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Parmenides and After: Unity and Plurality[1]

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The early Greek philosophers, usually called the pre-Socratics (because they were not influenced by Socrates) were above all moved by a desire to understand the world around them. They developed theories of the world that sought to discover its first principles (its fundamental building blocks), and to show how knowledge of these principles is possible. In the history of this period, Parmenides occupies a special place, for it was he who first inquired into the nature of explanation, and argued for criteria that must be satisfied by any adequate theory of what there is and our knowledge of it. Before Parmenides, the early Greek thinkers had proposed several accounts of the world, but had paid little attention to the nature of explanation or criteria for an appropriate object of knowledge. After Parmenides, the pre-Socratics strove to work within the limits set by his arguments.

A helpful way to approach the question of Parmenides' importance for Greek philosophy is to examine questions of unity and plurality in pre-Socratic thought, seeing how these questions dovetail with those about the possibility of genuine knowledge and its object.[2] In this chapter, I shall argue that Parmenides' criticisms of his predecessors rest on the principle that what can be genuinely known must be a unity of a particular sort, which I call a predicational unity. On this view, anything that genuinely is (that truly can be said to be), and so can be known, must be of a single, wholly unified kind. Parmenides drew conclusions from this that later philosophers took very seriously. One consequence is that what is genuinely real cannot come to be, pass away, or alter, thus posing the problems of change and knowledge: How can we account for the appearance of change that we see in the world around us? And how can we have knowledge of such a changing world? An advantage of viewing Parmenides in this way is that it makes sense of the cosmological theorizing of post-Parmenidean figures such as Anaxagoras, Empedocles, and Democritus. All these philosophers were (in their different ways) pluralists, holding that there is a numerical plurality of metaphysically basic entities; and yet, I shall argue, all were working in the Parmenidean tradition because they all accepted Parmenides' criteria for what is genuinely real.

1. References to the pre-Socratics are made using the standard numbering system of Diels and Kranz (cited as DK), 1951–2. Unless otherwise indicated, translations are my own. Many thanks to Mary Louise Gill and to Martin Curd for helpful suggestions and comments.
2. Stokes (1971) provides a comprehensive treatment of unity and plurality in early Greek thought in English.

Before Parmenides

Aristotle describes many of the early Greek thinkers as *phusiologoi*, because they sought to give an account of nature (or *phusis*). Although Aristotle has been accused of misunderstanding and oversimplifying the thought of the pre-Socratics, his account has much to recommend it. As far as we can tell from the very skimpy evidence (much of which comes from Aristotle himself and the Aristotelian tradition), the earliest philosophers, the Milesians, sought to explain the sensible world in terms of what might be called a generating substance, a single basic stuff that undergoes a series of transformations and generates the sensible world as we perceive it: for Thales this was most probably water, for Anaximander it is some characterless stuff called the *apeiron* (the indefinite), for Anaximenes, it is air (Graham, 1997). (For modern disputes about the best way to understand the Milesians see Algra, 1999; Barnes, 1979b; and in this volume Hussey, THE BEGINNINGS OF SCIENCE AND PHILOSOPHY IN ARCHAIC GREECE, esp. pp. 7–12.)

Because our evidence for the Milesians is so meager, it is difficult to draw any firm conclusion about their views or their reasoning. For Heraclitus we have more evidence, and it reveals him arguing not only about the real constitution of the world, but also about the character of our knowledge of that world. Although the surviving fragments present formidable interpretive challenges, it is clear that Heraclitus regards what he calls the *logos* (which can be translated as "account") as the single governing principle of the universe and the proper object of genuine knowledge (DK 22B1 and B2). In B1, after indicating that the account (*logos*) that he gives "holds forever," Heraclitus says that he will distinguish "each thing in accordance with its nature (*phusis*), saying how it is." It is understanding the *logos* that allows him to do this. At B50 he specifically links the *logos* with a special kind of unity: "Listening not to me but to the *logos*, it is wise to agree that all things are one." How all things are one is suggested (but not spelled out) in some of the fragments. In the case of certain opposites, Heraclitus claims that they are really one and the same (a doctrine that has received much attention in Heraclitus studies). Day and night (B57), the road up and down (B60), and the healthiness and noxiousness of sea water (B61) are but particularly vivid and paradoxical manifestations of this unity of opposites. Yet there is a more basic unity underlying that of the opposites, namely the interconnectedness and susceptibility to a single explanation of all that there is, and it is this that the *logos* explains (MacKenzie, 1988). This unity is exemplified primarily by fire, a part of the natural world and, for Heraclitus, an important symbol of the *logos*. At B30 Heraclitus says: "this cosmos, the same for all, no god or man made, but it always was and is and will be, fire everliving, kindling in measures and going out in measures." Heraclitus is not claiming that the world is literally made out of fire (in the sense of an Aristotelian material first principle) but, through the reference to measure, that it is a system of perpetual but ordered change. Just like fire, the cosmos is always changing its appearance yet remains one and the same in its nature; indeed it is tempting to see Heraclitus as saying that the real constitution or nature of a thing just is the ordered series of changes that it undergoes (Graham, 1997; MacKenzie, 1988). Real knowledge is the grasping of this point and thus understanding the underlying unity of all that there is (Curd, 1991; Lesher, 1983; MacKenzie, 1988).

In Heraclitus we have claims about both knowledge and its object: to know is to grasp the real nature of a thing, and that nature must itself be unified in a certain way. Although the content of the *logos* can be grasped by the human mind (B2), most people fail to hear or understand it (even after Heraclitus himself has told his story; B2, B1, B17, B34). In B40, Heraclitus condemns certain of predecessors for having much learning (*polumathiē*) but no understanding or comprehension (*noos*). B41 spells out in what that understanding consists: "the wise is one thing: to know the plan by which all things are steered." The polymaths of B40 have collected much information, but there is no unifying understanding of the nature of things that brings all the bits and pieces together into a comprehensive grasping of the single system that is the cosmos. Wisdom consists in knowing that which governs and controls the workings of the whole, and that is the *logos*. Truly to know the *logos* would be to know its content, knowing not only the grand scheme of changes that constitutes the cosmos but also to know the real nature of each thing and to be able to say how it is (as B1 puts it). It is only through the latter that we can know the former: an understanding of the cosmos is grounded in the knowledge of the nature of each thing. The *logos* itself is the unifying principle that guides and steers all things, a single account of how things are, and the object of genuine knowledge.

