusion Democritus explicitly rejects the testimony of *doxa*. “There are two kinds of judgment,” he declares, “one legitimate and the other bastard. All the following belong to the bastard: sight, hearing, smell, taste, touch” (B11). Ordinary sight cannot reveal the atomic structure of the book you are now holding: the atoms are, after all, invisible. Instead, as the first citation above indicates, Democritus “posits” or hypothesizes or infers the existence of atoms. He concludes that only atoms and the void, neither of which can be empirically observed, are truly real by constructing a theory.

Unlike Parmenides’ account of Being, Democritus’ atomism is, at least in principle, empirically verifiable. Even if he rejects the testimony of ordinary “sight, hearing, etc.,” he would, for example, welcome the powerful observational tools used by scientists today. Democritus would have been delighted to learn that there are electron microscopes able to detect entities as seemingly elemental as molecules, or cloud-chambers which generate images of the tracks of fundamental particles. Nevertheless, even if theoretically compatible with a modern form of empiricism, Democritean atomism is still quite paradoxical. Consider the following, all-important statement:

By convention sweet; by convention, bitter; by convention, hot; by convention, cold; by convention, color; but in reality, atoms and void. (B125)

The terms Democritus uses here are critical. The Greek for “in reality” is a participle derived from “to be” (*einai*), and so could also be translated as “in Being.” Atoms REALLY ARE. They are bits of Being. By contrast, qualities such as sweet or cold are a matter of “convention.” The word here is *nomos*, and it can also be translated as “custom” or “law.” Each of these signifies some sort of human agreement. It is, for example, customary in our culture to shake hands upon being introduced to someone. This gesture has no intrinsic, natural, or permanent significance. It is strictly symbolic, and its meaning has been determined by the culture. In another culture, or at a different time, a different gesture, such as gently rubbing noses, might well perform the same function that shaking hands does for us today.

The preceding paragraph alludes to one of the great oppositions in the entire history of philosophy, namely that between

nomos and *phusis*, “convention” and “nature.” Nature is what is real all by itself. The fact that, for example, Mount Everest exists and is the tallest mountain in the world has nothing to do with human agreement. It got there all by itself. By contrast, the name of the geological entity standing close to the intersection of the meridian 87° E longitude and the parallel 28° N latitude, “Everest,” is a strictly human affair. The mountain was named by specific English-speaking human beings who decided and then agreed to recognize the achievement of Sir George Everest, who surveyed it in 1841.

Democritus does not use the word *phusis* in the citation above. Instead, his choice is “reality” or “Being.” But the point is the same. Atoms really are, regardless of what human beings say or think about them. By contrast, sweet and hot belong to human experience alone. Recall that atoms have no qualitative features whatsoever. They are neither sweet nor bitter, neither hot nor cold. They are imperceptible and have only the quantitative characteristics of size, shape, and position, etc. So, for example, my tongue is composed of, say, 936 rectangular atoms. These numerical features constitute its nature or reality. The honey in the jar is composed of 472 atoms which are, as Democritus says about the sweet, “round and good-sized” (A129). When the honey atoms interact with the tongue atoms there is an “entanglement” of some sort and the result is the sensation of sweetness (which reaches my brain by being communicated from the tongue by neurological atoms). But this sensation, which lies in the realm of *doxa*, provides no information about the honey itself. In reality, and like everything else, the honey is nothing but atoms moving through the void.

In this sense Democritus is a paradoxical thinker. If I ask you, “how does that honey you’re eating now taste?,” you might well say “it’s very sweet.” From the perspective of atomic reality your answer is meaningless. The truth is 472 “round and good-sized atoms” have bumped into 936 rectangular atoms and produced a certain atomic motion traveling through your nerves to your brain. “Sweet” tells us nothing about what is really happening or what exists. It is simply a name, an appearance which conceals the Truth about the honey.

Implicit in Democritus’ declaration “sweet, by convention ... in reality, atoms and void,” is not only the distinction between nature

(or Being) and convention, but also that between what later philosophers will call “primary and secondary qualities.” The former belong to objects in the world independently of any human cognizance of those objects. The roundness of honey atoms is an objective and quantitative fact and does not depend on human perception or observation. By contrast, the perception of sweetness is a consequence of the interaction of the object and the perceiving subject who tastes it. Sweetness is thus a secondary quality. The statement “the honey is sweet” is false about the honey itself even if the statement “the honey tastes sweet to me” is true.

One way to appreciate the force of this idea is to perform an experiment. Put a cube of sugar into your mouth for 10 minutes. Then have a taste of the honey. It will no longer seem quite as sweet. Next, put a lemon in your mouth for ten minutes before tasting the honey. It will seem extremely sweet. On the basis of experiments like these one can conclude that the honey is not sweet in itself. Instead, its sweetness depends on the one perceiving it. By contrast, regardless of how the honey tastes to you, or even whether you taste it at all, it will still be composed of 472 atoms.

As the above suggests, a decisive difference between primary and secondary qualities is that the former are expressible only in the language of mathematics. Recall Democritus’ assertion that atoms are qualitatively homogeneous; that is, they are “not different in kind,” but only in size, position, shape, etc. The only true statements to be made about them, and hence about reality itself, are those formulated in the language of mathematics. Secondary qualities, by contrast, require ordinary language (the medium of *doxa*) for their articulation. “Sweet,” “bitter,” “hot,” “cold” – Democritus’ examples – are all adjectives.

It is difficult to overstate the magnitude of Democritus’ discovery. Some 2,000 years later Galileo would reach similar conclusions.

I think, therefore, that these tastes, odors, colors, etc., so far as their objective existence is concerned, are nothing but mere names for something which resides exclusively in our sensitive body, so that if the perceiving creatures were removed, all of these qualities would be annihilated and abolished from existence. (Galileo 1960, p. 18)

By contrast, what is really real and does not depend on “perceiving creatures” are “material bodies continually resolving themselves into tiny particles,” precisely what Democritus calls “atoms.” What Galileo describes as “mere names” is what Democritus refers to when he says “by convention.” To declare that “the honey is sweet” is merely a conventional naming of a microscopic event which has nothing whatsoever to do with sweetness. If there were no tongue with which to taste the honey, there would still be honey, but it would not be sweet. It would just be 472 atoms.

David Hume, writing in the eighteenth century, believed that this distinction between primary and secondary qualities was fundamental to modern (post-1600) philosophy in general:

The fundamental principle of [modern] philosophy is the opinion concerning colors, sounds, tastes, smells, heat and cold; which it asserts to be nothing but impressions in the mind derived from the operation of external objects, and without any resemblance to the qualities of the objects. (Hume 1975, p. 226)

Even if Hume is correct in characterizing modern philosophy in this fashion, he neglected to note that the distinction between primary and secondary qualities was already present, however incipiently, in the ancient world in the form of Democritean atomism. As mentioned in the Introduction to this book, the views of the Presocratics, especially the elementalists, were far more “modern” than those of their successors Plato and Aristotle. Indeed, it is precisely this feature of Presocratic thought that, as we will see in some detail in chapter 4 below, Aristotle criticized and believed that he had defeated. It will be useful here to get ahead of ourselves a bit and preview a few of his criticisms of Democritus in order to gain a better grasp of atomism as well as the sorts of objections that might be brought to bear against it.

First: atomism, according to Aristotle, destroys what might be called the “ontological integrity” of individual objects. Things are no longer unified wholes with a being of their own. As Simplicius, one of Aristotle’s followers, put it, Democritus “does not make any thing out of them that is truly one” (A37). This becomes a particularly damning complaint when applied to living beings, for these above all else seem to have a very strong kind of identity. They can,

after all, maintain their organic unity through metabolic activity and can reproduce themselves. For Democritus, however, a rabbit is not really a singular being with its own ontological integrity. (The word “integrity,” by the way, comes from “integer,” a “whole number.”) Indeed, a rabbit is not, on the atomist account, really a rabbit at all. Instead, it is an entanglement of, say, 6,418 square atoms. But this is at complete variance with our ordinary experience of living beings, which in fact present themselves to us as unified and with a very powerful sense of ontological integrity. My pet rabbit had a name, Ginger, and what seemed to be a strong personality. At least according to my everyday experiences of her, she was not merely an entanglement of atoms which can only be explicated mathematically. She was a living being whose nature and value required ordinary language for their articulation. This strong sense of the ontological integrity of living beings is destroyed by Democritean atomism.

As we will see in chapter 4, according to Aristotle (but not Galileo or other modern thinkers) this implication of atomism counts as a damning indictment against Democritus. He is, to use a contemporary term, an “eliminativist,” one who eliminates everyday concepts in favor of materialist ones that can be explicated scientifically (or mathematically). For example, atomism eliminates all familiar psychological concepts. In Democritus’ system the notion of a mind or soul is replaced by atoms moving through the void. In a striking, even if primitive, prefigurement of contemporary neuroscience, he says the mind “consists of primary and indivisible bodies, and its power of producing movement is due to the smallness of its parts, and its shape; for ... the spherical [is] the most easily moved of all shapes; and this characteristic is shared by mind and fire” (*De Anima*, 405a7–13).¹¹ As we will see, both Aristotle and Plato will strongly object to replacing the mind or soul with a chunk of matter, even one as complex and dynamic as the human brain.

A second Aristotelian complaint against atomism is that “Democritus leaves aside purpose, but refers all things which nature employs to necessity” (A66). “Necessity” (*anangkê*) signifies that which cannot be otherwise than it is. If, to conjure up an imaginary example, a rectangular shaped atom collides with a round one, they cannot become entangled but they must bounce off each other. By contrast, if two triangular shaped atoms collide, they will have to stick together. The world of objects is, for Democritus, a

necessitated one. Atoms are perpetually in motion and their movements and entanglements strictly obey the laws of physics. Such a view eliminates all aspects of purposiveness or goal-directed activity.

Once again, from Aristotle's perspective the great limitation of atomism comes sharply into focus when it is applied to living beings. So, for example, he argues that human teeth have a purpose, namely to chew food. Democritus, by contrast, would claim that the teeth are composed of a bunch of atoms which, because of their random motions, just happened to clump together, and proved to be useful. For reasons to be elaborated at length in chapter 4, Aristotle argues that such "necessity" cannot possibly do justice to the orderliness and regularity of organic nature.

Another objection, which actually encapsulates the previous two, is this: the atomist doctrine places a wall between ordinary human experience and reality. As Democritus puts it, "a person must know that he is separated from reality" (B6). Reality as it is presented in *doxa* is composed of objects, especially living ones, which do have ontological integrity and whose parts often do exhibit purposiveness. Reality, at least as we ordinarily experience it and talk about it, looks this way to us. By contrast, Democritean reality is nothing but invisible, quantitatively determined atoms moving through the void and combining or separating according to the necessary laws of motion. Reality is, in sum, divorced from us. The only way to overcome this separation is by an act of thought, namely to hypothesize or construct a theory about the existence of atoms one cannot see. For Aristotle, such a procedure, such a thorough debasement of *doxa*, is philosophically unacceptable.

A final comment about Democritus: in addition to his atomic doctrine, he wrote a great deal about how one should lead one's life, or about what today we would call ethics. Indeed, "over four-fifths of his surviving *verbatim* fragments are concerned with ethics." Most of these reflect a concern "with our subjective well-being" (KRS 1983, p. 431), that is, with how human beings actually feel. For example, some of Democritus' writings recommend practical strategies for coping with grief and anger, and in general they aim to teach us how to achieve contentment. A representative statement is this: "Best for a person is to live his life being as cheerful and as little distressed as possible" (B189).

This fragment may well prefigure the thought of later ethicists like Epicurus (341–270) and, most famously, Lucretius (94–55), who were both atomists and hedonists: they identified pleasure as the highest good for human beings. Their reasoning – which perhaps can be read back into Democritus – was essentially this: nothing should distress a human being precisely because nothing really exists in its own right. Take, for example, the most distressful of all eventualities, namely death. For the “atomic-ethicist,” to fear death is a big mistake. After all, death, like all forms of Becoming, is not quite real. Yes, the body will decompose and its elements will separate. The elements themselves, however, which are the truest reality of all, do not die and so in this sense nothing really dies. Human beings become upset because they fear they will lose what they have – their family, friends, wealth, or finally their lives. But since nothing really exists on its own, nothing can really be lost, and so nothing should cause us to worry or fear. The atomic nature of reality is the great constant on which we may all rely, and understanding this is the key to a pleasurable existence.

The kind of hedonism Democritus may have had in mind (and which Lucretius certainly did have in mind) is hardly the familiar sort that recommends luxurious eating or drinking or sexual pleasure. In fact, Democritus urges us to stay away from just these sorts of pleasures: “All those who make their pleasure from the belly, exceeding the right time for food, drink, or sex, have short lived pleasures ... but many pains” (B235). The best form of pleasure is intellectual. When one thinks clearly about a world of purposeless atoms moving through the void one realizes it is pointless to get emotionally distraught over anything. The optimum psychological state, which arises when this realization is thoroughly integrated into one’s thinking, is what later Greek thinkers called *ataraxia*, “tranquility,” or more literally, the “absence of distress.” Because the greatest source of human unhappiness is anxiety or stress, and this can be eliminated through a proper understanding of reality, a pleasurable life is within our reach.

Aristotle would object to atomic-ethics. He is, in stark contrast to the elementalists, fundamentally wedded to *doxa*. Human beings typically fear death, and for Aristotle they have good reason to: it represents the end of life. And life, for Aristotle, has meaning, purpose, and integrity. Tranquility is therefore not equivalent to human happiness. What it is will be the subject of chapter 4.

According to some scholars, atomism is “in many ways the crown of Greek philosophical achievement before Plato” (KRS 1983, p. 433). It is a comprehensive doctrine and, as modern developments clearly suggest, one that could be adopted without embarrassment today. It combines Parmenides’ insights about Being with ordinary sense perception. It offers a comprehensive view of the world. Democritus, however, was neither the first, nor the only, elementalists of the fifth century. Next we turn to Empedocles. If Democritus prefigures Galileo, then Empedocles prefigures Darwin.

b) Empedocles: Evolution

Like Democritus, Empedocles (495–435) preserves the essential insights of Parmenides, but refuses to abide by his notion of the singularity of Being. Instead, he divides Being into elements, which in turn mix and separate and thereby generate the macroscopic objects of *doxa* comprising the realm of what appears as becoming. Much like Anaxagoras, Empedocles declares “There is coming to be of not a single one of all mortal things, nor is there any end of deadly death, but only mixture and separation of what is mixed” (B8).¹²

(*Warning:* Empedocles, like Parmenides, wrote in verse, which I do not indicate in my citations below. This is in keeping with what Aristotle says: “Homer and Empedocles have nothing in common except for their meter. Therefore, it is proper to call the one a ‘poet,’ and the other a ‘natural philosopher’ rather than a poet” [*Poetics*, 1447b17–20]. For an alternative view that makes poetry central to Empedocles’ project see Lombardo 1982 and Kingsley 2002. Also, new papyrus material containing some texts by Empedocles has recently been discovered. These will not be discussed here, for, as Inwood [2001, p. 78] concludes, “The impact of the papyrus materials on the interpretation of Empedocles’ poetic work ... is not as great as one might have expected” [Kingsley 2002 elaborates].)

