and reincarnation, **284**, taken together with **281-3**, suggests that Pythagoras taught an eschatology according to which: (1) the soul is subject after death to a divine judgement; (2) there follows punishment in the underworld for the wicked (perhaps with hope of eventual release: **410**), but (3) a better fate for the good, who if they remain free from wickedness in the next world and in a further reincarnation in this – may at last reach the isles of the blessed (cf. Plato *Gorg.* 523A-B).

CONCLUSION

285 Porphyrius *Life of Pythagoras* 19 (DK 14, 8a)   ἃ μὲν οὖν ἔλεγε τοῖς συνοῦσιν, οὐδὲ εἷς ἔχει φράσαι βεβαίως· καὶ γὰρ οὐδ' ἡ τυχοῦσα ἦν παρ' αὐτοῖς σιωπή. μάλιστα μέντοι γνώριμα παρὰ πᾶσιν ἐγένετο πρῶτον μὲν ὡς ἀθάνατον εἶναί φησι τὴν ψυχήν, εἶτα μεταβάλλουσαν εἰς ἄλλα γένη ζῴων, πρὸς δὲ τούτοις ὅτι κατὰ περιόδους τινὰς τὰ γενόμενά ποτε πάλιν γίνεται, νέον δ' οὐδὲν ἁπλῶς ἔστι καὶ ὅτι πάντα τὰ γινόμενα ἔμψυχα ὁμογενῆ δεῖ νομίζειν. φαίνεται γὰρ εἰς τὴν Ἑλλάδα τὰ δόγματα πρῶτος κομίσαι ταῦτα Πυθαγόρας.

> **285** What he said to his associates, nobody can say for certain; for silence with them was of no ordinary kind. Nonetheless the following became universally known: first, that he maintains that the soul is immortal; next, that it changes into other kinds of living things; also that events recur in certain cycles, and that nothing is ever absolutely new; and finally, that all living things should be regarded as akin. Pythagoras seems to have been the first to bring these beliefs into Greece.

285 (probably from Dicaearchus) sums up a picture of Pythagoras' teaching which our study of the sources has confirmed, although it leaves out one or two points on which we have laid some stress (notably ideas about number and *harmonia*), and includes some not so far mentioned, such as Pythagorean silence (cf. Aristotle fr. 192, DK 14, 7; Diog. L. VIII, 15) and belief in cyclical recurrence (cf. Eudemus *ap.* Simpl. *in Phys.* 732, 30, DK 58 B 34). Like the other sources it vouchsafes no hint of any reason Pythagoras may have offered for any of his doctrines. Like them it gives little ground for recognizing anything determinately philosophical or scientific in the content of his thought. Pythagoras, we must conclude, was a philosopher only to the extent that he was a sage (cf. p. 213 above). His contribution to Greek thought more broadly considered, however, was original, seductive and durable.

Parmenides of Elea

DATE AND LIFE

286 Plato *Parmenides* 127A (DK 29 A 11)   ἔφη δὲ δὴ ὁ Ἀντιφῶν λέγειν τὸν Πυθόδωρον ὅτι ἀφίκοιντό ποτε εἰς Παναθήναια τὰ μεγάλα Ζήνων τε καὶ Παρμενίδης. τὸν μὲν οὖν Παρμενίδην εὖ μάλα δὴ πρεσβύτην εἶναι, σφόδρα πολιόν, καλὸν δὲ κἀγαθὸν τὴν ὄψιν, περὶ ἔτη μάλιστα πέντε καὶ ἑξήκοντα· Ζήνωνα δὲ ἐγγὺς ἐτῶν τετταράκοντα τότε εἶναι, εὐμήκη δὲ καὶ χαρίεντα ἰδεῖν· καὶ λέγεσθαι αὐτὸν παιδικὰ τοῦ Παρμενίδου γεγονέναι. καταλύειν δὲ αὐτοὺς ἔφη παρὰ τῷ Πυθοδώρῳ ἐκτὸς τείχους ἐν Κεραμεικῷ· οἳ δὴ καὶ ἀφικέσθαι τόν τε Σωκράτη καὶ ἄλλους τινὰς μετ' αὐτοῦ πολλούς, ἐπιθυμοῦντας ἀκοῦσαι τῶν τοῦ Ζήνωνος γραμμάτων   τότε γὰρ αὐτὰ πρῶτον ὑπ' ἐκείνων κομισθῆναι   Σωκράτη δὲ εἶναι τότε σφόδρα νέον.

287 Diogenes Laertius IX, 21-3 (DK 28 A 1)   Ξενοφάνους δὲ διήκουσε Παρμενίδης Πύρητος Ἐλεάτης (τοῦτον[1] Θεόφραστος ἐν τῇ Ἐπιτομῇ Ἀναξιμάνδρου φησὶν ἀκοῦσαι). ὅμως δ' οὖν ἀκούσας καὶ Ξενοφάνους οὐκ ἠκολούθησεν αὐτῷ. ἐκοινώνησε δὲ καὶ Ἀμεινίᾳ Διοχαίτα τῷ Πυθαγορικῷ, ὡς ἔφη Σωτίων, ἀνδρὶ πένητι μέν, καλῷ δὲ καὶ ἀγαθῷ. ᾧ καὶ μᾶλλον ἠκολούθησε καὶ ἀποθανόντος ἡρῷον ἱδρύσατο γένους τε ὑπάρχων λαμπροῦ καὶ πλούτου, καὶ ὑπ' Ἀμεινίου, ἀλλ' οὐχ ὑπὸ Ξενοφάνους εἰς ἡσυχίαν προετράπη... ἤκμαζε δὲ κατὰ τὴν ἐνάτην καὶ ἑξηκοστὴν ὀλυμπιάδα... λέγεται δὲ καὶ νόμους θεῖναι τοῖς πολίταις, ὥς φησι Σπεύσιππος ἐν τῷ Περὶ φιλοσόφων.

> **286** According to Antiphon's account, Pythodorus said that Parmenides and Zeno once came to Athens for the Great Panathenaea. Parmenides was well advanced in years – about sixty-five – and very grey, but a fine-looking man. Zeno was then nearly forty, and tall and handsome; he was said to have been Parmenides' favourite. They were staying at Pythodorus' house outside the city-wall in the Ceramicus. Thither went Socrates, and several others with him, in the hope of hearing Zeno's treatise; for this was the first time Parmenides and Zeno had brought it to Athens. Socrates was still very young at the time.

287   Parmenides of Elea, son of Pyres, was a pupil of Xenophanes (and he, according to Theophrastus in his *Epitome*, of Anaximander). But though a pupil of Xenophanes, he did not follow him. He associated also, as Sotion recorded, with the Pythagorean Ameinias, son of Diochaitas, a poor but noble man, whom he preferred to follow. When Ameinias died Parmenides, who came of a distinguished family and was rich, built a shrine to him. It was by Ameinias rather than Xenophanes that he was converted to the contemplative life...He flourished in the sixty-ninth Olympiad [*sc.* 500 B.C.]...He is said also to have legislated for the citizens of Elea, as Speusippus records in his work *On the Philosophers*.

¹ Theophrastus' claim must have related to Xenophanes, but Diogenes writes as though Parmenides is in question.