Parmenides

The surviving fragments of Parmenides' writings are contained in a poem that has two main sections: the *Alētheia* ("Truth") and the *Doxa* ("Opinion").[3] Parmenides' argument begins with an introduction (DK 28B1, "the Proem") telling of a journey by a young man (the *kouros*) to an unnamed goddess who both reveals an important truth and teaches that the truth must be accepted only after her arguments have been evaluated, and not because it comes from a goddess. Meeting the *kouros*, the goddess tells him that it is right that he learn "all things" (*panta*), "both the unshaking heart of well-persuasive truth and the beliefs of mortals, in which there is no true trust" (DK 28B1.28–30).[4] The task of learning *all* things cannot be achieved through learning by rote and then rejecting whatever is not on the approved list. Given the goddess's frequent demands that the *kouros* take control of his *noos* or thought (Lesher, 1984), to learn "all things" would seem to be to learn to judge correctly about things that present themselves as being the case, or concerning claims about what is the case made by others. This is reinforced by the words at B7.5–6 where the *kouros* is exhorted to judge

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3. The *Doxa* describes a cosmological theory similar in many respects to the theories that Parmenides criticizes in the *Alētheia*. Even ancient commentators were unsure what Parmenides' intentions were in the *Doxa*. Parmenides might have meant it as a genuine cosmology, as an illustration of the sorts of errors mortals make, or as a test for the sorts of mistakes he had diagnosed in the *Alētheia* as a kind of training tool. (For a range of accounts of the *Doxa*, see Curd (2004), Long (1963), Mourelatos (1971), and Nehamas (2002).) The arguments I give here are based on those of the *Alētheia*, and do not depend on an interpretation of the *Doxa*.
4. Reading *eupeitheos* (well-persuasive) rather than *eukukleos* (well-rounded) in B1.29.

(*krinai*) by *logos*, at B8.15 where the test is a judgment or decision (*krisis*), and at B8.62, where the goddess tells the *kouros* that she gives the account of mortal thought in the *Doxa* so that "no mortal thought will ever drive past you" (Lesher, 1984). A sign that the goddess intends to teach the *kouros* (and Parmenides' readers and hearers) to judge correctly comes in B2–3 when she begins her lesson:

> Come now, and I will tell you, and you, hearing, preserve the story,
> the only routes of inquiry there are for thinking;
> the one that it is (*estin*) and that it cannot not be
> is the path of Persuasion (for it attends on truth)
> the other, that it is not (*ouk estin*) and that it is right that it not be,
> this I point out to you is a path wholly inscrutable
> for you could not know what is not (for it is not to be accomplished)
> nor could you point it out . . . (DK 28B2)
>
> . . . for the same thing is for thinking and for being. (DK 28B3)

Although the fragments do not explicitly state the object of the inquiry (there is no subject provided for the verbs in lines 3 and 5), the content of the *Alētheia* and the *Doxa* point to it as being the fundamental nature of things – the ultimate entity or entities in an account of what there is. When the goddess promises that the *kouros* will learn all things, she is saying that she will teach a method of inquiry that will result in truth about the way things really are. Parmenides criticizes his predecessors because they have taken the wrong route in their attempts to explain the world. From Parmenides' point of view, they were unsuccessful because they accepted as basic certain entities that were not genuinely real insofar as they admitted change or incorporated opposites, and so embraced both what-is and what-is-not. To take what-is-not as the starting point is to set out on a route that can never be completed. As B2.7–8 says, to know or point out what-is-not "is not to be accomplished." Such an endeavor is doomed to fail because what-is-not is inherently vague (Mourelatos, 1976, 1979); it cannot be grasped or understood. In B6 and B7 Parmenides castigates those who rely on sense experience as a source of understanding and thus conflate what-is and what-is-not.

Many philosophers read the bare "is" in B2 and the other Parmenidean fragments as primarily existential, and regard Parmenides' arguments as dealing with what can exist as a subject of inquiry or discourse, and so as about anything that can be spoken of and thought. Thus, his subject could be grasshoppers or unicorns, as well as the basic entities like air or the *apeiron* of earlier philosophical theories (Barnes, 1979b; Coxon, 1986; Furth, 1974; Gallop, 1979, 1984; McKirahan, 1994; Owen, 1960). Despite its popularity, there are difficulties in reconciling the existential interpretation with the wording and context of Parmenides' arguments. For example, the target of the goddess's scorn seems to be less those who try to think about what does not exist, than those who conflate what-is and what-is-not in their inquiries and subsequent explanations of what is fundamental. In B1.31–32, the *kouros* is *warned* against mortal beliefs, not because they try to study or talk about what does not exist, but because they conflate things that merely seem to be with those that really are. (For further arguments against the existential interpretation, see Curd, 2004; Kahn, 1978, 1988, 2002; and Mourelatos, 1979.)

An alternate account of the bare "is," and the one I adopt in this chapter, interprets it not as existential, but as predicative in a particularly strong and fundamental sense. On this view, the subject of Parmenides' inquiry is the proper way to give an account of the nature or reality of things. Parmenides is concerned with the character of entities that can provide this sort of ultimate explanation (Curd, 2004; Mourelatos, 1971, 1989). What-is, in this sense, is what is metaphysically basic, the starting point in an explanation. Thus, to be, for Parmenides, is to be the nature or, as we would say, the essence of something: to be *F*, is to be what being *F* is, or what it is to be *F*. Only such entities are the appropriate basis for explanation. When we give an explanation, saying that thus and so is the ultimate nature of *X*, or that *X* is really *Y*, we are using Parmenides' "is" of ultimate explanation.[5] Such a subject is the object of legitimate knowledge or understanding (we have seen this link between knowledge and the nature of things in the work of Heraclitus). This is why Parmenides stresses the connection between what-is and genuine thought or understanding (see B3 and B8.34–38). To be sure, there is an existential aspect to such a claim, for anything that is a genuine nature or essence must exist, but the claim of existence is not primary: it follows from the truth that something indeed is a nature or essence. Thus, Parmenides' subject is not just anything that can be a subject of discourse; rather he is concerned with what can serve as the legitimate object of inquiry into the way things really are.

