

## XXV

### The Last of the Line

#### (a) *Diogenes the eclectic*

Diogenes of Apollonia was no great original. He was a medical man whose views appear to have had some considerable influence on his contemporaries and successors; and Aristotle has preserved for us his detailed account of the human blood vessels (**64 B 6**; cf. **B 9**). Like earlier doctors, he engaged in natural philosophy, writing, by his own account, a work *Concerning Nature*, a *Meteorology*, a treatise *On the Nature of Man*, and a book, *Against the Sophists* (Simplicius, **A 4**).<sup>1</sup> The philosophy he expounded was conceived on the old Ionian pattern; and Theophrastus held him to be the last of the *phusiologoi* (Simplicius, **A 5**). By common scholarly consent, he was least as well as last: he worked eclectically rather than creatively, and ‘does not seem to have attempted original thought’; indeed, he represents a positive regression, for his ‘general level of philosophical awareness suggests the age of Anaximenes, not that of Anaxagoras and the sophists’.<sup>2</sup>

A few voices have spoken for Diogenes: he was affected by Heraclitus, a pupil of Leucippus and Anaxagoras, and a significant influence on Melissus—in short, a man of some historical importance. Or he was a teleologist, and indeed the inventor of teleological explanation; or else, *pace* Aristotle, he was the first ‘material monist’. But those voices do not convince. Chronologically, the first suggestion is implausible; Anaxagoras was a teleologist before ever Diogenes wrote; and the Milesians were, as Aristotle says, material monists. In the last quarter of the fifth century Diogenes appears to have stood in Athenian estimation as the very type and paradigm of Ionian *physiologia*: he is a common butt of comedy and he had an influence on Euripidean tragedy.<sup>3</sup> Such a reputation implies not stature and novelty but rather the reverse; it is unoriginal men who are thus representative.

Three reasons, I think, justify the expense of a few pages on this essentially second-rate man: first, though aware of Eleatic arguments he remained a material monist, evidently thinking that the pluralistic accounts of his fellow neo-Ionians were not necessary to evade the Eleatic snares; second, we know far more of him than of the Milesian monists, and in his fragments we find arguments which have not come down to us under any earlier name; third, our knowledge of his teleology is much fuller than our knowledge of Anaxagoras’ earlier theory. If the man was a bore, his fragments (partly for accidental and extrinsic reasons) still command interest.

Diogenes was aware of Eleatic metaphysics, and defended an old Milesian monism in its face. The evidence for the first part of that statement is in fact thin, though it will hardly be imagined that a *physiologos* writing at the end of the fifth century could have been unaware of Parmenides’ writings. Diogenes Laertius reports:

He held that...nothing comes into being from what does not exist, nor perishes into what does not exist (**510: IX. 57=A1**).

The report is perfunctory and formulaic, but there is no reason to doubt its accuracy, or to reject the obvious suggestion that it states an acceptance of the Eleatic position on generation and corruption.

Diogenes' adherence to a Milesian monism is attested in his own words. *Concerning Nature* began, according to Diogenes Laertius, thus:

When beginning any account, one must, it seems to me, provide an indisputable starting point (*archê*) and write in a simple and noble style (**511: B1**).

It is not, perhaps, entirely fanciful to see a serious methodological point here: in the second half of the fifth century, the Greek geometers had been developing an axiomatic way of presenting their study; and Diogenes, in requiring an 'indisputable starting point', is, I imagine, striving to imitate the geometers and to found something like an axiomatized physics. But it would be foolish to lay much weight on that; and my present interest is in the content of Diogenes' *archê*. 'Immediately after the preface', Simplicius says, 'he writes thus:

It seems to me, to state it comprehensively, that all existing things change from the same thing and are the same thing (see **515: B 2**).

That this is material monism is clear enough; and most of the doxographers identify Diogenes' *Urstoff* as air.

From the *Urstoff* Diogenes developed the world. We have no first-hand fragments; but the doxography supplies the want:

He says that the nature of the whole is air, unlimited and eternal; and from it, as it is condensed and rarefied and changed in its affections, the form of other things comes into being (**512: Simplicius, A 5**).

He makes the cosmos thus: as the whole is moved, and becomes rare here and dense there...(513: pseudo-Plutarch, A 6).

Motion of the original stuff introduces variation in density; and those variations account for the different forms that the world assumes. The system is traditional; indeed, it is so far indistinguishable from Anaximenes' cosmogony.

How did Diogenes reconcile an Anaximenean cosmogony with an Eleatic denial of generation?

The others say that perceptible things are by nature (*phusei*); but Leucippus and Democritus and Diogenes say that they are by convention (*nomôi*), i.e. in opinion (*doxêi*) and in our affections (*pathesi*) (**514: Aëtius, A 23**).