Whether or not Parmenides and Zeno ever visited Athens and met there the young Socrates, Plato need not have been so precise about their respective ages. The fact that he gives these details strongly suggests that he is writing with chronological accuracy. Socrates was just over seventy when he was put to death in 399 B.C., which means that he was born in 470/469. If we assume that the words σφόδρα νέον, 'very young', mean that he was about 20, then the meeting might have taken place in 450 B.C. This places Parmenides' birth in about 515 B.C. and Zeno's in about 490 B.C. It is of course true that the date given by Diogenes, which he probably derived from Apollodorus, does not nearly square with this; but, as Burnet points out (*EGP*, 170), 'the date given by Apollodorus depends solely on that of the foundation of Elea (540 B.C.), which he had adopted as the *floruit* of Xenophanes. Parmenides is born in that year, just as Zeno is born in the year Parmenides "flourished".' Unsatisfactory as a late Platonic dialogue may be as evidence for chronology, it can hardly be doubted that it is more reliable than this.

The other items of information in **287** probably derive from early traditions, which may well be true, particularly Sotion's circumstantial tale. If it was a Pythagorean who converted Parmenides to philosophy, there is little sign that any preoccupation with Pythagorean ideas continued into his mature thought, except perhaps in his description of birth as something 'hateful' (**306**) and in the teaching about the fate of the soul which Simplicius briefly and allusively records in connexion with fr. 13 (*in Phys.* 39, 18). The notion that he was taught by Xenophanes was taken over by Theophrastus from Aristotle, who may in turn have derived it from a remark, perhaps

not entirely serious, in Plato's *Sophist* (see **163**, with the discussion on pp. 165ff.). Certainly there are echoes, not merely verbal, of Xenophanes' theology (**170** and **171**) and epistemology (**186–9**) in Parmenides. And Parmenides' decision to write his philosophy in hexameter verse may well have been prompted partly by the example of Xenophanes, who spent the latter part of his long career in Sicily and South Italy.

PARMENIDES' HEXAMETER POEM

Parmenides is credited with a single 'treatise' (Diog. L. 1, 16, DK 28 A 13). Substantial fragments of this work, a hexameter poem, survive, thanks largely to Sextus Empiricus (who preserved the proem) and Simplicius (who transcribed further extracts into his commentaries on Aristotle's *de caelo* and *Physics* 'because of the scarceness of the treatise'). Ancients and moderns alike are agreed upon a low estimation of Parmenides' gifts as a writer. He has little facility in diction, and the struggle to force novel, difficult and highly abstract philosophical ideas into metrical form frequently results in ineradicable obscurity, especially syntactic obscurity. On the other hand, in the less argumentative passages of the poem he achieves a kind of clumsy grandeur.

After the proem, the poem falls into two parts. The first expounds 'the tremorless heart of well-rounded Truth' (**288**, 29). Its argument is radical and powerful. Parmenides claims that in any enquiry there are two and only two logically coherent possibilities, which are exclusive – that the subject of the enquiry exists or that it does not exist. On epistemological grounds he rules out the second alternative as unintelligible. He then turns to abuse of ordinary mortals for showing by their beliefs that they never make the choice between the two ways 'is' and 'is not', but follow *both* without discrimination. In the final section of this first part he explores the one secure path, 'is', and proves in an astonishing deductive *tour de force* that if something exists, it cannot come to be or perish, change or move, nor be subject to any imperfection. Parmenides' arguments and his paradoxical conclusions had an enormous influence on later Greek philosophy; his method and his impact alike have rightly been compared to those of Descartes' *cogito*.

Parmenides' metaphysics and epistemology leave no room for cosmologies such as his Ionian predecessors had constructed nor indeed for any belief at all in the world our senses disclose to us. Nonetheless in the second (and much more scantily preserved) part

of the poem he gives an account of 'the opinions of mortals, in which there is no true conviction'. The status and motive of this account are obscure.

THE PROEM

288 Fr. 1 (Sextus *adv. math.* VII, 3 (lines 1–30); Simplicius *de caelo* 557, 25ff. (lines 28–32))

ἵπποι ταί με φέρουσιν ὅσον τ' ἐπὶ θυμὸς ἱκάνοι
πέμπον, ἐπεί μ' ἐς ὁδὸν βῆσαν πολύφημον ἄγουσαι
δαίμονος, ἣ κατὰ πάντ' ἄστη[1] φέρει εἰδότα φῶτα·
τῇ φερόμην· τῇ γάρ με πολύφραστοι φέρον ἵπποι
5 ἅρμα τιταίνουσαι, κοῦραι δ' ὁδὸν ἡγεμόνευον.
ἄξων δ' ἐν χνοίῃσιν ἵει σύριγγος ἀυτὴν
αἰθόμενος (δοιοῖς γὰρ ἐπείγετο δινωτοῖσιν
κύκλοις ἀμφοτέρωθεν), ὅτε σπερχοίατο πέμπειν
Ἡλιάδες κοῦραι, προλιποῦσαι δώματα Νυκτὸς
10 εἰς φάος, ὠσάμεναι κράτων ἄπο χερσὶ καλύπτρας.
   ἔνθα πύλαι Νυκτός τε καὶ Ἤματός εἰσι κελεύθων,
καί σφας ὑπέρθυρον ἀμφὶς ἔχει καὶ λάινος οὐδός·
αὐταὶ δ' αἰθέριαι πλῆνται μεγάλοισι θυρέτροις·
τῶν δὲ Δίκη πολύποινος ἔχει κληῖδας ἀμοιβούς.
15 τὴν δὴ παρφάμεναι κοῦραι μαλακοῖσι λόγοισιν
πεῖσαν ἐπιφραδέως, ὥς σφιν βαλανωτὸν ὀχῆα
ἀπτερέως ὤσειε πυλέων ἄπο· ταὶ δὲ θυρέτρων
χάσμ' ἀχανὲς ποίησαν ἀναπτάμεναι πολυχάλκους
ἄξονας ἐν σύριγξιν ἀμοιβαδὸν εἰλίξασαι
20 γόμφοις καὶ περόνῃσιν ἀρηρότε· τῇ ῥα δι' αὐτέων
ἰθὺς ἔχον κοῦραι κατ' ἀμαξιτὸν ἅρμα καὶ ἵππους.
   καί με θεὰ πρόφρων ὑπεδέξατο, χεῖρα δὲ χειρὶ
δεξιτερὴν ἕλεν, ὧδε δ' ἔπος φάτο καί με προσηύδα·
ὦ κοῦρ' ἀθανάτοισι συνάορος ἡνιόχοισιν,
25 ἵπποις ταί σε φέρουσιν ἱκάνων ἡμέτερον δῶ,
χαῖρ', ἐπεὶ οὔτι σε μοῖρα κακὴ προὔπεμπε νέεσθαι
τήνδ' ὁδόν (ἦ γὰρ ἀπ' ἀνθρώπων ἐκτὸς πάτου ἐστίν),
ἀλλὰ θέμις τε δίκη τε. χρεὼ δέ σε πάντα πυθέσθαι
ἠμὲν Ἀληθείης εὐκυκλέος[2] ἀτρεμὲς ἦτορ
30 ἠδὲ βροτῶν δόξας, ταῖς οὐκ ἔνι πίστις ἀληθής.
ἀλλ' ἔμπης καὶ ταῦτα μαθήσεαι, ὡς τὰ δοκοῦντα
χρῆν δοκίμως εἶναι διὰ παντὸς πάντα περῶντα.[3]

[1] For the conjectural reading ἄστη see A. H. Coxon, *CQ* N.S. 18 (1968), 69; A. P. D. Mourelatos, *The Route of Parmenides* (New Haven, Conn., 1970), 22 n. 31.