Parmenides gives the positive arguments about the nature of what-is in the long fragment B8. He opens his account this way:

> . . . a single story still
> remains of the route that it is; and on this route there are
> very many signs, that what-is is ungenerable and imperishable,
> a whole of a single kind, and unshaking and complete;
> nor was it nor will it be, since it is now all together
> one, cohesive. (DK 28B8.1–6, reading *oulon mounogenes* and *teleion* in B8.4)

These opening lines of B8 give formal requirements for a metaphysically basic entity; they tell us, not *what* what-is is, but *how* what-is is what it is. Reading "ungenerable and imperishable," and "unshaking and complete" as adverbial claims about the way that a basic entity holds (or is) its essential nature, we see that Parmenides claims that genuinely to be, to be *F*, say, is to be so ungenerably and imperishably, as a whole of a single kind, unalterably and completely *F*. Only what is in such a strong way is a possible nature and so an object of thought and understanding, because only such an entity can be grasped as a whole by *noos*, the capacity of thought in us. Parmenides does not tell us how many entities of differing kinds can satisfy those requirements, nor does he identify those that do. Rather, he gives us the criteria and tells us how to go about looking for these natures. These requirements can be discovered by applying the "decision" (*krisis*) stated in B8.15–16:

5. For a fused "is" involving both predicative and existential aspects, see Furth (1974), although Furth stresses the existential component. Mourelatos (1971) discusses alternative interpretations of the subjectless "is" of B2 and defends a notion of "speculative predication." For fuller discussion of the claim "X is really Y" see Mourelatos (1989) and Curd (2004).

And the decision (*krisis*) concerning these things is in this:
is or is not; and it has been decided, just as is necessary,
to leave the one unthinkable and unnamed (for it is not a true
path), the other to be and to be genuine.

The arguments of B2 and B3 and the opening lines of B6 spell out the basis of the *krisis*: "It is right that what is for saying and thinking be; for it can be, but nothing (*mēden*) cannot; this I bid you ponder." (For a discussion of this controversial text, see Cordero, 1979, 1987; and Coxon, 1986.) There is no way for thought or discourse to fasten on what-is-not; its vagueness frustrates any attempt to know or say what it is. Applied repeatedly in B8, the decision between is and is not shows that if being a certain way opens what-is to what-is-not, then what-is cannot be that way. Any attribute that entails the reality of what-is-not (or depends on its reality) is denied to what-is.

The arguments in B8 unfold the consequences of the claim that only what-is can be, and they reveal that Parmenides is committed to some sort of monism. Taken together, the cluster of signs along the route of inquiry (B8.1–6, above) point to an object of that inquiry that is unified, an indivisible whole of a single kind. So, what-is must be one. Plato and later thinkers describe Parmenides' position as something like "the all is one" (the *Sophist*) or report him as holding a view about "the One" (the *Parmenides*). Unity is a crucial notion for Parmenides, but in what sense is he a monist? Many histories of Greek philosophy portray Parmenides as a numerical monist committed to the existence of only one thing that is genuinely real (Guthrie, 1965; KRS, 1983; McKirahan, 1994), but this view has been challenged (Barnes, 1979a; Curd, 2004; Jones, 1973; Mourelatos, 1971; Solmsen, 1969). One early hint that Parmenides was not a numerical monist can be found in Book I of Aristotle's *Metaphysics*, where Aristotle contrasts Parmenides and Melissus. Recognizing certain affinities among the Eleatics, "those who spoke of the universe as having a single nature," he also notes differences: "Parmenides seems to fasten on what is one in account (*logos*), Melissus on that which is one in matter" (*Met.* A.5, 986b10–11, b19–20).[6] Although Aristotle seems to think that numerical monism (of the type advocated by Melissus) is a consequence of Parmenides' arguments, he sees that Parmenides is primarily concerned with the unity of the nature or essence of a thing. Once we abandon the notion that Parmenides' primary concern is with what can exist (and so give up thinking that the denial of what-is-not is to be equated with a fundamental rejection of what does not exist), it is less obvious that we are forced to understand Parmenides as asserting that only one thing exists.[7] Whatever is genuinely real is one, but that does not entail that there can be only one genuinely real thing. In the remainder of this section, I examine Parmenides' claims about what-is and his monism, and then, in the following sections, I explore the importance of his views about knowledge and unity for later pre-Socratic thinkers.

6. In *Met.* Δ.6 Aristotle explores the various senses of "one," and says that things are one in *logos* when statements of their essences are indivisible (1016a32–5).
7. Nevertheless, it is possible to accept both the existential interpretation and deny that Parmenides is a numerical monist, as in Barnes (1979a).

In considering Parmenides' arguments about what-is, it is crucial to remember that, for him, any genuine or legitimate predication of the form "X is Y" is the description of a knowable essence (Y), revealing the very nature of X. It is this understanding of predication that accounts for the peculiarly strong requirements that he places on what-is. The goddess begins her account of what-is by denying that it can come to be or pass away. Such changes, equivalent to birth and death, require that what-is come from or become what-is-not, and that it impossible. This prohibition against substantial change is then expanded into a general argument against any kind of change for what-is. The nature of a thing that is (a basic entity) is stable, subject to no alteration or modification. Thus, once we grasp it, we can hold it with confidence, for that nature can neither grow, alter, nor pass away. Whatever genuinely is will be always just what it is.

After denying the reality of coming-to-be, passing-away, and alteration, the arguments take up the claim that what-is is all alike and hence indivisible. At B8.4 we learned that what-is is a "whole of a single kind:" *oulon mounogenes*. The character or nature of what-is is uniform all the way through as we might say. Because it is the same all the way through, what-is is not divisible: anything that is genuinely real must be all and only just the one thing that it is. The only way to mark a division in an entity, E, would be to find some difference in E. But any predicate that E holds, it holds essentially; so to suppose that E had differences would be to suppose that it is essentially f and essentially g, and thus had two different natures. Thus, to know E or grasp it with the understanding would entail that we would have to know two things. But if E were essentially both f and g (and what it is to be f is different from what it is to be g), then E would then turn out to be essentially not-f (insofar as it is g) and essentially not-g (insofar as it is f).[8] Because it is impossible for what-is-not to be, what-is cannot be divisible. The argument against the divisibility of what-is is not an argument for numerical monism, but rather an exploration of the claim that each thing that is can have only one essence or nature. Parmenides' view of the connection between the immunity to change of what-is and its unified nature can be seen in the signs at the opening of B8. Lines 4 to 6 assert that what-is is "a whole of a single kind, and unshaking and complete; nor was it nor will it be, since it is now all together one, cohesive." In these claims the unity of what-is and its stability are linked by necessity: because what-is cannot change, it must be one, and because it is a whole of a single kind, it cannot change.