Aëtius is not the best of authorities; and his testimony is isolated.<sup>4</sup> Yet it can, I think, be supported from **B 2**. After the general assertion of monism that I have already quoted, Diogenes proceeds thus:

And that is quite clear; for if the things that now exist in this universe—earth and water and air and fire and the other things which appear (*phainetai*) as existing in this universe—if any of these were different from the others (different in its proper nature) and were not the same as they changed in many ways and altered, they could in no way mingle with one another (see **515: B 2**).

The ‘proper nature (*idia phusis*)’ of any stuff is the same as that of every other stuff; and a proper nature cannot change. Everything is, really, the same; nothing, really, changes. What, then, are the alterations to which **515** refers? Some of them are specified in **B 5**; speaking of air Diogenes says:

For it is of many types (*polutropos*)—hotter and colder, drier and moister, stabler and having a sharper motion; and there are many other alterations in it, both of taste and of colour, unlimitedly many (see **527**).

**515** implies that cosmic change is somehow extrinsic to things; the examples of **527** confirm the implication; they are all alterations which can comfortably be construed as relational: if air becomes hotter, that is only to say that it appears differently to us; if the air moves faster, that is only to say that its parts alter their spatial relations to one another. Such changes are extrinsic or relational; they are not intrinsic or real.<sup>5</sup>

Change is a matter of gain and loss: we change by gaining one property and losing another; and a simple-minded definition of change might read thus:

(D) *a* changes at *t* if and only if for some  $\phi$  *a* is not- $\phi$  before *t* and *a* is  $\phi$  after *t*.

But (D), as Plato realized, will not do: if Cebes grows until he overtops Socrates, then according to (D) Socrates, as well as Cebes, has changed; for the predicate ‘is shorter than Cebes’ comes to be true of him. Cebes, no doubt, has changed; and as a result of Cebes’ change a new predicate comes to hold of Socrates. But that is not enough to make us say that Socrates has changed; and definition (D) must be abandoned.

Occurrences which count as changes by (D) but which are not genuine changes have been called Cambridge changes. In the example of Socrates and Cebes, Socrates undergoes a Cambridge change because Cebes suffers a genuine change. But Cambridge change is not always parasitic upon genuine change: if Socrates is alone in his room until Cebes enters, then at the time of Cebes’ entry the predicate ‘shorter than someone in the room’ comes to hold of Socrates. But neither Socrates nor Cebes (nor the room) has changed.

Diogenes, I suggest, wanted us to regard all apparent alterations in the world as Cambridge changes. He adopted the Abderite account of *nomôi* qualities, making them relational and mind-dependent; and he developed that account in an intelligible way. There is reason to think that he borrowed the void from Leucippus (cf. Diogenes Laertius IX.57=A 1); and that the void allowed him locomotion, and condensation and

rarefaction. Those operations will explain all apparent changes: yet they do not constitute intrinsic or real change in the *Urstoff*, for they are essentially relational operations. Things alter only in the sense that there are appearances of alteration to be accounted for. Similarly, locomotion, condensation and rarefaction underlie all generation; yet they do not constitute any intrinsic or real generation of things or stuff, for they are essentially relational operations. Things are generated only in the sense that there are appearances of generation to be explained. And the appearances, both of alteration and of generation, can be explained in a way that does no violence to Eleatic logic.

(b) *Monism revived*

Diogenes argued for his monism; he did not merely assert it. I begin by copying out the whole of **B 2**, the first half of which I have already quoted.

It seems to me, to state it comprehensively, that all existing things change from the same thing and are the same thing. And that is quite clear; for if the things that now exist in this universe—earth and water and air and fire and the other things which appear as existing in this universe—if any of these were different from the others (different in its proper nature) and were not the same as they changed in many ways and altered, they could in no way mingle with one another, nor would advantage and harm come to one from another, nor would plants grow from the earth, nor animals, nor anything else be born, if things were not so put together as to be the same. But all these things, being alterations from the same thing, become different at different times and return to the same thing (**515**).

Theophrastus sums the fragment up in a sentence:

There would be no acting or being acted upon if everything were not from one thing (**516: Sens §39=A 19**).

Material monism is necessary to account for change: if everything is not at bottom one substance, then alteration is not possible. That is, at first blush, an implausible assertion. How can Diogenes have defended it? I offer two interpretations.

First, consider the following reports about Democritus:

He says that what acts and what is acted upon must be the same or similar; for it is not possible for distinct and different things to be acted upon by one another; but if they *are* distinct and act in some way upon one another, that happens to them not in so far as they are distinct but in so far as some one thing belongs to them both (**517: Aristotle, GC 323b11–15=68 A 63**).

It is impossible, he says, for things which are not the same to be acted upon [by one another]; but if though different they actually act [on one another], they do so not in so far as they are different, but in so far as some one thing belongs to them both (**518**: Theophrastus, *Sens* §49=A **135**).

If  $X$  and  $Y$  interact, then  $X$  and  $Y$  must be somehow ‘the same’. Classical dualism discovered a problem in the interaction between body and soul: how, they wondered, can a corporeal stuff act upon a spiritual, or a spiritual upon a corporeal? Descartes asserted that interaction occurred but was inexplicable. Leibniz allowed that ‘*the way of influence* [i.e. of interaction] is that of the common philosophy; but as we cannot conceive material particles or immaterial species or qualities which can pass from one of these substances into another, we are obliged to give up this opinion’; and Leibniz advances instead his own theory of the ‘pre-established harmony’.<sup>6</sup>

Descartes’ difficulty and Leibniz’ argument rest upon a specification of the Democritean Principle:

(1) If  $a$  acts upon  $b$ , then  $a$  is of the same stuff as  $b$ .

Since soul and body have no stuff in common, soul and body cannot interact. Was this classical application of the Democritean principle also its original application? The Abderite world is homogeneous—all agents are indifferent atoms; but the neo-Ionian world of Anaxagoras is not. In Anaxagorean physics, mind is the supreme agent, and mind is distinct in nature from all other stuffs. I wonder if Democritus had Anaxagoras in his sights when he formulated principle (1).

However that may be, the first interpretation of **515** bases monism on the Democritean Principle. In addition to that Principle, Diogenes needs a premiss to the effect that all things interact with one another. That premiss requires a precise statement. Let us say that  $a$  interacts with  $b$  if either  $a$  acts upon  $b$  or  $b$  acts upon  $a$ ; and let us say that  $a$  is linked to  $b$  if there is some ordered set of objects,  $\langle c_1, c_2, \dots, c_n \rangle$ , such that  $a$  interacts with  $c_1$ ,  $c_1$  interacts with  $c_2, \dots$ ,  $c_n$  interacts with  $b$ . Then Diogenes’ premiss is:

(2) For any objects  $x$  and  $y$ , either  $x$  interacts with  $y$  or  $x$  is linked to  $y$ .

From (1) and (2) we can readily infer monism. Take any two objects,  $a$  and  $b$ . By (2) either  $a$  and  $b$  interact or they are linked. If they interact, then by (1) they are of the same stuff; if they are linked, then  $a$  is of the same stuff as  $c_1$ ,  $c_1$  as  $c_2, \dots$ ,  $c_n$  as  $b$ ; so that, again,  $a$  is of the same stuff as  $b$ . Generalize the argument, and you have material monism.

Assumption (2) is, I think, a highly plausible hypothesis. Diogenes’ argument fails if the Democritean principle is false. And although that principle has been immensely popular, I know of no argument in its favour: the principle is not (as far as I can see) a logical truth; and I do not think that it is confirmed by empirical observation.

I find a different interpretation of **515** in Aristotle:

Diogenes rightly says that if everything were not from one thing, then things would not act and be acted upon by one another; e.g., the hot become cold, and this again become hot. For it is not the heat and the

coldness that change into one another, but (evidently) the underlying subject (519: GC 322b12–17=A 7).

Aristotle is not thinking of the Democritean principle, but of a theorem on change which he himself accepts: if at  $t$  an  $F$  becomes a  $G$ , then there must be some one thing, persisting from some time before  $t$  to some time after  $t$ , which is first  $F$  and later  $G$ . Change is change *in* or *of* something; it requires a unity in diversity; it occurs when some one thing assumes (or appears to assume) different aspects at different times.

The Aristotelian principle may be written as:

(3) If an  $F$  becomes a  $G$  at  $t$ , then there is something which was  $F$  before  $t$  and  $G$  after  $t$ .

Diogenes, I think, needs a strong version of (3), viz.:

(4) If an  $F$  becomes a  $G$  at  $t$ , then there is some stuff  $S$  such that a piece of  $S$  was an  $F$  before  $t$  and a  $G$  after  $t$ .

In addition to the Aristotelian principle, Diogenes requires a premiss to the effect that everything becomes everything. In order to state that premiss precisely, let us say that  $F$ s connect with  $G$ s if either some  $F$  becomes a  $G$  or there is an ordered set  $\langle H_1, H_2, \dots, H_n \rangle$  such that some  $F$  becomes an  $H_1$ , some  $H_1$  an  $H_2$  ..., some  $H_n$  a  $G$ . Diogenes' premiss then is:

(5) For any  $\phi$  and  $\psi$ ,  $\phi$ s connect with  $\psi$ s.

The parallelism between linking and connecting, between (2) and (5) is evident.

Take any two properties,  $F$ ness and  $G$ ness. By (5),  $F$ s and  $G$ s connect. Hence either some  $F$  becomes a  $G$ , in which case (by (4))  $F$ s and  $G$ s are made of the same stuff; or else some  $F$  becomes an  $H_1$ , some  $H_1$  an  $H_2$ ..., in which case  $F$ s and  $H_1$ s are of the same stuff,  $H_1$ s and  $H_2$ s are of the same stuff..., so that again  $F$ s and  $G$ s are of the same stuff. Generalize the argument, and again you have monism.

Assumption (5) is less plausible than assumption (2); but it has evident connexions with Anaxagorean physics (above, p. 330), and I imagine that Diogenes may have adopted it from his neo-Ionian predecessor. Aristotle's principle (3) is surely true—indeed, it is a logical truth about alteration. It may be expressed by saying that alteration implies a persistent substrate; and in a trivial sense any such substrate is an Aristotelian 'matter' or *hulê*—if '*hulê*' is defined as that which persists through change (cf. *Met* 1042a32-b8). But must *hulê* then be a stuff or material? Lot's wife changed into a pillar of salt and Niobe was turned into stone: if we regard those phenomena as alterations, then the persistent substrate is form, not stuff. What links Lot's wife and the pillar, Niobe and the rock, is the shape or form of their different constituent stuffs. Normally, perhaps, a material continuity underlies formal alteration; but in odd cases formal continuity may underpin material change. And if that is so, it is neither a necessary nor even a contingent truth that alteration presupposes some persisting stuff, and proposition (4)—Diogenes' version of the Aristotelian principle—is false.

In any case, as I have stated the argument it contains a logical flaw: given that an  $F$  becomes a  $G$ , we can infer, by (4), that *that*  $F$  and *that*  $G$  are made of the same stuff; but we cannot infer—as the argument would have us do—that *all*  $F$ s and *all*  $G$ s are made of the same stuff. In order to reach that universal conclusion we must supplement the argument with a further premiss, a Principle of Homogeneity:

(6) If any  $F$  is made of a stuff  $S$ , then every  $F$  is made of  $S$ .

Now that Principle is perhaps Diogenean; for Diogenes supposes that everything that is *F* must have some one 'proper nature'; and may not that 'proper nature' consist in, or at least include, being constituted by some stuff, *S<sup>F</sup>*? But the 'proper nature' of Lot's wife or of Niobe does not include a constituent stuff; and in general, if alteration can occur by formal rather than material change, then 'natures' do not determine stuffs. Nor need we look to such *outré* occurrences: it is plainly untrue that everything *F* ('humaniform', 'green', 'sour', 'six feet long') is made of a single stuff *S<sup>F</sup>*.

Neither interpretation of Diogenes' fragment gives him a sound argument for monism; and that is hardly surprising. Yet **516** indicates some cogitation on the logical features of alteration; and from it we may elicit plausible and influential propositions. The fragment is not devoid of philosophical charm.

(c) *The matter of the universe*

If there is a single stuff, what is it?

And [Diogenes] too says that the nature of the whole is air, unlimited and eternal.... That is what Theophrastus reports about Diogenes; and the book of his entitled *Concerning Nature* which has come into my hands clearly names as air that from which all other things come to be (**520**: Simplicius, **A 5**).

Theophrastus' account is repeated by the doxographers (Diogenes Laertius, IX. 57=**A 1**; pseudo-Plutarch, **A 6**; Aëtius, **A 7**); and it accounts for the tradition that Diogenes was a follower of Anaximenes (Simplicius, **A 4**; cf. Antisthenes, *apud* Diogenes Laertius, IX. 57=**A 1**). Theophrastus, however, did not win universal support.

The research of the majority asserts that Diogenes of Apollonia, like Anaximenes, makes the primary element air; but Nicolaus in his book *On Gods* reports that he takes as his principle something between fire and air (**521**: Simplicius, **A 4**).

Simplicius notes that Porphyry adhered to Nicolaus' interpretation (cf. **63 A 1**) and he says that:

I too, on reading these initial remarks [i.e. **515**], thought that [Diogenes] took the common substrate to be something other than the four elements [and hence something distinct from air] (**522**: *ad* **64 B2**).

Simplicius offers an argument for taking air as the material *archê*: 'These men thought that the ease with which air is acted upon and altered (*to eupathes kai eualloiôton*) made it susceptible to change' (**A 5**); but he does not ascribe that to Diogenes by name, and he produces no textual evidence to support such an ascription. He does, however, quote from Diogenes to prove Theophrastus' opinion right and Nicolaus' wrong: after copying the passages we list as **B 3**, **B 4** and **B 5** he says:

Here, then, [Diogenes] evidently says quite clearly that the stuff which men call air is the principle (**523**: *ad B 6*).

Simplicius is out to make a case, and he possessed Diogenes' treatise: if we cannot find in **B 3–5** the statement that air is the *archê*, we shall have no reason to ascribe it to Diogenes at all.

I shall later quote those three fragments in full. Here it is enough to say that **B 3** does not mention air at all; and that while **B 4** proclaims that 'men and the other animals that breathe live by air; and this is both soul and thought for them', it makes no mention of an *archê*. It is, I suppose, the following sentence from **B 5** on which Simplicius principally relies: 'And there is not a single thing which does not share in this [sc. air]; but there are many types both of air itself and of thought. For it [i.e. air] is of many types...'. Diogenes is not doing cosmology here; nor is he talking of a material substrate. Rather, he is concerned with psychology: that air is 'of many types (*polutropos*)' is advanced to show not that it is a suitable substratum, but that it can constitute souls and thoughts of radically different varieties.

There is, then, no evidence for Theophrastus' interpretation of Diogenes' *archê*; and there is some evidence against it. **515** lists air alongside earth, water, fire and the rest; the collocation implies that air is non-elemental just as they are, and nothing is done to cancel that implication. Nicolaus' assertion that the *archê* is 'something between fire and air' fares no better than Theophrastus: there is no textual evidence in its favour. Yet if we reject both Theophrastus and Nicolaus, what remains? Only, I think, **B 7**:

And this itself is a body, both eternal and deathless; and of the rest, some come into being, others depart (**524**).<sup>7</sup>

Is that Diogenes' final characterization of his material substrate? Is it simply body (*sôma*)—'stuff' or, in the Scholastic jargon, 'prime matter' ?

Since water visibly changes into air, and the change is an alteration not a destruction-cum-generation, both water and air are modifications of some underlying stuff. But that underlying stuff cannot be characterized by any perceptible properties; for any such characterization would identify it with one of the four elements, or with an elemental compound. Consequently, it is pure, unqualified, stuff. The conclusion will offend philosophers as a nonsense (did not Locke unwittingly explode the notion of 'substance in general', that 'something we know not what?'); and it will offend scholars as an anachronism (prime matter was invented by Aristotle, if not by later Aristotelians). Neither offence is justified, and a single argument will do for both: Diogenes is applying to Milesian stuff precisely the account which the Abderites gave to their atoms. Atoms are bodies (*sômata*); they occupy space and they have motive powers; but they have no perceptible qualities, they are *apoiá*, without qualities (above, pp. 368–70). That is a coherent notion; and it is virtually identical with the notion of 'prime matter'. Diogenes, I suggest, married Anaximenes with Leucippus; and the marriage produced an Aristotelian offspring: his *archê* is not air, and it is not a mysterious fifth element between air and fire; it is matter, stuff.

(d) *Immanent will and its designs*

For things could not have been parcelled out (*dedasthai*) in this way without thought (*noêsis*), so that there are measures of everything: of winter and of summer, of night and of day, of rains and of winds and of fine weather. And the other things, if one wishes to think about them, one would find to have been disposed in the finest (*kallista*) way possible (525: B 3).

In this brief fragment we find the first extant exposition of the Teleological Argument for the existence of God, or the Argument from Design. We may conjecture that Anaxagoras had employed it, though no evidence directly supports the conjecture; and we find it elaborated in two passages in Xenophon's *Memorabilia*;<sup>8</sup> but if it was current at the end of the fifth century and not an innovation of Diogenes, it is to the despised Diogenes that we must now look for its first statement.

The Argument was canonized by Aquinas as the fifth of his Five Ways to God. According to Kant, it 'is the oldest, the clearest, and the most accordant with the common reason of mankind. It enlivens the study of nature, just as it itself derives its existence and gains ever new vigour from that source.... It would...not only be uncomfoting but utterly vain to attempt to diminish in any way the authority of this argument. Reason, constantly upheld by this ever-increasing evidence, which, though empirical, is yet so powerful, cannot be so depressed through doubts suggested by subtle and abstruse speculation that it is not at once aroused from the indecision of all melancholy reflection, as from a dream, by one glance at the wonders of nature and the majesty of the universe—ascending from height to height up to the all-highest, from the conditioned to its conditions, up to the supreme and unconditioned Author' (*Critique of Pure Reason*, A 624).