[2] εὐκυκλέος Simplicius, defended by Diels, *Parmenides Lehrgedicht* (Berlin, 1897), 54–7; εὐπειθέος Sextus (*lectio facilior*) has some contemporary advocates, e.g. Mourelatos, *Route*, 154–7.
[3] περῶντα Simpl. A; περ ὄντα DEF.

288 The mares that carry me as far as my heart ever aspires sped me on, when they had brought and set me on the far-famed road of the god, which bears the man who knows over all cities. On that road was I borne, for that way the wise horses bore me, straining at the chariot, and maidens led the way. And the axle in the naves gave out the whistle of a pipe, blazing, for it was pressed hard on either side by the two well-turned wheels as the daughters of the Sun made haste to escort me, having left the halls of Night for the light, and having thrust the veils from their heads with their hands.

There are the gates of the paths of Night and Day, and a lintel and a stone threshold enclose them. They themselves, high in the air, are blocked with great doors, and avenging Justice holds the alternate bolts. Her the maidens beguiled with gentle words and cunningly persuaded to push back swiftly from the gates the bolted bar. And the gates created a yawning gap in the door frame when they flew open, swinging in turn in their sockets the bronze-bound pivots made fast with dowels and rivets. Straight through them, on the broad way, did the maidens keep the horses and the chariot.

And the goddess greeted me kindly, and took my right hand in hers, and addressed me with these words: 'Young man, you who come to my house in the company of immortal charioteers with the mares which bear you, greetings. No ill fate has sent you to travel this road – far indeed does it lie from the steps of men – but right and justice. It is proper that you should learn all things, both the unshaken heart of well-rounded truth, and the opinions of mortals, in which there is no true reliance. But nonetheless you shall learn these things too, how what is believed would have to be assuredly, pervading all things throughout.'

Parmenides' chief purpose in these lines is to lay claim to knowledge of a truth not attained by the ordinary run of mortals. The claim is dramatically expressed by means of motifs deriving largely from Homer and Hesiod, in matching diction and metre. It is sometimes suggested that Parmenides' journey to the goddess recalls the magical journeys of shamans. But as was observed above (p. 229) the evidence for a shamanistic tradition in early Greece is doubtful. Sextus, followed by many modern scholars, took the journey to be an allegory of enlightenment, a translation from the ignorance of Night to the knowledge of Light. But Parmenides already begins his

journey in a blaze of light, as befits one who 'knows'. The point of
the narration is suggested rather by the obstacle that has to be passed
and by the destination, the two things (apart from description of the
chariot and its movement) upon which the poet dwells. Parmenides
seeks to leave the familiar world of ordinary experience where night
and day alternate, an alternation governed – as Anaximander would
have agreed (110) – by law or 'justice'. He makes instead for a
path of thought ('a highway') which leads to a transcendent com-
prehension both of changeless truth and of mortal opinion. No less
important is his message about the obstacle to achievement of this
goal: the barrier to escape from mortal opinion is formidable, but
it yields to 'gentle argument'.

The motifs of the gates of Day and Night and of divine revelation,
modelled on materials in Hesiod's *Theogony*, are well chosen to convey
both the immense gulf which in Parmenides' view separates rational
enquiry from common human understanding and the unexpectedness
of what his own reason has disclosed to him (cf. for both these points
Heraclitus, e.g. 205, 206, 210). And religious revelation suggests both
the high seriousness of philosophy and an appeal to authority – not,
however, an authority beyond dispute: 'Judge by reason my strife-
encompassed refutation' says the goddess later (294).

289 Fr. 5, Proclus *in Parm.* 1, p. 708, 16 Cousin
...ξυνὸν δέ μοί ἐστιν
ὁππόθεν ἄρξωμαι· τόθι γὰρ πάλιν ἵξομαι αὖθις.

289 It is a common point from which I start; for there again and
again I shall return.

289 fits neatly after 288 and immediately before 291, at any rate if
its point is that all the proofs of 296–9 take the choice specified in
291 as their common foundation (cf. also 294).[1]

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[1] With 289 may be compared 290 Heraclitus fr. 103, Porphyrius *in Iliadem* XIV,
200 ξυνὸν ἀρχὴ καὶ πέρας ἐπὶ κύκλου. *(In a circle beginning and end are common.)*
But despite his talk of 'well-rounded truth' Parmenides need not be implying
here that his own thought is circular.

TRUTH

(i) *The choice*

291 Fr. 2, Proclus *in Tim.* 1, 345, 18; Simplicius *in Phys.* 116, 28 (lines
3–8)

εἰ δ' ἄγ' ἐγὼν ἐρέω, κόμισαι δὲ σὺ μῦθον ἀκούσας,
αἵπερ ὁδοὶ μοῦναι διζήσιός εἰσι νοῆσαι·
ἡ μὲν ὅπως ἔστιν τε καὶ ὡς οὐκ ἔστι μὴ εἶναι,
πειθοῦς ἐστι κέλευθος ('Αληθείῃ γὰρ ὀπηδεῖ),
5 ἡ δ' ὡς οὐκ ἔστιν τε καὶ ὡς χρεών ἐστι μὴ εἶναι,
τὴν δή τοι φράζω παναπευθέα ἔμμεν ἀταρπόν·
οὔτε γὰρ ἄν γνοίης τό γε μὴ ἐόν (οὐ γὰρ ἀνυστόν)
οὔτε φράσαις.

291 Come now, and I will tell you (and you must carry my
account away with you when you have heard it) the only ways
of enquiry that are to be thought of. The one, that [it] is and that
it is impossible for [it] not to be, is the path of Persuasion (for she
attends upon Truth); the other, that [it] is not and that it is
needful that [it] not be, that I declare to you is an altogether
indiscernible track: for you could not know what is not – that
cannot be done – nor indicate it.

The goddess begins by specifying the only ways of enquiry which
should be contemplated. They are plainly assumed to be logically
exclusive: if you take the one, you thereby fail to take the other. No
less plainly they are exclusive because they are contradictories (cf.
296, 16: 'the decision on these things lies in this: it is or it is not').[1]
What is the '[it]' which our translation has supplied as grammatical
subject to Parmenides' verb *estin*? Presumably, any subject of enquiry
whatever – in any enquiry you must assume either that your subject
is or that it is not. Interpretation of *estin* itself, here rendered
awkwardly but neutrally as 'is', is more difficult. The two obvious
paraphrases are the existential ('exists') and the predicative ('is
[something or other]'). To try to decide between them we need to
consider the arguments in which *estin* most prominently figures,
particularly the argument against the negative way of enquiry in
lines 5 to 8 of 291.

Unfortunately consideration of this argument is not decisive.
Certainly it appears impossible to know or point out what does not
exist: nobody can be acquainted with Mr Pickwick or point him out
to anyone else. But a predicative reading of Parmenides' premiss is
also plausible: it seems impossible to know or point out what is not
something or other, i.e. what possesses no attributes and has no
predicates true of it. Clearer is 296, 5–21, where an analogous
premiss – 'it is not to be said nor thought that it is not', lines 8–9 – is
used to argue against the possibility of coming to be or perishing. The
point Parmenides makes is that if something comes to be, then it must

previously not have been – and at that time it would have been true to say of it 'it is not'; but the premiss forbids saying just that; so there can be no coming into being. Now 'come to be' in this context is plainly to be construed as 'come to exist'. Here, then, 'is not' means 'does not exist'.