The continuation of the argument at lines B8.26–31 presents an image of what-is as held changeless, firm, and stable "within great bonds" by the force of "mighty Necessity;" thus what-is "lies by itself" and is steadfast. If we think of this as the reality of a thing, we can see that such a thing lacks nothing – it is completed and perfected, as lines B8.32–33 and 42–49 assert. Nothing can be taken away and nothing needs

8.   If being f is what it is to be E (i.e. E is f), then there cannot be any other essence different from f that is also what it is to be E. For, to grasp the essence g would be to grasp a thing that is different from the thing whose essence or nature is f. The apparent peculiarity of the argument depends on the nature of Parmenidean predication and the strong distinction between is and is not.

to be added: "for it is not in need; for if it were, it would lack everything." Because what-is, as an essence or nature, is whole and perfect, it can be grasped directly and completely with the understanding. Such a thing is the natural home of thinking, the natural target for *noos*, the power of understanding for Parmenides:

> And the same thing is for thinking and wherefore there is thought;
> for not without what-is, in which it is expressed,
> will you find thinking; for nothing either is or will be
> except what-is, since fate shackled just this
> to be whole and unchanging. (DK 28B8.34–38)

A controlled *noos*, taking the path of what-is, engages in inquiry that ends (both completes its journey and perfects itself) in what-is. The internal unity and stability of what-is makes this possible. An inquiry that misunderstands its appropriate object and fastens on the wrong kind of entity (one that seems genuine but is not) can never be completed, for a *noos* that attempts to grasp what-is-not will be caught in a loop of negations that lead it nowhere. This putative object of thought is too vague to be grasped, and so one traveling that path of inquiry can never complete the journey. (Think of trying to understand or intellectually grasp Anaximander's *apeiron*.) In contrast, the unified, bounded, completed, homogenous nature of a genuinely basic entity is the goal of controlled thought. Testing as he goes, judging by *logos*, as instructed in B7, and in sharp contrast to the uncritical hordes of B6 who rely on experience rather than thinking, a traveler on the route of what-is could reach the "unshaking heart of well-persuasive truth" about how things are. The tests have both a negative and positive role to play. Negatively, they can be used to rule out certain accounts of how things are, and so protect the inquirer from falling into the error of beginning with the wrong sort of entity. Positively, the tests tell us what is acceptable as a basic entity in a theory that explains the world as we perceive it. Such an entity could be a building block in an explanation of the world that human beings perceive, but it will not itself be subject to change. Only what is so strongly unified that it meets the requirements of Parmenides' arguments can be such a genuine entity. What and how many the basic entities are, and how they give rise to the perceptible world and the appearance of change, is left open by Parmenides – there may be one or many. Thus, the way is left open for a pluralism that is consistent with the monistic requirements of Parmenidean metaphysics. There are hints of such a view in the story told by the *Doxa*; if we take that story as a suggestion of how to provide a rational cosmology, then mixture and separation would be acceptable mechanisms, allowing a plurality of basic ingredients to maintain their character throughout the processes that produce the phenomenal world (see note 3).

The three major philosophical theories after Parmenides and before Plato were those of Anaxagoras, Empedocles, and the Atomists, Leucippus and Democritus (I follow the tradition, going back at least to Aristotle, that Leucippus and Democritus held the same version of atomism). The three theories differ in important ways, but they all share one important feature: all three adopt "Eleatic pluralism" (Wardy (1988), who concentrates on atomism). The surviving fragments indicate that this consistency with Parmenidean criteria is not accidental. In all three, there are passages that deny

genuine coming-to-be and passing-away, that affirm the internal consistency and hence internal unity of the basic entities of the theories, and that ground knowledge in those entities. Similarly, in all three, the numerical plurality of the basic entities is simply assumed or asserted, and mechanisms strikingly like the mixture and separation of the *Doxa* appear. None felt the need to refute numerical monism or argue for a plurality of basic entities, while all seem aware of the requirements of predicational monism. I now turn to a consideration of these three Eleatic Pluralists.[9]

Empedocles

In his account of the nature of things, Empedocles follows Parmenides in emphasizing the unreality of coming-to-be and passing-away:

> For it is impossible that there should be coming-to-be from what-is-not,
> and that what-is should be destroyed is not to be fulfilled and is unheard of;[10]
> for wherever one may set it, there is truth it will always be. (Empedocles, DK 31B12)[11]

Empedocles postulates six fundamental entities as the basis of his theory: four roots (earth, water, air, and fire) and two forces, Love and Strife.[12] The roots, through the motives forces of Love and Strife (Love is a power that pulls apart likes and brings together unlikes; Strife breaks up mixtures of unlikes and pulls together likes), are the source of the cosmos with its heavenly bodies, the earth, and the living beings – plants, animals, human beings – that inhabit it. The alternating ascendancies of Love and Strife produce and break up the cosmos as we perceive it. When Love absolutely dominates, there is a motionless Sphere, in which the roots are so thoroughly mixed that none can be discerned. Strife then gathers force and breaks up the Sphere; under its growing power, there is increasing separation until the roots are utterly segregated from one another. Love then increases her power and mixtures of unlikes begin to form. Although the details of the cosmic cycles are controversial, it is clear from B17, B21, and B26 that the only genuinely real entities are the roots, and Love and Strife. B26 makes the point clearly:

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9.   On later Presocratic thinkers, see also Mourelatos, THE CONCEPT OF THE UNIVERSAL IN SOME LATER PRE-PLATONIC COSMOLOGISTS, in this volume.

10.   Compare Parmenides DK 28B2.7 "it is not to be fulfilled" that one could know what-is-not, and B8.21, where destruction is "unheard of."

11.   There are difficulties in the text of line 1. I follow Wright (1981) (fragment 9 in her numbering), and Inwood (1992) (fragment 18 in his ordering) (ἐκ γὰρ τοῦ μὴ ἐόντος), rather than Diels's version as given in DK (ἔκ τε γὰρ οὐδάμ᾽ ἐόντος). As Wright notes (p. 173), this gives a better parallel with Parmenidean usage.

12.   Here, I concentrate on physics and metaphysics in Empedocles. These are intimately connected with his views about the best way for human beings to live. On the religious aspects of Empedocles' poem, see Betegh, GREEK PHILOSOPHY AND RELIGION, in this volume.

> For these very things are, and running through each other they
> become humans and the kinds of other beasts. (DK 31B26.3−4)[13]

Here, through the use of forms of the verbs "to be" and "to become," there is a clear distinction between the things that are real (the roots), and the temporary phenomena that result from the mixing (running through one another) of the roots. Empedocles shows how this is possible in B23:

> Just as when painters adorn votive offerings –
> men well taught by cunning in their craft –
> who when they take the many colored paints in their hands,
> mixing in harmony more of these but less of those,
> out of them make shapes resembling all things,
> crafting trees and men and women
> and beasts and birds and water-nourished fish
> and long-lived gods best in honors.
> So in this way do not let deception overcome your mind
> [to think] there is any other source for mortal things, as many as are
> seen, countless, perishable,
> but know these things clearly, having heard the story from a god. (DK 31B23)

Certain fragments (B96 and B98) actually give recipes for the proportions and degrees of mixture that will produce bone, flesh, and blood. Other fragments indicate the roles of different roots in accounting for phenomenal properties: for instance, in creatures with hard shells or horns, Empedocles attributes their hardness to the earth that makes up the surfaces of these animals.[14] In his commentary on Aristotle's *De Anima* (Simpl. *In De An.* 68.10−13, part of the context for fragment 96), Simplicius suggests that fire predominates in the recipe for bone "because of their dryness and pale color;" presumably, the heat and brightness of fire is responsible for both these properties. One could presumably know this both by perception of the (relatively) purer states of the roots, and by analysis of other perceptions, so working to the explanation. Thus, knowledge of the roots and the forces can lead to a principled understanding of the phenomenal world.

As metaphysically basic entities that conform to the Eleatic model, the roots and Love and Strife are each unified essences or natures, and each is knowable. In a passage at B17.27−35, Empedocles emphasizes that the roots constitute what is real, stressing that each has its own nature. We can come to understand the contents and

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13. The line "For these very things are, and running through each other . . ." occurs three times in the extant fragments: here in B26, and also at B17.34 and at B21.13−14. In each case we are given an example of the result of running through one another of the roots.

14. This claim occurs in ensemble *b* from the reconstruction of the exciting new fragments of Empedocles that were discovered on a papyrus in the library at the University of Strasbourg. The texts and the remarkable story behind the rediscovery and reconstruction of the fragments can be found in Martin and Primavesi (1999). Other discussions of the Strasbourg material, which is still being evaluated, can be found in Curd (2001), Laks (2002), and Osborne (2000).

processes of the sensible world through knowledge of these basic things. For Empedocles this knowledge has great importance, for it is understanding, not just of the processes of the world, but also of the best way to live (Kingsley, 2002). Great care must be taken to understand things properly; the hearer of Empedocles' poem is exhorted in B3 to "consider, by every art, the way each thing is clear," spurning none of the senses, to "think in the way each is clear;" this clarity is possible because, as B110 says, "all have thought and a share of mind." The claim in B110 may refer to all things or to all human beings (the contexts in which the fragment is found suggest the former). In either case, the suggestion is that human inquiry can be conducted well or badly (see Wright, 1981, pp. 236, 259–61). Sense perception can be a means to knowledge of the roots and the forces, but perception alone is apparently insufficient. There must be thought grounded in perception to reach the truth about the characters of the roots. Empedocles agrees with Parmenides that one can control one's thought and thus increase one's wisdom. Because there is a settled nature for each of the roots, we can in each case extrapolate from perceptual evidence to those characters. B21 refers to phenomenal sun, rain, air (indirectly), and earth as "witnesses" to the character of the roots (Simplicius quotes B21 twice as evidence for this). I take it that the perceived occurrences are not pure instances of the roots (which would occur only in complete separation under Strife), but the closest to that pure state available to human experience. Although Empedocles' theory embraces a plurality of basic entities; it is compatible with Parmenides' requirements for an acceptable and rational cosmology insofar as each of its constituents is a knowable, unified, metaphysically basic entity.

Anaxagoras

As with Empedocles, Anaxagoras' commitment to the Parmenidean framework (Curd, forthcoming; Furley, 1989, 1992, 2002) is clearly revealed by his emphatic denial that coming-to-be and passing-away are genuinely real:

> The Greeks do not think correctly about coming-to-be and perishing; for nothing comes to be or perishes. But they are mixed together and separated from the things that are. And thus they would rightly call coming-to-be being mixed and perishing being separated. (DK 59B17)

The changing things of the world of experience are conceived as temporary, local mixtures of the enduring and permanent things that are, the basic ingredients. Anaxagoras begins with an all-pervasive cosmic mix from which the cosmos evolved, as it is set rotating by Mind (or *Nous*). Through the force of the rotation, ingredients emerge from the original mixture, and they are mixed and separated again and again. It is these mixtures and separations that Anaxagoras calls coming-to-be and passing-away, and it is these that result in the world as we perceive it.

The ingredients in the original mix are characterized in DK 59B1: "all things were together, unlimited in extent (*plēthos*) and in smallness, for the small, too, was unlimited." Although there have been suggestions that the ingredients are restricted to

the opposites (Schofield, 1980; Tannery, 1930; Vlastos, 1950), many passages (e.g., B10, B1, B2, and B4a) indicate that the original mix includes more than the opposites (Graham, 1994). The unlimited extent and number of kinds of original ingredients show Anaxagoras' strategy for dealing with the Eleatic prohibition on coming-to-be for what is genuinely real. He agrees (in B17) that some objects can come to be (by mixture and separation), but these are not genuinely real since they depend for their existence on the basic (unchanging) entities of which they are composed. This is obviously true for what we would call artifacts, items produced by human agency. Anaxagoras acknowledges this in B4a, where he speaks of the works made by human beings; but Anaxagoras also regards plants and animals as complicated "natural artifacts" that result from the compounding of ingredients under the "direction" of a seed, rather than viewing seeds simply as microscopic versions of plants and animals that grow by expansion (Furley, 1989).

Everything was together in the original mix (B1); the original state is a completely blended cosmic soup. Moreover, Anaxagoras says that "everything is in everything" (B11, B12), so there is a sense in which the original well-mixed state of all things together is maintained at all places and times (B6: "just as in the beginning so too now all things are together"). Even after the rotation of the mix results in the formation of stars, planets, and animals, the separation out of things is only relative. Anaxagoras claims that everything remains in everything, although some things are larger or smaller in different areas. This means that the densities of the ingredients may differ in such a way that what looks like a discrete entity may appear, but this is only a temporary emergence from the background mixture. Just as in the original mix, the densities of air and aether are so overwhelming that air and aether appear to cover and pervade all things (Furth, 1991; Inwood, 1986). If we suppose that there are pure or unmixed stuffs, then there must have been (at least locally) a complete separation from the original state of all things together. That means that the things in the original mix could have reached the state of being "smallest" (no matter how we interpret "large" and "small" here). For suppose we start with a mix that, unlike Anaxagoras' own (which has an indefinite (*apeiron*) number of ingredients), contains only three ingredients, *xyz*. We then extract all of the *y* and the *z* to end up with a pure state consisting solely of *x*. If such a complete separation were possible, that would imply that there was a least amount (*plēthos*) of *y* and of *z*, such that, once it is removed from our hypothetical mixture, no more *y* or *z* would remain. Thus, complete separation implies that there is a least or smallest; but Anaxagoras denies that there can be a smallest (as well as a largest):

> Nor of the small is there a smallest, but only a smaller (for [*gar*] it is not possible for what-is not to be)[15] – but also of the large there is always a larger. And it is equal to the

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15.   There is a problem with the manuscript text at this point, since it makes no real sense, either on its own or as part of the claims of B3. One suggestion (Sider, 1981) is *to gar eon ouk esti tomēi [mē] ouk einai*, translated as, "For that which is cannot be cut away to nothing." Schofield (1980), whose text I follow here, rejects both the MSS reading and the suggestion adopted by Sider, arguing that the simplest emendation is the following: *to gar eon ouk esti [to] mē ouk einai*. He translates: for what is cannot not be (i.e., it is not possible that what-is not be).

   small in extent (*plēthos*), but in relation to itself each is both large and
   small. (Anaxagoras fr. 3, text following Schofield, 1980)

Despite its obscurity, one thing in this passage is plain. The denial of a smallest is linked to the assertion that what-is cannot not be. This is a good Parmenidean claim, and Anaxagoras thinks that it entails the denial of a smallest. If we understand small and large as degrees of manifestation of an ingredient or thing, then Anaxagoras is asserting that even when a stuff or quality is not apparent, it must still be present, just as in the original state.

   The explanatory clause in B3 (introduced by *gar*) suggests that Anaxagoras supposes that if an object were genuinely to lose a quality (by alteration, for instance), then that quality would cease to be. But there can be no passing-away; so there must be some way of explaining the apparent disappearance of the quality. Anaxagoras does this by placing no lower limit on smallness. Rather than ceasing to be, the quality becomes smaller (in the sense of less manifest), perhaps by being swamped by the larger extent (greater manifestation) of some other property. Thus in the case of illness, pallor may swamp the ruddiness of a normal healthy complexion, but that ruddiness has not ceased to be in the mixture, but has only become smaller in comparison with the greater extent of the pallor. Thus, the everything in everything claim can be maintained even as, speaking loosely, what we might call coming-to-be, passing-away, and alteration take place. Generation (as approved in B17) and alteration or growth (by mixture and separation) will continue. Anaxagoras respects Parmenides' principle that genuine change, generation, and destruction (that is, alteration, generation, and destruction of what is genuinely real) is impossible, while embracing an indefinite plurality of basic entities.

   The denial of the reality of change alone does not make the Anaxagorean system consistent with Parmenidean requirements. As we have seen, Parmenides rejects change as part of his analysis of what it means for something to be real, or genuinely to be, but that analysis also requires that each thing that is must be a unity and must be knowable. Anaxagoras' position seems to be that although human beings probably will not be able to fathom all that there was in the original mix and so what there is in each perceptible object (for everything is in everything and remains so), they may nonetheless have real (although limited) knowledge. B21 claims that we are unable to judge the truth because of the feebleness of the senses; but B21a suggests that the senses can be a clue to what is real: "phenomena are a glimpse of the unseen." Moreover there is evidence that Anaxagoras thought that the ingredients are in principle knowable. For after quoting our B7, Simplicius adds "That he supposed them (the ingredients) to be limited in form, he makes clear by saying that mind (*Nous*) knows them all," and there are claims in B12 that support his attribution of complete knowledge to cosmic *Nous*.

   The question of the Eleatic knowability of the Anaxagorean basic ingredients is connected to the issue of the nature of their characters, but we have only indirect discussion of this. In B12 Anaxagoras claims that *Nous* not only initiates the rotation that ultimately results in the physical world as we perceive it, it also rules and controls all things, "maintains complete understanding (*gnōmē*) . . . and wields the greatest

power." B12 also says that "*Nous* knew (*egnō*) all things, the things mixing together and separating out and breaking up, and as many as were going to be and as many were and are not now and as many as are now, and as many as will be" (DK 59B12). In order for *Nous* to perform these tasks of initiating, controlling, and ruling the rotation, it must know or understand all things (just as Anaxagoras says), and this is possible only if those things (the *chrēmata*) each have a genuine or settled character that *Nous* knows and understands. (Different views of *Nous* and the nature of its cosmic understanding can be found in Laks (1993) and Lesher (1995).) If each ingredient is something that *Nous* can indeed know, each is separable and pure in analysis, even though it can never be so in actuality. This seems to be what Simplicius meant in saying that Anaxagoras thought the ingredients "limited in form." As such, each will have the requisite Parmenidean character for serving as a basic entity, thus guaranteeing that Anaxagoras' theory is a rational cosmology, consistent with Eleatic pluralism.

Atomism

Atomism follows the pattern we have seen in both Anaxagoras and Empedocles: a plurality (here an infinite number) of basic entities that neither come to be nor pass away, and which mix and separate to account for the phenomena of the sensible world. That atoms are genuinely real in the appropriate Parmenidean sense is indicated by their being called "what is" or "being."

One of the clearest statements of atomic principles is contained in a fragment of Aristotle's *On Democritus*, quoted by Simplicius in his commentary on Aristotle's *De Caelo* (DK 68A37); there Aristotle discusses the nature and characteristics of atoms, contrasts them with the void, and explains the apparent coming-to-be and passing-away of sensibles through the action of atoms and void. The basic components of the theory are atoms, infinite in number, indivisible, all made of the same stuff, having differing shapes, sizes, and (perhaps) weights, but having no other characteristics, called the full or what-is; and void, called the empty or what-is-not.[16] Each atom is internally unified, being a simple mass of atomic stuff, and in being what it is, every atom is like every other: atoms belong to a single kind and each is itself a Parmenidean unity.

These two types of things, atoms and void, are the only things that are real and basic; anything else is simply a collection of atoms and void: "By convention sweet, and by convention bitter, by convention hot, by convention cold, by convention color:

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16. Although some surviving fragments assert the reality of atoms and void (DK 68B125), none discuss their natures in detail. We must rely on testimony from Aristotle and later writers, and Aristotle's own separate treatment of Democritus is largely lost (as are those of other ancient writers to whom books on Democritus are attributed). Atomic indivisibility is a vexed question; modern commentators disagree about whether atoms are theoretically as well as physically indivisible. There is also no consensus about whether Democritean atoms have weight. (See Bodnár, 2001; Makin, 1989; O'Brien, 1981; and Taylor, 1999a, 1999b.)

in reality atoms and void" (DK 68B9 = B125). Galen, one of the sources for this frag-ment, explains that such things as color, sweetness, and so on are what we would call secondary qualities: when Democritus says something is "by convention," he means (according to Galen), what is relative to us, and "not what is in the nature of the things themselves" (DK 68A49). But not only are colors and flavors like this, so are the ordinary physical objects that we perceive, and indeed our cosmos itself (as well as other universes that can form in the infinite void). These have no independent reality themselves, but are the result of the arrangements and rearrangements of atoms and void that occur as atoms move and intermingle. Atoms are in motion, and when they collide (or come very close to one another) some of them intermingle and these collec-tions or clouds of atoms, when large enough, constitute the perceptible objects of our world. Their perceptible characters (the things that are "by convention") are determined by the characters of the atoms and by the amount and arrangement of void in the mixtures. (Theophrastus' *De Sensibus* is our source for these claims; see DK 68A135.62, 65–67.)

The atomists' picture is complicated by their insistence on the reality of void. Void must be just as real (and just as knowable) as atoms in order for the theory to succeed; but there is good ancient evidence that the atomists called the void "not-being" or "what-is-not." To the Eleatic ear this sounds heretical. How can what-is-not be, much less be a fundamental and knowable part of a theory that explains what there is? This aspect of atomism apparently conflicts with Parmenides' assertion: "for never shall this be forced through: that things that are not are" (DK 28B7.1). So the question is, how can an atomist say that void both is what-is-not and that it is "in reality"? I suggest that the atomists regard void as a kind of thing that is (i.e., as meeting Parmenidean requirements that it have a genuine and unchanging nature), thus explaining why they say that what-is is no more than what-is-not. (A different view of the relation between the atomist view of void and Parmenidean requirements, that the atomists simply deny that what-is-not cannot be, can be found in Taylor, 1999a.)

A passage in Plutarch gives a clue to the nature of void. In his *Against Colotes*, Plutarch quotes B156, saying Colotes has been misled by the statement of Democritus: "in which he [Democritus] declares that thing (*den*) is no more than nothing (*mēden*), calling body *thing* and void *nothing*, since it too has a nature (*phusis*) and existence (*hupostasis*) of its own." Plutarch's attribution to void of a nature and existence supports what is already evident from DK 68B9/125, namely that void is "in reality," and is a genuine being. The problem is to determine what that essence or nature is, and why the atomists chose to call it "nothing" or "what is not." One obvious reason for this appears in Plutarch's comment. Atoms are bodies: they are hard, impenetrable, take up space, and so on. Although void has no bodily characteristics, it nonetheless plays an indispensable role in the theory. If there were no void, there could not be a plurality of atoms, for void is what separates atoms from one another; moreover, void has a further role to play in explaining both the characters and the movements of complex macroscopic bodies. We know from Theophrastus that the atomists appealed to the arrangement of atoms and void in metals such as iron and lead to explain their heaviness or lightness, and their hardness or softness. There is

also evidence that Democritus thought that macroscopic bodies (collections of atoms) tend to move or drift in a direction that contains more void (since those regions will offer less resistance). Thus, although void does not cause the motion of atoms, it helps to explain it at the level of compound bodies (Berryman, 2002; Sedley, 1982). So void has a nature as an atomic separator and is a necessary part of the atomic theory; this accounts for its reality. Nevertheless, void is not a body, and so it might reasonably be called what-is-not.

Atoms are not perceptible. Democritus recognizes the difficulty in coming to know atoms and void, saying that we are separated from reality (DK 68B6) and that "truth is in the depths" (B117), but he is nevertheless committed to the knowability of both atoms and void. All knowledge of atoms and void must be grounded in reasoning rather than perception. Sextus Empiricus acknowledges that there are, for Democritus, "two kinds of knowing, one through the senses and the other through the understanding; the one through the understanding he calls genuine, witnessing to its trustworthiness in deciding truth; the one through the senses he names bastard, denying it steadfastness in the discernment of what is true" (context of DK 68B11). Sextus continues, and quotes Democritus:

> He says in these words, "there are two forms of knowing: one genuine, the other bastard. To the bastard belong all these: sight, hearing, smell, taste, touch. The other, the genuine, has been separated from this." Then, preferring the genuine to the bastard, he continues, saying, "Whenever the bastard is no longer able to see more finely nor hear nor smell nor taste nor perceive by touch, but something finer" (DK 68B11)

Sense perception is an illegitimate form of knowing because it does not connect with what is real (atoms and void) but only what is apparent (the temporary collections of atoms and void that are "by convention" and that we call physical objects and their properties). To get beyond those objects to what is real we must examine smaller and smaller things – all the way down to the atoms themselves. But they cannot be perceived directly and so we must extrapolate, use our understanding (which indeed connects with the genuine – what is in reality) to achieve non-sensory knowledge of atoms and void. Just how this process works, Democritus either did not say or the evidence has not survived (Sextus' quotation breaks off at a crucial point), but it seems to involve beginning with perception and then moving to understanding (Lee, forthcoming).

Eleaticism after Parmenides: Melissus

The post-Parmenidean theories examined so far share a confidence that the unity required by Parmenidean arguments is consistent with a numerical plurality of entities, each of which individually satisfies the requirements for what-is given in Parmenides B8. I have suggested that Parmenides himself leaves open the question of how many entities there are (or might be) that satisfy his requirements. Melissus, exploring implications of certain aspects of the Eleatic position, and rejecting Parmenides' requirement that what-is be limited, advocates numerical monism. Thus, on my view,

Melissus is an innovator, not a mere imitator of Parmenides, as he is often represented. (Barnes (1979a, 1979b) is an outspoken advocate of Melissus' originality.)[17]

Beginning with the claim that nothing can come from nothing, Melissus argues that what-is never came to be, but "it is and always was and always will be"; moreover, as such it has no beginning, and no end, and is unlimited. Melissus tries to derive the unlimited character of what-is from its lack of coming-to-be: "just as it always is, in this way too it is necessary that it is always unlimited in magnitude (DK 30B3); nothing having both beginning and end is either eternal or unlimited" (B4). Because what-is must be unlimited, it must be one: "for if they were two, they could not be unlimited, but would have limits against each other" (B6). Thus, Melissus concludes in B7, "it is eternal and unlimited, and one and all alike." Here then indeed is the One (as he will call it in B8); post-Parmenidean pluralism is rejected. Melissus' crucial move is the requirement that what-is be unlimited. Parmenides had argued that what-is neither comes to be nor passes away; yet he had also declared that what-is is limited, "changeless in the limits of great bonds" (DK 28B8.26), "mighty Necessity holds in the limits of a bond" (DK 28B8.30–31). The difference may be that Parmenides, more than Melissus, emphasizes the epistemological aspects of what-is: the limited nature of what-is makes it complete and perfect, and thus entirely thinkable and knowable; indeed if it were unlimited it could not be grasped by understanding. Melissus, perhaps responding to the physical theories of Anaxagoras, Empedocles, and the Atomists, argues that something that has no beginning and no end must lack all limits, not only temporal but also spatial. Once that move is made, he thinks that uniqueness follows. (For a clear analysis and discussion of the argument, see Sedley, 1999.)

Melissus marshals other arguments against the mechanisms invoked by Eleatic pluralism and against the reliability of perception (or even its usefulness as a glimpse of the unseen). In B7 he argues that rearrangement is impossible (thus attacking mixture and separation as an acceptable method of explaining apparent change), and rejects both void and motion (thus attacking the foundations of atomism). In B8 he takes on sense perception. The pluralists can only argue that perception is a guide to what is genuinely real if there is some connection between what is real and what appears to the senses – only, that is, if there is a physical projection of basic entities into the sensible world. Thus, for example, Empedocles asserts that "mortal things" (i.e., the temporary mixtures of the roots that constitute sensible objects) have the characters they do because of the underlying natures of the roots that constitute them, and the Atomists say that qualities of perceptible objects are determined by the shapes and sizes of the atoms that constitute them. Melissus argues against this kind of

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17. Because of limitations of space, I omit a discussion of Zeno. He is best known for the paradoxes of motion that have come down to us from Aristotle's discussions of them. The literature on these paradoxes, in both their ancient and modern interpretations, is vast. For texts, see Lee (1936); clear introductory discussions can be found in McKirahan (1994) and (1999); and in this volume, see Bodnár and Pellegrin, ARISTOTLE'S PHYSICS AND COSMOLOGY. Zeno's paradoxes of motion can be read as concerned with plurality (for they deal with a plurality of places and times) and the general paradoxes of plurality (as given in Plato's *Parmenides* = DK 29A11, and in the paradox of the millet seed, DK 29A29) can be read as supporting the predicational monism that I have attributed to Parmenides (see Curd, 1993, 1998).

rational cosmology by offering a destructive dilemma. If sense perception is reliable, and shows (as it seems to) that things come to be and pass away and alter, then the underlying entities must also come to be, pass away and alter; but that is impossible. Thus, if sense perception is reliable, then no account of the perceived world that begins with underlying entities is possible. If sense perception is not reliable, we cannot use its evidence in the construction or testing of theories. Conclusion: rational cosmology is a hopeless project. If Melissus is right, then numerical monism is inconsistent with inquiry into nature (just as Aristotle claims in the *Physics*).

Aftermath

As we have seen, for Parmenides and most of the thinkers who came after him, the real question about unity and plurality is not how many beings there are but the nature of the beings that there are. The concern with the unity of what is metaphysically and epistemologically basic continues into later Greek thought, but an important shift occurs in Plato's late dialogues and in Aristotle. While Plato appears in the early and middle dialogues to accept Parmenides' claims, his critical examination of them in the *Parmenides* leads to a rejection of his assumption that there is only one kind of predication. Aristotle follows Plato in this, and argues that "being is said in many ways" (*Met.* Γ.2; Z.1).[18]

Plato's forms in the period of the *Phaedo*, *Symposium*, and *Republic*, are Parmenidean entities; one need look no further than the account of the Beautiful itself in the *Symposium* to find linguistic echoes and metaphysical parallels (see Nehamas, 1979; Solmsen, 1982; there are also Parmenidean echoes in the arguments of Book V of the *Republic*). But in the *Parmenides* Plato takes up the question of the coherence of the very idea of a unified Parmenidean entity. Using the characters Zeno and Parmenides, he questions whether a plurality of Eleatic ones, such as are required for his theory and for the Eleatic pluralisms that we have examined here, is possible. In Part I of the dialogue, he argues that the requirement that a form be a predicational unity undermines the participation relation between forms and particulars. In Part II, examining the internal unified structure of a selected form (the One), Plato shows that the Eleatic conceptions of unity and being are too strong to allow the attribution of such attributes as sameness and difference to forms (see Gill's introduction in Gill and Ryan, 1996). He begins the task of rethinking the relations among forms that culminates in the arguments of the *Sophist*, with its claim (put in the mouth of a Stranger from Elea) that there is a way that what-is is not and that what-is-not is. He begins to argue that not all uses of "to be" are the attribution of an essence or nature (in the *Phaedo* he had argued that only Forms can be said to be what they are, other things merely have their attributes through participation in the form).[19] Aristotle, too, rejects Parmenides' insistence that anything that genuinely is must be an essence or a nature. Nevertheless, even in Aristotle we can see traces of Parmenides' views, for Aristotle agrees with Parmenides that what absolutely is not cannot be (*Phys.* I), and he is much concerned

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18.　On this topic, see M. L. Gill, FIRST PHILOSOPHY IN ARISTOTLE, in this volume.
19.　See Notomi, PLATO'S METAPHYSICS AND DIALECTIC, in this volume.

to show that a statement or definition of an essence must be a unity of a particularly strong sort, and to demonstrate how such a requirement can be met (*Met.* Z.10–12).

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