Kant's high praise for the Argument derives from Hume; in Hume's *Dialogues on Natural Religion*, Cleanthes advances the Argument and asserts that 'it requires time, reflection and study, to summon up those frivolous, though abstruse objections, which can support Infidelity.... To what degree...of blind dogmatism must one have attained, to reject such natural and such convincing arguments?' I am, I confess, a blind dogmatist by Cleanthes' reckoning; but I shall not try here to justify my dogmatism, limiting my task to the exposition and criticism of Diogenes' version of the Argument.

Diogenes' argument is splendidly simple. He starts from the premiss:

- (1) Everything is arranged in the finest possible way; and he concludes to:
- (2) There is an intelligent arranger of everything.

The premiss is a truth of experience: we observe that 'there are measures of everything'; and the conclusion follows at once. From the conclusion it is easy to infer the existence of an almighty, everlasting, and merciful God.

I shall ignore the final, theogonical, step in the argument. Hume demonstrated with wit and cogency that the Argument from Design cannot establish the existence of a god with the traditional Christian attributes: infinity, eternity and benevolence cannot be squeezed from the Argument. But Diogenes was not a Christian; and he does not claim

that his designing intelligence has the Christian attributes. In any case, the argument from (1) to (2) is interesting in its own right.

The premiss (1) contains two uncertainties. First, the word ‘everything’ can be taken either collectively (‘the whole sum of things’) or distributively (‘each thing’). The latter sense seems intended in 526, and it is certainly suggested by Xenophon and by most of the orthodox modern versions of the argument. Suppose, now, that we accept the principle:

(3) If  $a$  is finely arranged, then there is an intelligent arranger of  $a$ . Even so, we cannot infer (2) from (1). The premiss entails that everything has its arranger, i.e.:

(4)  $(\forall x)(\exists y)(y \text{ is the arranger of } x)$ ; but it does not entail that there is an arranger of everything, i.e.:

(5)  $(\exists y)(\forall x)(y \text{ is the arranger of } x)$ .

Kant anticipated the objection: having concluded that ‘there exists, therefore, a sublime and wise cause (or more than one)’, he proceeds to argue that ‘the unity of this cause may be inferred from the unity of the reciprocal relations existing between the parts of the world, as members of an artfully arranged structure’. Kant’s recipe, in effect, is to read ‘everything’ in (1) in the collective and not the distributive sense; and (5) rather than (4) is the result. But Hume had already countered that move: ‘And what shadow of an argument... can you produce, from your hypothesis, to prove the unity of the Deity? A great number of men join in building a house, or ship, in rearing a city, in framing a commonwealth: why may not several deities combine in contriving and framing a world?’

That criticism is, I think, fatal to any Christian use of the Argument; yet it is not so damaging to Diogenes, who does not seem to have shown any particular interest in proving a unique deity. The second uncertainty in (1) brings us nearer to a fatal blow. The traditional Argument speaks of order or design; Diogenes talks of a fine parcelling out or arrangement. These terms may cover two distinct notions. First, the underlying notion may be aesthetic: order, thus construed, is pattern, regularity, symmetry, or in general some aesthetically satisfying and economical arrangement of things. Second, the underlying notion may be one of purpose or plan: order, thus construed, is the appearance of direction, of intention, of purposed or planned progress. A snowflake and the solar system show aesthetic order (of different magnitude and to different degrees): they are intricately patterned, arranged in simple and satisfying regularities. The human digestive track and the maggot show purposive order: their activities appear directed to some goal or end. Snowflakes do not appear to have a purpose; and the intestines are aesthetically disgusting: pattern and purpose regularly fall apart (functional architecture is almost invariably ugly); but they sometimes combine, in the spider’s web, the bee’s honeycomb, or the elegant root of the parsnip.

Does everything exhibit pattern? does everything exhibit purpose? do we find things ‘to have been disposed in the finest way possible’? Let me be brutally dogmatic. First, not all features of the world exhibit the beauty of the snowflake; even in the natural world, untouched by human hand, there is much that is messy, crude, and ugly. Nor, in my judgment, is the universe as a whole a thing of aesthetic value. Second, the universe as a whole does not seem, to me at any rate, to evince or exhibit purpose; it does not look as though it were planned or contrived for some end. And if some of the parts of the natural world do seem purposive, most of inanimate nature does not: there is no

appearance of intention in the course of the comets, no goal in the ebb and flow of the tides.

But those reflexions are perhaps a trifle subjective; others may spy pattern and purpose where all I see is heartless, witless Nature. Third, then, I assert that (3) is false. It is certainly not a *logical* truth that patterned objects were planned by a designer or that the apparent goals of natural processes are the actual goals of some instigator of those processes. Nor is (3) a well-grounded empirical hypothesis. Defenders of the Argument regularly call upon analogy: the eye has the same pattern and appearance of function as the telescope; the latter was designed by a human artificer; hence the former was designed by a divine artificer. The analogy is frail: it starts from a very small number of cases, and it implies a false degree of similarity between natural objects and artefacts. Every day we are faced with a thousand attractive or purposive things, none of which bears any mark of the designer's hand. Proposition (3) is grotesquely implausible: experience suggests something quite different: that fine arrangements arise, for the most part, without the plan or intervention of any fine arranger.

The Argument from Design is, I guess, the most appealing of all the traditional arguments for the existence of God; and of all those arguments it is (in my view) the least plausible. At any event, Diogenes' version of it has no probative force.

Having argued for a cosmic intelligence, Diogenes proceeds to inquire into its nature. He argues that it is air; and he implies that it is divine. For that conclusion, which delighted the comic poets (e.g., Philemon, C 4) and is frequently reported in the doxography,<sup>9</sup> we have Diogenes' own words:

Again, in addition to this there are these great signs too: man and the other animals that breathe live by air; and this is both soul (*ptuchê*) and thought (*noêsis*) for them (as will clearly be shown in this treatise), and if this is taken away they die and thought leaves them (526: B 4).

The promise of 526 is fulfilled in B 5, which I here quote in full:

[i] And it seems to me that what has thought is that which men call air; and that by this all are governed, and it controls all. For (?) the custom of this very thing seems to me to be (?) to have penetrated everything, and to dispose everything, and to be in everything, [ii] And there is not a single thing which does not share in this; but no one thing shares in the same way as another, but there are many types both of air itself and of thought. For it is of many types—hotter and colder, drier and moister, stabler and having a sharper motion; and there are many other alterations in it both of taste and of colour, unlimitedly many, [iii] And the soul of all animals is the same: air, hotter than the external air in which we exist but much colder than the air by the sun. And this warmth is not alike in any of the animals (since not even in men is it the same from one to another), but it differs—not greatly but in such a way as to be similar, [iv] Now none of the things that change can become utterly similar to another, without becoming identical. Thus inasmuch as the alteration is of many types, animals too are of many forms, and many, alike one

another neither in form nor in way of life nor in thought, because of the quantity of the alterations. Nevertheless it is by the same thing that all live and see and hear, and all have their other thought from the same thing (527).

The argument of this long fragment is far from clear in detail; and I shall not attempt a full exegesis. The chief *probandum*, I take it, is the identification of air as the medium of thought, and in general of life; and part [i] offers the argument for that conclusion: air is the penetrating oil *par excellence*; it is therefore the stuff that can govern and control; and hence it is to be identified as the bearer of thought. The argument is thoroughly Anaxagorean; and it requires no special commentary here.

The function of parts [ii]–[iv] is negative. It seems an objection to Diogenes that there is so vast a variety of life and intelligence; for how can one stuff, air, underlie so many thoughts? Part [ii] answers this by reference to the vast variety of forms of air; and [iii] states how thought can indeed be ‘the same’ in all animals, and yet ‘different’. (In [iv] Diogenes adduces a logical principle which seems to amount to:

(6) If for any  $\phi$ , if  $a$  is  $\phi$  then  $b$  comes to be  $\phi$ , then  $b$  comes to be  $a$ .

The principle has evident affinities with Leibniz’ doctrine of the Identity of Indiscernibles; but it is not the same as that doctrine, and I do not understand how Diogenes intends it to be applied.)

527 has Anaxagorean connexions. The doxographers notice the fact (cf. Simplicius, A 5), but they do not make Diogenes a ‘pupil’ of Anaxagoras: Anaxagoras’ pupil, in the standard histories, is Archelaus (e.g., Simplicius, 60 A 5), the first Athenian philosopher. Archelaus followed Anaxagoras’ physics on most points, but on the status of *nous* he differed:

He says that some mixture inheres in mind essentially (528: Hippolytus, 60 A 4).

[He held that] air and mind are god—but not the cosmogonical mind (529: Aëtius, 60 A 12).

Anaxagoras’ mind is ‘pure’: Archelaus identifies it with air; and hence he is obliged to treat it as a stuff alongside other stuffs, containing a ‘mixture’ or a portion of everything. And, being a stuff, mind too will be in everything:

He thought that everything was constituted in such a way that mind too, he said, inhered (530: Augustine, 60 A 10).

The authorities are late and confused; yet the picture they present is not wholly implausible: in much the same way as Anaximenes gave substantial form to Anaximander’s abstract *apeiron*, Archelaus made Anaxagoras’ *nous* an intelligible part of the cosmos by identifying it as ordinary air, a familiar stuff capable of figuring in hard-headed physics. If *nous* is divine, and *nous* penetrates everything, then Archelaus has on his hands a panpsychism and a pantheism; and Augustine perhaps indicates as much.

Many scholars find Archelaus' view in Diogenes: **527** contains in [i] a statement that air is god; and in [ii] an assertion of panpsychism. From those two premisses, pantheism follows immediately. The relative chronology of Diogenes and Archelaus is unknown; but whether Diogenes borrowed from Archelaus or Archelaus from Diogenes, both men propounded the same revision of Anaxagoras' doctrine of *nous*.

That view may well be correct; but it rests on insecure foundations. First, the reader may well wonder how god is discovered in [i]: the answer is, by scholarly conjecture. The clause that I have embraced with question marks is textually corrupt; the most popular emendation makes it read: 'And this very thing seems to me to be god'.<sup>10</sup> Palaeographically the suggestion is neat; yet it does not fit particularly well into the argument of **527**, and other emendations which ignore god are possible. But however that may be, air is certainly divinized in the doxography; and that does give some force to the first premiss in the argument for Diogenean pantheism.

What of the second premiss, panpsychism? **527** says in [vi] that 'there is not a single thing which does not share in this [i.e. in air]'; and in [i], air is 'in everything'. That amounts to panpsychism provided that 'everything' means literally everything, and that air always bestows thought or intelligence. The first proviso may be true; but it is possible that 'all' and 'everything' are throughout **527** limited to animate objects. (In the clause 'all are governed', 'all' is restricted to men, as its gender shows.) The second proviso is almost certainly false: thought, according to **527**, is carried by fairly hot, moist air. To say that 'what has thought is that which men call air' is not to say that every bit of air is intelligent: air is the stuff of thought; but only in one of its modifications does air actually support thinking.

On the orthodox view of Diogenes' philosophy, air is both the omnipresent substratum of change and the omnipresent divinity: stuff and creator coincide, and material monism becomes a form of pantheism. I have preferred to separate both the substratum and god from air: the substratum is 'body' (*sôma*), and air is just one of its forms; the creative intelligence is not air as such, but a modification of air.<sup>11</sup> Diogenes' philosophy may thus be outlined as follows: the phenomena of change show that there is an underlying substrate more primitive than earth or water or fire or even air; it is pure stuff or 'body', and it has the essential characteristics of Abderite atoms. But the substratum logically required by change need not be identified with the *Urstoff* physically employed in cosmogony. It is possible that the cosmogonic *Urstoff* is air, one of the manifestations of body: in Diogenes' thought, as in that of Anaxagoras (**59 B 1**) and of Archelaus (Sextus, **60 A 7**), air plays an important role in cosmogony without being the general fundament of change. The *Urstoff* is moved, and the cosmogonical processes are begun, by the action of thought. And since what thinks is air, the cosmos is thus, in the final analysis, self-starting and self-created.

Diogenes of Apollonia was not a thinker of vast innovatory power: the monistic insight of the early Milesians, the bold and intricate physics of Anaxagoras, and the profoundly influential speculations of the Atomists, cannot be matched by any grand Apolloniate thought. Diogenes was an eclectic and a synthesizer. Yet to say that is not to damn him: he was, I think, a judicious eclectic and a bold synthesizer. He ignored the intricacies of Anaxagorean mixture, but accepted the simple thesis of *nous*, supporting it by what was destined to become a classic argument; he ignored the untestable hypothesis of the Atomists and did not speak of minute corpuscles swimming in the

void, but he took from them their characterization of stuff, and perhaps their account of change. He was conscious of the Eleatic pothos and familiar with the neo-Ionian solutions. His own attempt at a solution is in many respects primitive: he does indeed breathe the air of Anaximenes. His primitiveness, however, is neither a weakness nor an indication of ignorance. Rather, grasping the importance of the central Milesian structure of material monism, he attempted to defend it against Eleatic assault, to buttress it with a few neo-Ionian stones, and to reveal its intrinsic strength and majesty.

After Diogenes, science and philosophy took a new turn; and the achievements of Plato, and then of Aristotle, temporarily eclipsed the light of Presocratic thought. For us that light is fitful but not dim: few rays emerge from the clouds of time; but they are brilliant and penetrating. And they will, I think, convince any doubters of the truth of the old platitude, that the history of thought begins with Thales and his Presocratic successors. Those ancient thinkers understood the nature of man long before Aristotle expounded it to the world at large; and they acted upon their understanding. For

What is a man,  
 If his chief good and market of his time  
 Be but to sleep and feed? A beast, no more.  
 Sure he that made us with such large discourse,  
 Looking before and after, gave us not  
 That capability and god-like reason  
 To fust in us unus'd.