At **296**, 10, however, Parmenides goes on immediately to refer to what does not exist (hypothetically, of course) as 'the nothing' (cf. **293**, 2). This suggests that he understands non-existence as *being nothing at all*, i.e. as having no attributes; and so that for him, to exist is in effect *to be something or other*. When later (e.g. **297**, 22–5; **299**, 46–8) he uses the participle *eon*, 'being', it is much easier to construe it as 'reality' or 'the real' than as barely designating existence. And what makes something real is surely that it has some predicate true of it (e.g. 'occupies space'). If this line of interpretation is correct, Parmenides' use of *estin* is simultaneously existential and predicative (as KR held), but not therefore (as KR concluded) confused.

From the unknowableness of what does not exist Parmenides concludes directly that the negative way is 'indiscernible', i.e. that no clear thought is expressed by a negative existential statement. We might put the point thus: 'Take any subject of enquiry you like (e.g. Mr Pickwick). Then the proposition "Mr Pickwick does not exist" fails to express a genuine thought at all. For if it were a genuine thought, it would have to be possible to be acquainted with its subject, Mr Pickwick. But that possibility does not obtain unless Mr Pickwick exists – which is exactly what the proposition denies.' This line of argument, in one guise or another, has exercised a powerful attraction on many philosophers, from Plato to Russell. Its conclusion is paradoxical, but like all good paradoxes it forces us to examine more deeply our grasp of the concepts it employs – notably in this case the relations between meaning, reference and existence.[2]

[1] A difficulty: Parmenides further specifies the first way as 'it is impossible for [it] not to be' and the second as 'it is needful that [it] not be', which are not contradictories. A solution: perhaps these further specifications constitute not characterizations of the two ways, but indications of their incompatibility. Line 3 will be saying: the first way is '[it] is'; and it follows necessarily that, if something is, it is not the case that it is not. So *mutatis mutandis* for line 5.

[2] Editors often complete the half-line **291**, 8, with a fragment known only in quite different sources: **292** Fr. 3, Clement *Strom.* VI, 23; Plotinus V, 1, 8 τὸ γὰρ αὐτὸ νοεῖν ἐστιν τε καὶ εἶναι. *(For the same thing is there both to be thought of and to be.)* If thus translated (but some render: 'Thought and being are the same'), it does sound as though it may fit here; **293**, 1 shows that Parmenides explicitly deploys considerations about what can be thought, not just what can be known, in the context of argument against the negative way. But if so it is surprising that neither Proclus nor Simplicius quotes it at the end of **291**. And it is hard to see

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what contribution it adds to the reasoning of **291**, 6–8. (If *noein* meant 'know' here, as e.g. C. H. Kahn (*Review of Metaphysics* 22 (1968–9), 700–24) thinks, then perhaps **292** would simply be another way of putting **291**, 7–8. But *noein* is used by Parmenides in parallel with simple verbs of saying (**293**, 1; **296**, 8; cf. *anōnumon*, **296**, 17), and so must be translated 'think'.)

(ii) *Mortal error*

293 Fr. 6, Simplicius *in Phys.* 86, 27–8; 117, 4–13

χρὴ τὸ λέγειν τε νοεῖν τ' ἐὸν ἔμμεναι· ἔστι γὰρ εἶναι,
μηδὲν δ' οὐκ ἔστιν· τά σ' ἐγὼ φράζεσθαι ἄνωγα.
πρώτης γάρ σ' ἀφ' ὁδοῦ ταύτης διζήσιος ⟨εἴργω⟩,
αὐτὰρ ἔπειτ' ἀπὸ τῆς, ἣν δὴ βροτοὶ εἰδότες οὐδὲν
πλάττονται, δίκρανοι· ἀμηχανίη γὰρ ἐν αὐτῶν
στήθεσιν ἰθύνει πλακτὸν νόον· οἱ δὲ φοροῦνται
κωφοὶ ὁμῶς τυφλοί τε, τεθηπότες, ἄκριτα φῦλα,
οἷς τὸ πέλειν τε καὶ οὐκ εἶναι ταὐτὸν νενόμισται
κοὐ ταὐτόν, πάντων δὲ παλίντροπός ἐστι κέλευθος.

293 What is there to be said and thought must needs be: for it is there for being, but nothing is not. I bid you ponder that, for this is the first way of enquiry from which I hold you back, but then from that on which mortals wander knowing nothing, two-headed; for helplessness guides the wandering thought in their breasts, and they are carried along, deaf and blind at once, dazed, undiscriminating hordes, who believe that to be and not to be are the same and not the same; and the path taken by them all is backward-turning.

Parmenides' summary of his case against the negative way (lines 1–3), which says in effect that any object of thought must be a real object, confirms despite its obscurity that his rejection of 'is not' is motivated by a concern about what is a possible content for a genuine thought. It is followed by a warning against a second mistaken way, identified as the way of enquiry pursued by mortals. No mention of this third way was made in **291**, and the reason is not far to seek. The goddess was there specifying logically coherent alternatives between which rational enquirers must decide. The third way is simply the path you will find yourself following if, like the generality of mortals, you do not take that decision (**293**, 7) through failure to use your critical powers (**293**, 6–7). You will find yourself saying or implying both that a thing is and that it is not (e.g. by acknowledging change and coming into existence); and so you will wander helplessly from one of the ways distinguished in **291** to the other. Hence your

steps will be 'backward-turning', i.e. contradictory. Of course, you will recognize that 'is' and 'is not' are *not* the same. But in failing to decide between them you will treat them as though they were the same.

293 was probably followed, after an interval, by a fragment in which the goddess bids Parmenides to make up his mind (unlike the mortals dismissed in **293**) about her refutation of the second way:

294 Fr. 7, Plato *Sophist* 242A (lines 1–2); Sextus *adv. math.* VII, 114 (lines 2–6)

> οὐ γὰρ μήποτε τοῦτο δαμῆ εἶναι μὴ ἐόντα·
> ἀλλὰ σὺ τῆσδ' ἀφ' ὁδοῦ διζήσιος εἶργε νόημα
> μηδέ σ' ἔθος πολύπειρον ὁδὸν κατὰ τήνδε βιάσθω
> νωμᾶν ἄσκοπον ὄμμα καὶ ἠχήεσσαν ἀκουήν
> 5 καὶ γλῶσσαν, κρῖναι δὲ λόγῳ πολύδηριν ἔλεγχον
> ἐξ ἐμέθεν ῥηθέντα.

294 For never shall this be forcibly maintained, that things that are not are, but you must hold back your thought from this way of enquiry, nor let habit, born of much experience, force you down this way, by making you use an aimless eye or an ear and a tongue full of meaningless sound: judge by reason the strife-encompassed refutation spoken by me.

(iii) *Signs of truth*

295 Fr. 8, 1–4, Simplicius *in Phys.* 78, 5; 145, 1

> μόνος δ' ἔτι μῦθος ὁδοῖο
> λείπεται ὡς ἔστιν· ταύτῃ δ' ἐπὶ σήματ' ἔασι
> πολλὰ μάλ', ὡς ἀγένητον ἐὸν καὶ ἀνώλεθρόν ἐστιν,
> οὖλον μουνογενές τε καὶ ἀτρεμὲς ἠδὲ τέλειον.[1]

[1] ἠδ' ἀτέλεστον Simplicius: for the emendation see G. E. L. Owen in *Studies in Presocratic Philosophy* II, ed. R. E. Allen and D. J. Furley (London, 1975), 76–7, who also convincingly rejects KR's reading (taken over from DK): ἔστι γὰρ οὐλομελές τε καὶ ἀτρεμές... (Plutarch).

295 There still remains just one account of a way, that it is. On this way there are very many signs, that being uncreated and imperishable it is, whole and of a single kind and unshaken and perfect.

If we must avoid the way 'is not', our only hope as enquirers lies in pursuit of the way 'is'. At first sight it would appear that if we embrace that alternative, there open for us limitless possibilities of exploration: the requirement that any subject we investigate must

exist seems to impose scarcely any restriction on what we might be able to discover about it; and the argument that what is available to be thought of must exist (**293**, 1–2) makes it look as though the range of possible subjects of investigation is enormous, including centaurs and chimaeras as well as rats and restaurants. But in the course of a mere 49 lines Parmenides succeeds in reducing this infinity of possibilities to exactly one. For the 'signs' programmatically listed in **295** in fact constitute further formal requirements which any subject of enquiry must satisfy; and they impose formidable constraints (note the metaphor of chains in **296** and **298** below) on the interpretation of what is compatible with saying of something that it exists. The upshot of Parmenides' subsequent argument for these requirements is a form of monism: it certainly transpires that everything there is must have one and the same character; and it is doubtful whether in fact anything could have that character except reality as a whole.

(iii) (a) *Uncreated and imperishable*

296 Fr. 8, 5–21, Simplicius *in Phys.* 78, 5; 145, 5 (continues **295**)

> 5 οὐδέ ποτ' ἦν οὐδ' ἔσται, ἐπεὶ νῦν ἐστιν ὁμοῦ πᾶν,
> ἕν, συνεχές· τίνα γὰρ γένναν διζήσεαι αὐτοῦ;
> πῆ πόθεν αὐξηθέν; οὐδ' ἐκ μὴ ἐόντος ἐάσσω
> φάσθαι σ' οὐδὲ νοεῖν· οὐ γὰρ φατὸν οὐδὲ νοητὸν
> ἔστιν ὅπως οὐκ ἔστι. τί δ' ἄν μιν καὶ χρέος ὦρσεν
> 10 ὕστερον ἢ πρόσθεν, τοῦ μηδενὸς ἀρξάμενον, φῦν;
> οὕτως ἢ πάμπαν πελέναι χρεών ἐστιν ἢ οὐχί.
> οὐδέ ποτ' ἐκ μὴ[1] ἐόντος ἐφήσει πίστιος ἰσχὺς
> γίγνεσθαί τι παρ' αὐτό· τοῦ εἵνεκεν οὔτε γενέσθαι
> οὔτ' ὄλλυσθαι ἀνῆκε Δίκη χαλάσασα πέδῃσιν,
> 15 ἀλλ' ἔχει· ἡ δὲ κρίσις περὶ τούτων ἐν τῷδ' ἐστίν·
> ἔστιν ἢ οὐκ ἔστιν· κέκριται δ' οὖν, ὥσπερ ἀνάγκη,
> τὴν μὲν ἐᾶν ἀνόητον ἀνώνυμον (οὐ γὰρ ἀληθὴς
> ἔστιν ὁδός), τὴν δ' ὥστε πέλειν καὶ ἐτήτυμον εἶναι.
> πῶς δ' ἂν ἔπειτα πέλοι τὸ ἐόν; πῶς δ' ἄν κε γένοιτο;
> 20 εἰ γὰρ ἔγεντ', οὐκ ἔστ', οὐδ' εἴ ποτε μέλλει ἔσεσθαι.
> τὼς γένεσις μὲν ἀπέσβεσται καὶ ἄπυστος ὄλεθρος.

[1] Many scholars follow Karsten and Reinhardt in emending μή to τοῦ.

296 It never was nor will be, since it is now, all together, one, continuous. For what birth will you seek for it? How and whence did it grow? I shall not allow you to say nor to think from not being: for it is not to be said nor thought that it is not; and what

need would have driven it later rather than earlier, beginning from the nothing, to grow? Thus it must either be completely or not at all. Nor will the force of conviction allow anything besides it to come to be ever from not being. Therefore Justice has never loosed her fetters to allow it to come to be or to perish, but holds it fast. And the decision about these things lies in this: it is or it is not. But it has in fact been decided, as is necessary, to leave the one way unthought and nameless (for it is no true way), but that the other is and is genuine. And how could what is be in the future? How could it come to be? For if it came into being, it is not: nor is it if it is ever going to be in the future. Thus coming to be is extinguished and perishing unheard of.

These lines (as the conclusion, line 21, shows) are designed to prove that what is can neither come to be nor perish.[1] Parmenides is content to marshal explicit arguments only against coming into being, taking it as obvious that a parallel case against perishing could be constructed by parity of reasoning. He advances two principal considerations, corresponding to the dual interrogative: 'How and whence did it grow?' (line 7). He assumes that the only reasonable answer to 'whence?' could be: 'from not existing', which he rejects as already excluded by his argument against 'is not' (lines 7–9). In his treatment of 'how?' he appeals to the Principle of Sufficient Reason. He assumes that anything which comes to be must contain within it some principle of development ('need', χρέος) sufficient to explain its generation. But if something does not exist, how can it contain any such principle?

[1] In lines 5–6 Parmenides appears to go farther than this. The statement 'it never was nor will be, since it is now, all together' seems to claim not merely that what is will not *come to exist*, but that it will not exist *at all* in the future. Probably what Parmenides means to ascribe to what is is existence in an eternal present not subject to temporal distinctions of any sort. It is very unclear how he hoped to ground this conclusion in the arguments of **296**.

(iii) (b) *One and continuous*

297   Fr. 8, 22–5, Simplicius *in Phys.* 144, 29 (continues **296**)
οὐδὲ διαιρετόν ἐστιν, ἐπεὶ πᾶν ἐστιν ὁμοῖον·
οὐδέ τι τῇ μᾶλλον, τό κεν εἴργοι μιν συνέχεσθαι,
οὐδέ τι χειρότερον, πᾶν δ' ἔμπλεόν ἐστιν ἐόντος.
τῷ ξυνεχὲς πᾶν ἐστιν· ἐὸν γὰρ ἐόντι πελάζει.

297   Nor is it divided, since it all exists alike; nor is it more here and less there, which would prevent it from holding together, but

it is all full of being. So it is all continuous: for what is draws near to what is.

Does Parmenides have in mind spatial or temporal continuity here? He surely means to show that what is is continuous in any dimension it occupies; but **296** has probably already denied that it exists in time. Is the point simply that any subject of enquiry must be characterized by internal continuity, or is Parmenides more ambitiously claiming that all reality is one? It is hard to resist the impression that he intends the stronger thesis, although why he thinks himself entitled to assert it is unclear (perhaps he would rely, for example, on the identity of indiscernibles: there is no basis for distinguishing anything that is from anything else that is). The same ambiguity affects **298** and **299**, and the same verdict suggests itself.

(iii) (c) *Unchangeable*

298   Fr. 8, 26–31, Simplicius *in Phys.* 145, 27 (continues **297**)
αὐτὰρ ἀκίνητον μεγάλων ἐν πείρασι δεσμῶν
ἔστιν ἄναρχον ἄπαυστον, ἐπεὶ γένεσις καὶ ὄλεθρος
τῆλε μάλ' ἐπλάχθησαν, ἀπῶσε δὲ πίστις ἀληθής.
ταὐτόν τ' ἐν ταὐτῷ τε μένον καθ' ἑαυτό τε κεῖται
χοὔτως ἔμπεδον αὖθι μενεῖ· κρατερὴ γὰρ Ἀνάγκη
πείρατος ἐν δεσμοῖσιν ἔχει, τό μιν ἀμφὶς ἐέργει.
30

298   But changeless within the limits of great bonds it exists without beginning or ceasing, since coming to be and perishing have wandered very far away, and true conviction has thrust them off. Remaining the same and in the same place it lies on its own and thus fixed it will remain. For strong Necessity holds it within the bonds of a limit, which keeps it in on every side.

Lines 26–8 suggest the following argument:
      (1) It is impossible for what is to come into being or to perish.
So   (2) it exists unchangeably within the bonds of a limit.
It is then natural to read lines 29–31 as spelling out the content of (2) more fully. So construed, they indicate a more complex inference from (1):
      (2a) it is held within the bonds of a limit which keeps it in on every side.
So   (2b) it remains the same and in the same place and stays on its own.
The notion of *limit* Parmenides is employing here is obscure. It is easiest to understand it as spatial limit; and then (2b) follows

intelligibly from (2a). But why on this interpretation should (2a) follow from (1)? Perhaps rather 'within limits' is a metaphorical way of talking about *determinacy*. In (2a) Parmenides will then be saying that what is has no potentiality for being different – at any time or in any respect – from what it is at present.

(iii) (d) *Perfect*

299 Fr. 8, 32–49, Simplicius *in Phys.* 146, 5 (continues **298**)

οὕνεκεν[1] οὐκ ἀτελεύτητον τὸ ἐὸν θέμις εἶναι·
ἔστι γὰρ οὐκ ἐπιδευές· [μὴ] ἐὸν δ' ἂν παντὸς ἐδεῖτο.
ταὐτὸν δ' ἔστι νοεῖν τε καὶ οὕνεκεν ἔστι νόημα.
35 οὐ γὰρ ἄνευ τοῦ ἐόντος, ἐν ᾧ πεφατισμένον ἐστίν,
εὑρήσεις τὸ νοεῖν· οὐδὲν γὰρ ⟨ἢ⟩ ἔστιν ἢ ἔσται
ἄλλο πάρεξ τοῦ ἐόντος, ἐπεὶ τό γε Μοῖρ' ἐπέδησεν
οὖλον ἀκίνητόν τ' ἔμεναι· τῷ πάντ' ὀνόμασται,[2]
ὅσσα βροτοὶ κατέθεντο πεποιθότες εἶναι ἀληθῆ,
40 γίγνεσθαί τε καὶ ὄλλυσθαι, εἶναί τε καὶ οὐχί,
καὶ τόπον ἀλλάσσειν διά τε χρόα φανὸν ἀμείβειν.
αὐτὰρ ἐπεὶ πεῖρας πύματον, τετελεσμένον ἐστί,
πάντοθεν εὐκύκλου σφαίρης ἐναλίγκιον ὄγκῳ,
μεσσόθεν ἰσοπαλὲς πάντη· τὸ γὰρ οὔτε τι μεῖζον
45 οὔτε τι βαιότερον πελέναι χρεόν ἐστι τῇ ἢ τῇ.
οὔτε γὰρ οὐκ ἐὸν ἔστι, τό κεν παύοι μιν ἱκνεῖσθαι
εἰς ὁμόν, οὔτ' ἐὸν ἔστιν ὅπως εἴη κεν ἐόντος
τῇ μᾶλλον τῇ δ' ἧσσον, ἐπεὶ πᾶν ἐστιν ἄσυλον·
οἵ γὰρ πάντοθεν ἷσον, ὁμῶς ἐν πείρασι κύρει.

[1] For οὕνεκεν as 'therefore' cf. τοῦ εἵνεκεν, **296**, 13. 'Because' is the more usual meaning in epic usage, and is preferred by many here.
[2] ὀνόμασται Simplicius (*in Phys.* 87, 1) E; ὄνομα ἔσται DF. Cf. Mourelatos, *Route*, 180–5; M. F. Burnyeat, *Philosophical Review* 91 (1982), 19 n. 32.

299 Therefore it is right that what is should not be imperfect; for it is not deficient – if it were it would be deficient in everything. The same thing is there to be thought and is why there is thought. For you will not find thinking without what is, in all that has been said.[1] For there neither is nor will be anything else besides what is, since Fate fettered it to be whole and changeless. Therefore it has been named all the names which mortals have laid down believing them to be true – coming to be and perishing, being and not being, changing place and altering in bright colour. But since there is a furthest limit, it is perfected, like the bulk of a ball well-rounded on every side, equally balanced in every direction from the centre. For it needs must not be somewhat more or

somewhat less here or there. For neither is it non-existent, which would stop it from reaching its like, nor is it existent in such a way that there would be more being here, less there, since it is all inviolate: for being equal to itself on every side, it lies uniformly within its limits.

[1] Or: 'in which thinking is expressed'.

This long and difficult final section of the *Truth* combines a summing-up of the whole first part of the poem with a derivation of the perfection of reality from its determinacy (argued fully in lines 42–9, which are often – as in KR – regarded as presenting a train of thought quite distinct from both lines 32–3 (usually reckoned part of **298**) and lines 34–41). Parmenides first briefly sketches his main argument that what is, if limited or determinate, cannot be deficient, and if not deficient, cannot be imperfect (32–3). Then he takes us right back to his original starting-point: if you have a thought about some object of enquiry, you must be thinking about something that is (34–6). You might suppose you can also think about something besides what already is coming into being. But the argument has shown that what is exists completely and changelessly – it is never in process of coming to be (36–8). So expressions like 'comes to be' and 'changes' employed by mortals can in fact refer (despite their mistaken intentions) only to complete and changeless reality (38–41). Indeed from the fact that what is is limited or determinate, we can infer its perfection (42–4). For its determinacy excludes not just the possibility that it is subject to coming into being and change but any kind of deficiency in its reality (44–9).

Once again we face a puzzling choice between a literal and a metaphorical interpretation of 'limit'. Once again what the argument seems to require is only some form of determinacy (cf. **296**, 14–15). Once again the spatial connotations of the word are hard to forget – indeed they are pressed upon our attention (NB the epithet *pumaton*, '*furthest* limit'). And one can well imagine Parmenides concluding that if reality is both spatially extended and determinate, it must be limited in spatial extension. In the end we must settle for both the literal and the metaphorical reading of the term.

Pursuit of the way 'is' thus leads to a conclusion as astonishing as the result of consideration of 'is not'. Parmenides' final position in **299** is in fact doubly paradoxical. He not only denies the logical coherence of everything we believe about the world, but in making all reality a finite sphere introduces a notion whose own logical coherence must in turn be doubted.[1]

¹ Must there not be real empty space beyond the limits of the sphere if they are to function as limits? This objection might persuade one that Parmenides could not have held reality to be a sphere, were it not that what leads us to think he must have believed that is his apparently uncritical exploitation of the metaphor of limit (i.e. of what we would take to be a metaphor).

MORTAL OPINIONS

(i) *The status of Parmenides' account*

300 Simplicius *in Phys.* 30, 14 (continuation of **299**, cf. *in Phys.* 146, 23) μετελθὼν δὲ ἀπὸ τῶν νοητῶν ἐπὶ τὰ αἰσθητὰ ὁ Παρμενίδης, ἤτοι ἀπὸ ἀληθείας, ὡς αὐτός φησιν, ἐπὶ δόξαν, ἐν οἷς λέγει (fr. 8, l. 50) ἐν τῷ σοι παύω πιστὸν λόγον ἠδὲ νόημα
        ἀμφὶς ἀληθείης· δόξας δ' ἀπὸ τοῦδε βροτείας
        μάνθανε κόσμον ἐμῶν ἐπέων ἀπατηλὸν ἀκούων.

300 Parmenides effects the transition from the objects of reason to the objects of sense, or, as he himself puts it, from truth to opinion, when he writes: 'Here I end my trustworthy discourse and thought concerning truth; henceforth learn the beliefs of mortal men, listening to the deceitful ordering of my words.'

The goddess's account will doubtless be unreliable and deceitful principally because it presents beliefs which are themselves utterly confused as though they were in order (cf. **293**). The second half of the poem did not simply describe or analyse current opinions about the cosmos. It contained an elaborate and distinctive theogony and cosmology reminiscent in parts of Hesiod, in parts of Anaximander. Parmenides' object, as we shall see, is to present mortal opinions not as they actually are, but as they might be at best. But that makes the account deceitful in a further sense: in effect it provides a deceptively plausible (although not genuinely convincing) representation of reality.

To understand better the connexion between Parmenides' cosmology and mortal opinions in general, we need to consider the last two lines of **301**:¹

301 Fr. 1, 28–32, Simplicius *de caelo* 557, 25 (from **288**)
        χρεὼ δέ σε πάντα πυθέσθαι
        ἠμὲν Ἀληθείης εὐκυκλέος ἀτρεμὲς ἦτορ
30   ἠδὲ βροτῶν δόξας, ταῖς οὐκ ἔνι πίστις ἀληθής.
        ἀλλ' ἔμπης καὶ ταῦτα μαθήσεαι, ὡς τὰ δοκοῦντα
        χρῆν δοκίμως εἶναι διὰ παντὸς πάντα περῶντα.

301 It is proper that you should learn all things, both the unshaken heart of well-rounded truth, and the opinions of mortals, in which there is no true reliance. But nonetheless you shall learn these things too, how what is believed would have to be assuredly, pervading all things throughout.

Lines 31–2 are naturally interpreted as stating the condition upon which the genuine existence of the objects of mortal belief may be secured, viz. that they completely pervade all things. This condition is closely akin to the requirement of the *Truth* that any subject of enquiry exist completely. What Parmenides takes to be false in lines 31–2 is not the goddess's specification of the condition, but her claim that it can be satisfied by objects of mortal belief. It follows that the cosmology of the second part of the poem should be read as a reinterpretation of the world mortals believe in, in terms which explain it (falsely but attractively) as satisfying the pervasiveness condition.

¹ Text, translation and interpretation are vexed: see Mourelatos, *Route*, ch. VIII. The main problem is that lines 31–2 appear to attempt to save the credit of mortal opinions, in flagrant contradiction with the assertion of line 30 that there is no truth in them. The solution is to read the content of the teaching of lines 31–2 as a lie, as indeed it is explicitly presented in **300** (cf. Hesiod *Theog.* 26–7, the model for **301**).

(ii) *Light and night*

302 Fr. 8, 53–61, Simplicius *in Phys.* 38, 28 (continues **300**)
        μορφὰς γὰρ κατέθεντο δύο γνώμας ὀνομάζειν,
        τῶν μίαν οὐ χρεών ἐστιν – ἐν ᾧ πεπλανημένοι εἰσίν –
        τἀντία δ' ἐκρίναντο δέμας καὶ σήματ' ἔθεντο
55   χωρὶς ἀπ' ἀλλήλων, τῇ μὲν φλογὸς αἰθέριον πῦρ,
        ἤπιον ὄν, μέγ' ἐλαφρόν, ἑωυτῷ πάντοσε τωὐτόν,
        τῷ δ' ἑτέρῳ μὴ τωὐτόν· ἀτὰρ κἀκεῖνο κατ' αὐτὸ
        τἀντία νύκτ' ἀδαῆ, πυκινὸν δέμας ἐμβριθές τε.
60   τόν σοι ἐγὼ διάκοσμον ἐοικότα πάντα φατίζω,
        ὡς οὐ μή ποτέ τίς σε βροτῶν γνώμη παρελάσσῃ.

303 Fr. 9, Simplicius *in Phys.* 180, 8
        αὐτὰρ ἐπειδὴ πάντα φάος καὶ νὺξ ὀνόμασται
        καὶ τὰ κατὰ σφετέρας δυνάμεις ἐπὶ τοῖσί τε καὶ τοῖς,
        πᾶν πλέον ἐστὶν ὁμοῦ φάεος καὶ νυκτὸς ἀφάντου,
        ἴσων ἀμφοτέρων, ἐπεὶ οὐδετέρῳ μέτα μηδέν.

302 For they made up their minds to name two forms, of which

they needs must not name so much as one[1] – that is where they have gone astray – and distinguished them as opposite in appearance and assigned to them signs different one from the other – to one the aitherial flame of fire, gentle and very light, in every direction identical with itself, but not with the other; and that other too is in itself just the opposite, dark night, dense in appearance and heavy. The whole ordering of these I tell you as it seems fitting, for so no thought of mortal men shall ever outstrip you.

303 But because all things have been named light and night, and things corresponding to their powers have been assigned to this and that, all is full of light and of obscure night at once, both equal, since neither has any share of nothing.

[1] Alternatively: (a) 'not name one' (sc. although the other is correct); the culprit is then identified as *night*, following Aristotle's view (mistaken: see **303**) that Parmenides 'ranges the hot with what is and the other with what is not' (*Met.* 986b31), or as *not-being* (an over-ingenious suggestion). (b) 'not name only one': so KR, following Simplicius; but mortals in general *avoid* this error – their discourse is full of contrary expressions, as **302** obviously recognizes. See further e.g. A. A. Long in Furley and Allen (eds.), *Studies in Presocratic Philosophy* II, 82–101, Mourelatos, *Route*, 80–7, D. J. Furley in *Exegesis and Argument*, ed. E. N. Lee *et al.* (*Phronesis* Supp. Vol. I), 1–15.

302–3 advance the specific hypothesis by which Parmenides seeks to do the best that can be done to save mortal opinions. He pretends that they are built upon the foundation of a belief in two basic and mutually irreducible sensible forms, which are individually ascribed something like the determinacy required of subjects of enquiry in the *Truth*, and which together satisfy the condition of **301**, 31–2 that they pervade all reality. Other things are treated simply as manifestations of light or of night (or, presumably, of both), and are characterized by specific powers associated with one form or the other.

The fiction of an arbitrary decision to introduce the names 'light' and 'night' has sometimes been implausibly construed as an explanation of how there can be a world of the sort believed in by mortals. It rather expresses dramatically an epistemological characterization of their belief. Mortal opinions do not reflect the discovery of objective truth: the only alternative is to interpret them as products of conventions elaborated by the human mind. Now it follows that nothing about the world can explain why mortals should have such conventions or why they should invest them with the specific content they give them. Hence the currency of these conventions can only be represented as due to arbitrary fiat.

Parmenides was evidently quite systematic in his use of light and night in physical explanation, to judge from **305–7** below and from Plutarch's testimony (which also indicates the main topics discussed; cf. fr. 11, Simpl. *de caelo* 559, 20):

304 Plutarch *adv. Colotem* 1114B (DK 28 B 10) ὅς γε καὶ διάκοσμον πεποίηται καὶ στοιχεῖα μιγνὺς τὸ λαμπρὸν καὶ σκοτεινὸν ἐκ τούτων τὰ φαινόμενα πάντα καὶ διὰ τούτων ἀποτελεῖ· καὶ γὰρ περὶ γῆς εἴρηκε πολλὰ καὶ περὶ οὐρανοῦ καὶ ἡλίου καὶ σελήνης καὶ γένεσιν ἀνθρώπων ἀφήγηται· καὶ οὐδὲν ἄρρητον ὡς ἀνὴρ ἀρχαῖος ἐν φυσιολογίᾳ καὶ συνθεὶς γραφὴν ἰδίαν, οὐκ ἀλλοτρίαν διαφορῶν τῶν κυρίων παρῆκεν.

304 Parmenides has actually made an ordering, and by blending as elements the clear and the dark produces out of them and by them all sensible appearances. For he has said much about the earth and about the heavens and sun and moon, and he recounts the coming into being of men; and as befits an ancient natural philosopher, who put together his own book, not pulling apart someone else's, he has left none of the important topics undiscussed.

While Parmenides offers no rational justification for choosing light and night as cosmological principles, he was probably conscious of following Hesiod's *Theogony* 123ff. (**31** above), which was certainly the model for his treatment of the origin of Love (fr. 13; cf. **31**, 116–22) and of War and Discord (Cicero *de natura deorum* I, 11, 28, DK 28A37; cf. *Theog.* 223–32).

(iii) *Cosmology*

305 Fr. 10, Clement *Strom.* v, 138
  εἴσῃ δ' αἰθερίαν τε φύσιν τά τ' ἐν αἰθέρι πάντα
  σήματα καὶ καθαρᾶς εὐαγέος ἠελίοιο
  λαμπάδος ἔργ' ἀίδηλα καὶ ὁππόθεν ἐξεγένοντο,
  ἔργα τε κύκλωπος πεύσῃ περίφοιτα σελήνης
  καὶ φύσιν, εἰδήσεις δὲ καὶ οὐρανὸν ἀμφὶς ἔχοντα
5 ἔνθεν ἔφυ τε καὶ ὥς μιν ἄγουσ⟨α⟩ ἐπέδησεν Ἀνάγκη
  πείρατ' ἔχειν ἄστρων.

306 Fr. 12, Simplicius *in Phys.* 39, 14 and 31, 13
  αἱ γὰρ στεινότεραι (sc. στεφάναι) πλῆνται πυρὸς ἀκρήτοιο,
  αἱ δ' ἐπὶ ταῖς νυκτός, μετὰ δὲ φλογὸς ἵεται αἶσα·
  ἐν δὲ μέσῳ τούτων δαίμων ἣ πάντα κυβερνᾷ·

πάντων γὰρ στυγεροῖο τόκου καὶ μίξιος ἄρχει
5 πέμπουσ' ἄρσενι θῆλυ μιγῆν τό τ' ἐναντίον αὖτις
ἄρσεν θηλυτέρῳ.

307 Aetius II, 7, 1 (DK28A37) Παρμενίδης στεφάνας εἶναι περι-
πεπλεγμένας ἐπαλλήλους, τὴν μὲν ἐκ τοῦ ἀραιοῦ, τὴν δὲ ἐκ τοῦ
πυκνοῦ· μικτὰς δὲ ἄλλας ἐκ φωτὸς καὶ σκότους μεταξὺ τούτων. καὶ τὸ
περιέχον δὲ πάσας τείχους δίκην στερεὸν ὑπάρχειν, ὑφ' ᾧ πυρώδης
στεφάνη, καὶ τὸ μεσαίτατον πασῶν στερεόν, περὶ ὃ πάλιν πυρώδης
(sc. στεφάνη). τῶν δὲ συμμιγῶν τὴν μεσαιτάτην ἁπάσαις ⟨ἀρχήν⟩
τε καὶ ⟨αἰτίαν⟩ κινήσεως καὶ γενέσεως ὑπάρχειν, ἥντινα καὶ δαίμονα
κυβερνῆτιν καὶ κληδοῦχον ἐπονομάζει Δίκην τε καὶ Ἀνάγκην. καὶ τῆς
μὲν γῆς ἀπόκρισιν εἶναι τὸν ἀέρα διὰ τὴν βιαιοτέραν αὐτῆς
ἐξατμισθέντα πίλησιν, τοῦ δὲ πυρὸς ἀναπνοὴν τὸν ἥλιον καὶ τὸν
γαλαξίαν κύκλον. συμμιγῆ δ' ἐξ ἀμφοῖν εἶναι τὴν σελήνην, τοῦ τ'
ἀέρος καὶ τοῦ πυρός. περιστάντος δ' ἀνωτάτω πάντων τοῦ αἰθέρος
ὑπ' αὐτῷ τὸ πυρῶδες ὑποταγῆναι τοῦθ' ὅπερ κεκλήκαμεν οὐρανόν,
ὑφ' ᾧ ἤδη τὰ περίγεια.

305 And you shall know the nature of *aither* and all the signs [*i.e.* constellations] in it and the destructive works of the pure torch of the shining sun, and whence they came into being; and you shall hear of the wandering works of the round-eyed moon and of her nature; and you shall know too of the surrounding heaven, whence it grew and how Necessity guiding it fettered it to hold the limits of the stars.

306 The narrower rings are filled with unmixed fire, those next to them with night, but into them a share of flame is injected; and in the midst of them is the goddess who steers all things; for she governs the hateful birth and mingling of all things, sending female to mix with male, and again conversely male with female.

307 Parmenides said that there were rings wound one around the other, one formed of the rare, the other of the dense; and that there were others between these compounded of light and darkness. That which surrounds them all like a wall is, he says, by nature solid; beneath it is a fiery ring; and likewise what lies in the middle of them all is solid; and around it is again a fiery ring. The middlemost of the mixed rings is the [primary cause] of movement and of coming into being for them all, and he calls it the goddess that steers all, the holder of the keys, Justice and Necessity. The air, he says, is separated off from the earth, vaporized owing to the earth's stronger compression; the sun is an exhalation of fire, and so is the circle of the Milky Way. The moon is compounded

of both air and fire. Aither is outermost, surrounding all; next comes the fiery thing that we call the sky; and last comes the region of the earth.

305 evidently formed part of the introduction to the detailed account of the heavens. It is full of echoes of the *Truth*, e.g. when it speaks of the heaven 'surrounding' (cf. **298**, 31), of the 'limits of the stars' (cf. **298**, 26, 31; **299**, 42, 49), and of how 'Necessity fettered' the heaven (cf. **296**, 14; **298**, 30–1). Perhaps they are meant to suggest that in attempting to save mortal opinions our descriptions of the world they invent must approximate so far as possible to those used in our account of true reality.

The exiguous surviving evidence of Parmenides' astronomical system is so brief (**306**) and so obscure (**307**) that it is impossible with any confidence to reconstruct a coherent account of his extraordinary theory of 'garlands' or rings.[1] The whole construction was built out of the basic forms of light and night, as witness further Parmenides' memorable line about the moon's borrowed light:

308 Fr. 14, Plutarch *adv. Colotem* 1116A
νυκτιφαὲς περὶ γαῖαν ἀλώμενον ