1
PRESOCRATIC THEMES
Being, not-being and mind

David Sedley

Introduction

European philosophy started life as speculative science. The remarkable pantheon of Greek thinkers classed as "Presocratic" on the ground that they are philosophically antecedent to Socrates (BC 469–399) treated the world itself as their primary *explanandum*. But deep questions concerning the world's physical structure turned out to be inseparable from still deeper ones about what it is to be a discrete thing, what being entails, and whether there is any parallel role for its negative counterpart, not-being. In what follows, it should be borne in mind that, although all the thinkers we will be considering wrote one or more books, none of those books survives intact. Their thought must be reconstructed from fragments (purportedly verbatim quotations) and other testimonies. This makes an already risky historical exercise even more hazardous. But the ultimate sources of our own thinking are a topic we cannot lightly set aside.

Heraclitus

> Teacher of most is Hesiod: him they recognize as knowing most. And he did not understand day and night. For that is one thing. (Heraclitus, in Diels and Kranz 1952: B57)

If we can succeed in deciphering this characteristically cryptic utterance of Heraclitus (c. BC 500), and work out what mistake he was trying to expose, we will be well on our way to the heart of Presocratic metaphysics. That will require starting even earlier, with Hesiod, the target of Heraclitus' complaint.

The poet Hesiod (c. BC 700) was, even more than his approximate contemporary Homer, a canonical author for the Greek philosophers, who repeatedly felt obliged to come to terms with him when formulating their own ideas. His poem the *Theogony* had become the classic Greek creation myth. It takes the form of a genealogical cosmogony, charting the emergence of the world in the guise of a growing family of divinities: first Chaos, who was superseded by Earth, followed by a series of further

cosmic entities, including Night, herself in turn the mother of Day. Day shares the house of her mother Night, because, conveniently, both are never in at the same time: they meet only on the doorstep, as the one arrives home and the other sets out on her round (*Theogony*, 746–57).

What in Heraclitus' eyes was Hesiod's error? It seems to have lain in the latter's naïve assumption that the two names, "day" and "night," in virtue of the very fact that they are two, must pick out two discrete items. His casting the two of them as co-resident goddesses is no more than a traditionally mythological showcasing of that naïve assumption. The same metaphysics of personification runs right through Hesiod's worldview, which includes literally hundreds of minor deities, as diverse as Love, Lightning, Hunger and Victory. That the Hesiodic way of carving reality up into discrete components is a fundamental misunderstanding is in a way Heraclitus' pivotal insight (see Mourelatos [1973], who calls it "the Naïve Metaphysics of Things"), and the driving force behind his radical reanalysis of reality. Even Heraclitus' most significant philosophical forerunner Anaximander (early to mid sixth century BC) had maintained the same primitive assumption of discrete thinghood, apparently speaking of such opposites as hot and cold, and wet and dry, as pairs of antithetical forces whose members, during the cycle of seasons, advance or retreat in the face of each other. Heraclitus is implicitly setting Anaximander right when he puts it this way: "Cold things warm, hot cools, moist parches, dry dampens" (Diels and Kranz 1952: B126).

Both in the case of Day and Night, and in that of pairs like hot and cold, it is easy enough to see why Heraclitus objects to his predecessors' simplistic assumption: they have been misled by the structure of language into assuming a one-to-one correlation of distinct words and distinct things. Yet on closer inspection language itself challenges the distinction between these items. For in the opening quotation Heraclitus' names for Day and Night are, respectively, *Hēmera* and *Euphronē*, both of which can mean "the kindly one"; and it is entirely characteristic of Heraclitus to regard such linguistic patterns as metaphysically revealing. (This particular example, curiously unremarked in the literature on Heraclitus, is owed to Hayden Pelliccia [pers. commun.].) In a comparable passage (Diels and Kranz 1952: B48), challenging the familiar duality of life and death, Heraclitus leans on the double meaning of *bios*, which differently accented can mean "life" and "bow": "The name of the bow is life, but its work is death." Heraclitean metaphysics flows from a desire to make us not so much abandon the way we familiarly talk as understand its meaning all the way down. The very discourse (*logos*) that Heraclitus constructs for us is, in addition to being his own, one that he insists has all along been publicly available for anyone with the wit to fathom its meaning (Diels and Kranz 1952: B1).

The denial of Day and Night's duality makes sense as a reaction to Hesiod's primitive ontology, itself no doubt emblematic of pre-philosophical ontology more generally. The harder question to answer is how Heraclitus would defend his own contention that, in the case of Day and Night, precisely *one* thing is in the frame. We will do best to return to this after broader consideration of the principle at stake.

Some of Heraclitus' other illustrations of the unity of opposites, as his most celebrated motif has come to be known, are helpfully transparent. In particular, "The road up and

down: one and the same" (Diels and Kranz 1952: B60) is a saying which not only exemplifies the unity principle but also offers a possible model for interpreting the more puzzling cases. If I call "the road up" what you call "the road down," both of us are missing its essential unity because we arbitrarily privilege our own perspectives on it. Unity, in Heraclitus' view, transcends the duality as soon as one eliminates perspective and adopts a neutral god's-eye vantage point.

In the case of Day and Night, however, the misleadingness of their separation from each other seems to be established by partly different considerations. The sun is a curiously minor player in Heraclitus' cosmology – a bowl filled with fire, restricted by a higher power to possessing a diameter of one foot, and replaced every day by a new sun. And yet "if there were no sun," Heraclitus remarks, "it would be night" (Diels and Kranz 1952: B99). That is, the sky is sometimes illuminated by this transient bowl of fire, sometimes not. To make that fact the basis for postulating two discrete cosmic entities is to privilege a superficial variation over the underlying unity.

The ways in which human discourse generates polarities are then many and various. Although the underlying unity of the continuum is the deep truth that Heraclitus is most at pains to uncover, and this leads him to deplore the polarizing tendencies of common human perspectives, humans are not the victims of simple error. The unity, or "harmony," is precisely a harmony of opposites, which in turn makes the existence of opposites a necessary precondition of true unity. "They do not understand how it is by being at variance with itself that it is in agreement with itself: a back-turning harmony, as of a bow and a lyre" (Diels and Kranz 1952: B51).

Parmenides

> From this point on, learn the opinions of mortals, listening to the deceitful ordering of my words. For they have decided to name two forms, one of which they should not, and that is where their error lies. (Parmenides, in Diels and Kranz 1952: B8, lines 51–4)

We have now moved on a generation, to Parmenides, the most revolutionary thinker of the entire Presocratic era, and inaugurator of the "Eleatic" school, so named after his city Elea in southern Italy. His poetic discourse, placed in the mouth of a goddess, contrasts the duality implicit in ordinary human beliefs with the strong unity thesis that Parmenides himself advocates. The way in which "mortals" are described in the above-quoted lines as polarizing reality into paired opposites has a strikingly Heraclitean ring. As for Parmenides' monism, his thesis that what-is is a unity, this was not in itself new. Heraclitus had not just defended the essential unity of opposed pairs of opposites, but had himself progressed from there to a global unity thesis: "*All* things are one" (Diels and Kranz 1952: B50), that underlying unity being identifiable with god: "The god: day and night, winter and summer, war and peace, satiety and hunger. But he varies, just as fire, when mixed with different spices, is named after the savour of each" (Diels and Kranz 1952: B67). Even before him Thales, Anaximander and Anaximenes, the celebrated trio of Milesian philosophers, had espoused what is widely interpreted as

material monism, seeking to trace the world and all its phenomena back to some single primary stuff. In short, the ultimate unity of being was not in itself news. But Parmenides' monism goes far beyond that of his predecessors. It is *eliminative* monism: the single entity which it postulates does not for him, as it had done for Heraclitus, underlie, and thus in a way account for, the more superficial plurality of ordinary experience, but at a stroke eliminates that plurality. As traditionally understood (although there has been a wide spectrum of interpretations) Parmenides really does insist that what-is is a literal unity, entirely undifferentiated across time and space alike.

How could a worldview so contrary to experience and common sense be defended? His methodology is to set aside empirical data such as had been used to favour one physical analysis of the world over another, and instead to examine the concept of being itself. If the logic of being turns out already to place constraints on what could possibly serve as the subject of the verb "be," we had better ensure that those constraints are in place before we proceed to ask what, as a matter of fact, there "is."

The key constraint that emerges is that the verb "be" is un-negatable. The expression "… is not," that is, could never have a subject, because to supply a sentence with a subject one must either *name* or *think of* the item in question, and both options are ruled out when it comes to naming or thinking something which *is not*. What-is-not is unavailable for referring to, so cannot be successfully named; nor can you succeed in thinking of it, given that you could not do so without knowing what it is, and that you could not know what something is when it is not anything at all. This last expression, "anything *at all*," conveys a key assumption at work in Parmenides' argument. Some, he foresees, will try to evade his trap by saying that not-being is normally not absolute, but relative to some chosen complement: thus what *is not*, e.g. is not wooden or is not in Cambridge, also *is*, e.g. is plastic or is in Oxford. Parmenides' refusal to allow qualified or partial non-being, the most contentious of all his argumentative moves, is summed up in his words "The choice on this matter lies in the following: it is, or it is not" (Diels and Kranz 1952: B8, lines 15–16), which we may choose to think of as an early predecessor of the law of the excluded middle.

Parmenides has been suspected here of confusing different senses of "be," in particular its complete use, equivalent to "exist," and its incomplete use as the copula. More recent work on the Greek verb "be" (see especially Brown 1994), however, has cast doubt on the accusation. In Greek, to be is regularly to *be something*. Most of the time the something is specified: the bottle is a plastic object, is in my bag, etc. Occasionally it is not: the bottle simply "is." But the latter use, which to Anglophone readers may look like a switch to the existential sense, is in ancient Greek usage still a way of saying that the bottle *is something*, albeit without this time specifying what. Parmenides is not equivocating between two senses of "be," the one incomplete and the other complete, but is advising that the only correct way to use this univocal verb is without restricting the complement, since to do so would be implicitly to import some not-being (if the bottle is plastic, for example, it is not glass).

If we accept that not-being is an incoherent notion, we will endorse Parmenides' conclusion that whatever turns out to be the proper subject of "… is" must in no context or relation admit of any predicate that would entail its also at any time *not being*

something. But *any* variation in being across time or space would imply some phase or component of the illicit not-being. If something comes-to-be, it previously *was not*; if something has distinct parts, each part *is not* what the others are; if something moves, there must be a place for it to move into, where it *is not* already. Therefore being must be altogether invariable, and all apparent change and qualitative difference an illusion. Most surprisingly of all (many scholars doubt it, but the text is particularly clear on the point), being must be spherical, since any asymmetric shape would import a component of not-being to explain its projecting less in this direction than in that. Since the world itself was already understood by the Greeks as mathematically spherical (because bounded by a spherical heaven), we can if we wish read Parmenides' project as a re-description of that very same sphere, in such a way as to eliminate all the apparent variations from it.

Parmenides' poem describes his journey in a chariot to the House of Night, at whose gates the paths of Day and Night meet. It is from this vantage point, where regular temporal distinctions collapse, that the unnamed goddess proceeds to divulge to him the true unvarying nature of reality. The artificial separation of Day from Night had been the focus of Heraclitus' complaint against Hesiod's multiplication of entities. Parmenides' symbolic withdrawal to the place where their paths merge can be seen as his continuation of that same resistance to Hesiodic ontology, with his radical monism being its ultimate culmination.

After Parmenides

The interpretation of Parmenides is, even by the standards of Presocratic philosophy, fraught with controversy. But there are plentiful signs that in subsequent generations he was understood as an eliminative monist, and that the various attempts to rehabilitate plurality were framed as replies to his challenge. Some of the evidence is found in thinkers who will otherwise not feature in this chapter, notably Empedocles, who interpreted the world as a cyclical alternation between an ideal Parmenidean One and a cosmic Many, and Parmenides' follower Zeno of Elea, who argued in reply to the likes of Empedocles that the pluralist premise "There are many things" embodies a whole series of self-contradictions.

There is, however, one oddity which casts some doubt on the nature and degree of Parmenides' influence. On the one hand, everyone in the next generation agreed with Parmenides that strictly speaking nothing comes into being or perishes, and their unanimous emphasis on this tenet reads like their concession of a partial victory to him. On the other hand, there is no evidence that any of them took seriously his specific ground for the tenet, namely that prior to its putative coming-to-be and after its putative ceasing-to-be the entity in question would *not be*, and that not-being is an illicit notion. Instead, they seem to have relied on a much older and more intuitive premise, that nothing can come to be *out of nothing* or perish *into nothing*, in the light of which change as such may prove unobjectionable, so long as it is reanalysed as the endless redistribution of permanent stuffs. That principle had been tacitly at work even in much earlier physical theorists. What Parmenides seems to have prompted is a more explicit recog-

nition of its importance, resulting in its frequent introduction as an explicit premise. Anaxagoras (on whom more below) even went so far as to outlaw from his philosophical writing the verbs "come-to-be" (or "become") and "perish," rejected as representing a popular misunderstanding of the nature of change, and to replace them with verbs signifying mixture and separation (Diels and Kranz 1952: B17).

Melissus

One reason for this switch from Parmenides' idiosyncratic argument against change to the intuitive premise outlawing absolute generation and annihilation may lie in the work of Melissus, although it remains a matter of dispute whether he wrote his book, *On Nature or on What-Is*, early enough to have influenced our other protagonists (the only recorded date in his life is BC 440, when he memorably led his island, Samos, to victory in a naval engagement with the Athenians). Melissus presented a revised version of Parmenides' monism as, in effect, a revolutionary physics, defending the solitary existence of a single infinite entity which he calls "the One," and using the kind of premises and arguments that were typical of cosmological writing. Because his work is primarily physics and not metaphysics, he does not earn more than a walk-on part in this chapter. But we should note that his relatively clear arguments came to be more widely echoed, and therefore probably more directly influential, than those of Parmenides. The intuitive and widely accepted "Nothing could ever come to be out of nothing" (Diels and Kranz 1952: B1) was the very first premise in his chain of arguments, from which all his conclusions ultimately stemmed.

Anaxagoras

The great physicist Anaxagoras, who wrote in the first half of the fifth century BC, can be placed in the direct aftermath of Parmenides. It is not Anaxagoras' physics as such that will concern us here, but his singular way of escaping Parmenides' trap. Parmenides' monism is founded on the constraints imposed by rational thought, yet so strictly monistic is it that it can allow no distinct role for thought itself, or for the thinking subject. His line "For it is the same thing to think and to be" (Diels and Kranz 1952: B3) has been interpreted in various ways, but the likeliest meaning remains that what is thinks and what thinks is. That is, there can be no distinction between the thinking subject and the object thought. To permit any such distinction would be to abandon monism for dualism. And that vital move to dualism is to be credited not to Parmenides but to Anaxagoras, who has the historical distinction of being the very first dualist of mind and matter. It is a natural guess that this dualism originated as his chosen way of cutting himself free from Parmenidean monism.

The default assumption had always been top–down: that matter has certain attributes all the way down, and that these include vital properties like life and intelligence. Whatever the basic stuff of the universe may be, it is inherently and irreducibly alive, and in fact probably divine. Since Hesiod had treated the world itself as a collection of divinities (Heaven, Earth, etc.), it is no surprise that his successors should, in the course

of scientific rationalization, have left in place the explanatorily helpful implication that the major stuffs constituting the world are inherently alive. This hylozoism leaves it unproblematic to explain nature's inclusion of living and even intelligent beings. It raises only the relatively minor problem of explaining why, given that matter is irreducibly alive, some things appear *not* to be alive. Thales (Diels and Kranz 1952: A22) had explicitly maintained that in reality everything is animate ("All things are full of gods") – even stones, regarding which he pointed to the motive powers of the lodestone or natural magnet. Presumably in some things, e.g. other stones, the vital powers were still present but too muted to show. This same hylozoist assumption accounts for Parmenides' lack of concern to separate reality from the mind that conceives it, and for remarks made by Melissus in which he betrays his un-argued assumption that the One is a living being (Diels and Kranz 1952: B7, lines 4–6).

Against this background, Anaxagoras' radical dualism is a remarkable break with tradition. The universe, according to his treatise, has two major constituents. First there is a single material blend of all ingredients, in which "there is a portion of everything in everything." Second, and entirely unmixed with the first item, there is *nous*, translatable as "mind" or "intelligence." Why mind is unmixed is explained as follows (Diels and Kranz 1952: B12):

> The other things share a portion of each, but mind is something infinite and autonomous, and is mixed with no thing, but it alone is by itself. For if it were not by itself, but were mixed with something else, it would share in all things, if it were mixed with any of them – for in each thing a portion of each is present, as I have said earlier – and the things mixed with it would prevent it from controlling any thing in such a way as it does in being alone by itself.

The impression may be given here of mind's having the transcendent status of a detached divinity. But although for Anaxagoras a great extra-cosmic mind does sometimes take on the role of a creator divinity, he also speaks of portions of mind as being present *in* living things, and there should be no doubt that he is talking about mind as we know and ourselves possess it.

Rather, what Anaxagoras means by making mind unmixed seems to be as follows. The mixed ingredients either are, or (on a more widely accepted interpretation) include, a full set of pairs of opposite properties: hot and cold, wet and dry, bright and dark, heavy and light, etc. The omnipresence of these opposites in the mixture, albeit in varying proportions, is what guarantees that every physical object has some temperature, some weight, etc. Now if mind were "mixed" with the other things, it too would have some temperature, some weight, and so on. And if that were the case, it would be subject to control by physical forces, for example being heated or cooled, dried or dampened, by the prevailing weather conditions. By remaining unmixed, mind is invulnerable to physical control, and is instead left free to exercise its natural control *over* matter.

Thus what mind's being "unmixed" amounts to is its being *free of physical properties*. Its power over matter depends on it itself being non-physical. If that is what Anaxagoras is getting at, it is a breakthrough of sorts. No other philosopher before Plato fully

succeeded in distinguishing the incorporeal from the corporeal (see Renehan 1980). Anaxagoras does not go all the way either, since (elsewhere, in Diels and Kranz 1952: B12) he speaks of mind as if it were a very special *stuff*: it is the "finest and purest of all things," and occurs in larger and smaller quantities. Nevertheless, his declaring it unmixed is as close as anyone came in the Presocratic era to making mind something non-physical, and that move lies right at the heart of the dualism of mind and matter with which he counters Parmenidean monism. If mind can be shown to be sufficiently distinct from the rest of being, and powerful enough to exert control over it, it can rescue us from a static and undifferentiated Eleatic monism and account for the world as we experience it.

The atomists

The suggestion above has been that Anaxagoras, seeking an escape route from Parmenides' One, found it in the separateness of mind, thus becoming the first mind–body dualist. A competing ontological duality, consisting of "limiters" and "unlimiteds," is credited to the Pythagorean Philolaus in the late fifth century BC, but there is no space to discuss it here. A better-understood dualism contemporary with Philolaus is that of the atomists – Leucippus, about whom we know little, and his successor Democritus, a voluminous writer of great power and originality. Once again a Parmenidean inspiration can be discerned behind their dualism.

Parmenides' argument, as we have seen, turned on the incoherence of not-being. By outlawing not-being from his ontology, he rendered coming-to-be and perishing inexplicable. The atomists, adopting a premise that we have seen to be typical of the entire era, accept that absolute coming-to-be and perishing are impossible and must be replaced by mere redistribution of eternal elements. But not only are their reasons for respecting this principle of conservation not the ones urged by Parmenides, their theory of elements goes so far as to administer a direct rebuff to Parmenides' veto on not-being.

In Parmenides, one of the guises of the rejected not-being had been as empty space, without which movement becomes impossible. This equivalence between not-being and void is anything but clear in Parmenides' verses, but is brought to the fore by an argument of Melissus' (Diels and Kranz 1952: B7, lines 7–10), according to which (a) there is no motion without void; and (b) void, being nothing, does not exist. What our evidence puts beyond doubt is that the atomists stood that Eleatic argument on its head by asserting a symmetrical dualism of being and not-being. Being is equated with body (or "the full"), and is argued to come in indivisible chunks called "atoms" ("indivisibles"); not-being is equated with void or vacuum (or "the empty"), which provides the intervals separating atoms. Both atoms and void equally exist, because "being no more is than not-being is." In saying this they vindicate the taboo term "not-being," insisting, *contra* Parmenides, that it designates something real. They also, for good measure, allow it the deflationary label "nothing": as Democritus put it with a touch of linguistic inventiveness, "Thing [*den*] no more is than nothing [*mēden*] is" (Diels and Kranz 1952: B156).

How they defended their great metaphysical paradox, that "not-being is," is nowhere recorded. Indeed, if void is assumed to be empty space, and empty space in turn equated with nothing and with not-being, there is an obvious danger that its being will thereby be being negated rather than asserted. For this reason there is some attraction (see Sedley 1982) in identifying the atomists' "void," not with empty space itself, but with the portion of emptiness that occupies this or that space. For if the *occupant* of a space is called nothing and not-being, that seems a safer way of asserting that the space *is* empty, and hence that void exists. Moreover, if void is a space-occupier in this way, that seems as good a ground as any for asserting its existence.

To end, it is important to note certain further metaphysical consequences of atomism. For in this system we meet the very first reductionist ontology. Atoms and void, which are the sole constituents of the universe and its occupants, have only ineliminable physical properties like volume and shape. Colour, temperature, flavour, etc., are not part of the core reality but observer-dependent epiphenomena, generated when atomic complexes interact with the sense organs. In Democritus' famous slogan, "By convention [*nomōi*] sweet, by convention bitter, by convention hot, by convention cold, by convention colour; in reality [*eteēi*] atoms and void" (Diels and Kranz 1952: B9).

This bottom–up treatment of sensible properties applies, *mutatis mutandis*, to mental properties too. We saw earlier how an originally monistic psychology, in which mind was assumed to be as inseparable an aspect of matter as density and temperature are, was radically refashioned by Anaxagoras into a dualism of mind and matter. Atomism reverts to monism, but this time of a strictly physicalistic stamp. For Democritus the soul (*psychē*) is an atomic structure, whose distinctively mental properties are not part of the underlying atomic reality but epiphenomenal accretions.

Of all the metaphysical ideas generated in the Presocratic era, this brand of bottom-up materialism is not only chronologically the last, but also, appropriately, the one that can most directly engage twenty-first-century metaphysical concerns.

One or two?

Recall once more Parmenides' criticism of popular ontology: "For they have decided to name two forms, one of which they should not, and that is where their error lies." If this means that popular ontology rests on a counting error – two instead of one – it captures a surprisingly large part of the metaphysical agenda of the Presocratic era. For the ancient Greeks (and for none more than for Aristotle, the founder of metaphysics as a distinct discipline) ontology was indeed a counting game. Metaphysical speculation began life in Heraclitus' critical reflection on a naïve, pre-philosophical ontology which had tended to bifurcate unities into dualities. Parmenides' continuation of his reunification project culminated in a monism so extreme that it made the world itself threaten to collapse into illusion. And the subsequent rehabilitation of a pluralist ontology in several cases took the form of a search for the explanatory duality – matter and mind? being and not-being? – best equipped to rise from the ashes of Parmenidean monism.

References

Brown, Lesley (1994) "The Verb 'To Be' in Greek Philosophy: Some Remarks," in S. Everson (ed.), *Language*, Cambridge: Cambridge University Press, pp. 212–36.

Diels, H., revised by Kranz, W. (1952) *Die Fragmente der Vorsokratiker*, revised by W. Kranz (and later edns), Berlin.

Mourelatos, A. P. D. (1973) "Heraclitus, Parmenides, and the Naïve Metaphysics of Things," in E. N. Lee, A. P. D. Mourelatos, and R. Rorty (eds), *Exegesis and Argument*, Assen: Van Gorcum, pp. 16–48.

Renehan, Robert (1980) "On the Greek Origins of the Concepts Incorporeality and Immateriality," *Greek, Roman and Byzantine Studies* 21: 105–38.

Sedley, David (1982) "Two Conceptions of Vacuum," *Phronesis* 27: 175–93.

Further reading

Two user-friendly introductions to Presocratic philosophy as a whole are Catherine Osborne, *Presocratic Philosophy: A Very Short Introduction* (Oxford: Oxford University Press, 2004); and James Warren, *Presocratics* (Trowbridge, UK: Acumen, 2007). Three navigable sourcebooks are G. S. Kirk, J. E. Raven, and M. Schofield, *The Presocratic Philosophers*, 2nd edn (Cambridge: Cambridge University Press, 1983), with Greek texts, translations and commentary; Richard D. McKirahan, *Philosophy before Socrates* (Indianapolis; Cambridge: Hackett, 1994), with translations and commentary; and Robin Waterfield, *The First Philosophers: The Presocratics and the Sophists* (Oxford: Oxford University Press, 2000), with translations and commentary. Fuller discussion of individual philosophers will be found in Jonathan Barnes, *The Presocratic Philosophers* (London: Routledge, 1979), with philosophically the best available comprehensive discussion of the Presocratics; Daniel Graham, *Explaining the Cosmos: The Ionian Tradition in Scientific Philosophy* (Princeton, NJ: Princeton University Press, 2006), including important reservations about "monism"; and A. A. Long (ed.), *The Cambridge Companion to Early Greek Philosophy* (Cambridge: Cambridge University Press, 1999). For the significance of individual philosophers, see further C. H. Kahn, *The Art and Thought of Heraclitus* (Cambridge: Cambridge University Press, 1979); and Patricia Curd, *The Legacy of Parmenides: Eleatic Monism and Later Presocratic Thought* (Princeton, NJ: Princeton University Press, 1997), an innovative study, frequently differing from the above account.