Empedocles’ version of elements are what he calls the “four roots of all things” (B56), namely earth, air, water, and fire. In addition, there are two powers at work on these elements, which he names “Love” and “Strife” (B17), and which can be construed

as symbolic of attraction and repulsion. Equipped with these six entities, Empedocles constructs a sort of proto-chemistry. Objects “come into being” when the strong force of Love attracts the required number of elements, and they “perish” when Love gives way to Strife and the elements are repelled from each other and so go their separate ways. As in Democritus, there is no Becoming in the strict sense of the word: “From what is altogether not it is impossible to come to be, and it is inconceivable that what is perish” (B12). Or, as he also puts it about the roots, “at different times they come to be different things and yet are always and continuously the same” (B17).

Empedocles holds a rather obscure doctrine of cosmic history. At one stage, the strong force of Love was totally ascendant and as a result, “at this point all these things come together to be one single thing” (B35). With only Love at work, there was no differentiation; there were no things. At a subsequent point, Strife did intervene, and elements began to separate from the one glob. Empedocles seems to have had some sort of cyclical conception of history in mind: “I will tell a double story,” he says. “For at one time they grow to be only one out of many, but at another they grow apart to be many out of one” (B17). This may well suggest that Love and Strife take turns at the driver’s seat and so the cosmos oscillates back and forth between being one, undifferentiated mass, and being a collection of separate things. Again, what he means by this is quite obscure and will not be discussed further. (For discussions of these cycles see KRS 1983, pp. 289–94 and Inwood 2001, pp. 42–9.)

What is most important here is that Empedocles had some inkling of what today we would call the “evolution” of animal life and the theory of natural selection. Inwood cautiously makes this point: “Though the resemblance of Empedocles’ theories of animal generation to Darwinian evolution is very slender, they nevertheless represent for us the clearest and best-attested attempt in early Greek thought to give a rule-governed and nontheological account of the origin of animal species” (2001, p. 73).

As explained by Furth (1987, pp. 30–7), who largely follows Aristotle’s reading of his predecessor, Empedocles conceived of six distinct stages in the evolution of animal life.

- Stage 1: As mentioned above, before the emergence of the four elements, Love was totally dominant and so there was only an undifferentiated unity: “at one time all coming together into one by Love” (B17).
- Stage 2: Strife intervened and the elements separated: “they grew apart to be many out of one: fire and water and earth and the immense height of air, and deadly strife apart from them, equal in all directions and Love among them” (B17).
- Stage 3: Love then became operative on a local basis, and so elements were drawn together to form compounds. So, for example, “white bones came into being” from “Pleasant earth, two parts of bright Nestis [god of water] out of the eight, and four of Hephaestus [god of the forge, i.e. fire]” (B98). Furth translates this imagistic statement into a chemical formula. Bone can be represented as $E_2W_2A_0F_4$ (Furth 1987, p. 35). Two parts earth, two water, zero air, and four fire comprise a bone “molecule.” Such a “molecule” has an elemental structure and “comes into being” only when the right proportion of each element happens to be present.
- Stage 4: Bits of organic matters were mixed into miscellaneous animal parts. “By her [Love] many neckless faces sprouted, and arms were wandering naked, bereft of shoulders, and eyes were roaming alone, in need of foreheads” (B57).
- Stage 5: These parts in turn randomly combined to form various combinations. Some were quite strange. “Many came into being with faces and chests of both sides, man-faced ox-progeny, and some to the contrary rose up as ox-headed things with the form of men, compounded partly from men and partly from women, fitted with shadowy parts” (B61). Such beings were poorly adapted and did not survive. (See Aristotle’s *Physics* 198b29–32.)
- Stage 6: “In a very small fraction of cases, creatures were thus mixed together that happened to be both well adapted and reproductively viable” (Furth 1987, p. 39).

In this evolutionary process animal life emerged “from the bottom up.” Beginning with inorganic, elemental bits, organic compounds

were formed, and then large-scale parts, and finally living beings. Only a few of the latter managed to survive and then reproduce on a consistent basis.

Throughout this process chance plays a pivotal role. In describing how blood and flesh came to be, Empedocles says “earth came together by chance in about equal quantity to these” (B98). “When ... these things began to fall together, however they chanced to meet, and many others besides them arose continuously” (B59).

The Empedoclean story, sketchy as it is, is now complete. It is a thoroughly materialist account in which the elements are the fundamental level of reality. Evolution takes place because of random mixtures and, ultimately, survival is the sole determinant of what sort of animal life exists.

As he does in his criticism of Democritus, Aristotle brings two basic objections to bear against Empedoclean evolution. First, it deprives animals, which for Aristotle are the paradigmatic instances of beings or what he calls “substances,” of their ontological integrity. According to the evolutionary story, a rabbit is a chance conglomeration of organic chunks of matters that happened to be able to survive and reproduce. There is nothing qualitatively unique about a rabbit to differentiate it essentially from a turtle. Their differences would be captured instead by the sort of chemical formula used to articulate the molecular structure of bone. Furthermore, because there is continual motion of the elements, because Love and Strife oscillate cyclically, and chance is forever at play, no given animal species is genuinely stable or permanent. Rabbits may well evolve into a different sort of animal in the future.

Aristotle’s second objection is that there is no purposiveness in the Empedoclean evolutionary scheme. Animals, just like all other beings in the universe, are comprised of random conglomerations of elements, and that is all. By contrast, for Aristotle, as we will see in chapter 4, biological beings have a level of organization that requires them to be understood precisely in terms of their purposes. The human teeth, for example, are for the sake of chewing food. To explain the teeth in a formula such as $E_2W_2A_0F_4$ will not suffice. Teeth are a far too regular and predictable part of the human animal to have been caused by chance.

To repeat again a point made in the Introduction: of all the Presocratics, the fifth-century elementalists Democritus and Empedocles. are most modern in their basic conceptual framework. Thus when Aristotle criticizes them a century later, he will actually be criticizing doctrines as current and familiar to us as atomism and evolution. While the contemporary versions of these theories are of course vastly more sophisticated than their ancient predecessors, the basic ideas were nonetheless latent in antiquity, and so were on the table when Plato and Aristotle entered the scene in the fourth century.

c) Anaxagoras

Like Democritus and Empedocles, Anaxagoras (500–427) is a complex thinker whose work merits an analysis far more detailed than what this book provides. As has been the case throughout this chapter, only those portions of his text that help position him in the dialectical development of ancient Greek philosophy will be discussed. In this regard, what is critical in selecting passages from Anaxagoras' writings is the fact that Plato was both influenced by and critical of his ideas.

As a good elementalist, Anaxagoras conceives of bits of Being, which he calls "seeds." "It is necessary to believe," he states, "that there are many things of all kinds, and seeds of all things, in everything that has been compounded" (B4).¹³ There is, unfortunately, much dispute among scholars about what exactly this means. (See KRS 1983, pp. 368–70.) Nonetheless, even without knowing exactly what these seeds are, it is still possible to suggest how they figure into Anaxagoras' scheme. Simply put, they play a role similar to that of Empedocles' "roots" and Democritus' "atoms." They are the unchanging elements whose mixture and separation cause the appearance and disappearance of macroscopic objects.

Somewhat like Empedocles, Anaxagoras has some sort of notion of cosmic development. In the beginning, "all things were together" (B1) and there was no differentiation. Then there was separation and the world as we know it (as composed of distinct objects) began to come into being. Anaxagoras' bold innovation was to assign the cause of this separation to what he called "Mind."

And when Mind began to cause motion, out of everything that was moved there came to be setting apart, and to the extent that Mind caused motion, there was that much separating. While the things being moved were separating, the rotation caused much more separating. (B13)

And Mind ruled the entire rotation, so that it rotated at the beginning. (B12)

Again, it is quite unclear what this “rotation” was and hence exactly what these statements actually mean. The key point here is only that Anaxagoras claims Mind is ultimately responsible for the emergence of distinct macroscopic objects. As such, it performs much the same function as Love and Strife did for Empedocles. “In place of Empedocles’ Love and Strife Anaxagoras substitutes the single intellectual motive force of Mind” (KRS 1983, p. 364).

Anaxagoras’ description of Mind is striking (and to some extent reminiscent of Xenophanes’ description of God). It is assigned the role of first cause of all things, but at the same time it is not itself one of those things. As he puts it, “All else has a share of everything, but Mind is unlimited and self-ruled and has been mixed with no other thing, but alone itself by itself it is” (B12). This last phrase, “itself by itself,” is especially significant and will prove to be influential in the development of the Greek philosophical vocabulary.¹⁴ It is composed of two different types of pronouns. The first “itself” is intensive: it modifies “Mind.” The second is reflexive: it is the object of the preposition “by,” and forms a prepositional phrase that modifies (and so reflects back on) the first “itself.”

The phrase “itself by itself” attributes to Mind ontological independence. Unlike everything else, it is capable of being on its own. For reasons to be discussed in detail in chapter 3, this description is appealing to Plato. He was impressed that Anaxagoras, somewhat like Parmenides (whom Plato also admired), seemed to have had a notion of a nonmaterial being (Mind) whose ontological status was superior to, because responsible for, ordinary material beings. As a result, Anaxagoras was by his lights the most promising of the fifth-century elementalists. Unlike Democritus or Empedocles, he did not appear to be a strict materialist. Ultimately, as we will see, Plato became disenchanted with Anaxagoras, for Mind was not the

thoroughly nonmaterial substance for which he had hoped, and the process by which Mind initiated the separation of things was actually more mechanical than intelligent. Nevertheless, because he seemed to intuit the possibility of an intelligent force in the universe, to which he attributed ontological independence, Anaxagoras helped to push Plato into developing his own ideas.

To conclude this chapter: the fifth-century elementalists are the culmination of the period of Presocratic philosophy that began in 585 with Thales' identification of water as the *arché*. They were astonishingly prescient thinkers whose ideas prefigured some of the most important conceptual developments of the modern age, especially atomic physics and evolutionary biology. While what remains of their writings is fragmentary, and so none of them have attained the stature of Plato or Aristotle, their importance in the history of Greek philosophy is considerable. They set the stage for the emergence of the two giants of the fourth century, and because their ideas contain the seeds which later sprouted into modernity, when Plato and Aristotle respond to the Presocratics in general, and to the elementalists in particular, they are also responding to us.

Notes

- 1 Kirk, Raven, & Schofield 1983 is a basic reference text for the study of Presocratic philosophy, and will be cited throughout this chapter.
- 2 It is safer to speak of the "Homeric poems" rather than of "Homer," for about the latter we know next to nothing.
- 3 Translation is from Evelyn-White 1977.
- 4 The more common translation of *ousia* is "substance."
- 5 All translations of Pythagoras are taken from Cohen et al. 2000, and will be indicated only by "Cohen" and a page number from this book.
- 6 I have consulted Cohen 2000 on all of my translations, and have also benefited from Wright 1985, which I also consulted for translations of Parmenides.
- 7 I leave out a phrase from this fragment, namely, "playing checkers."
- 8 The Greek text is KRS 1983, and the translations offered are guided by theirs. I use their abbreviation, "Fr.," to indicate fragment numbers.
- 9 I leave out Leucippus, the putative founder of atomism. SEE KRS 1983, pp. 402–3 for a brief discussion.

- 10 Fragment A37 is from Diels, and is my own translation. A14 is from Cohen, p. 67. All subsequent translations of Democritus will be from this book, but will indicated only by the Diels number.
- 11 Translation is from Hett 1957.
- 12 With only slight exceptions, my translation comes from Cohen.
- 13 Translation is my own.
- 14 A similar phrase is used by Parmenides. Being, he says, is “unchanging” (8.26) and “remains the same in the same and by itself” (8.29).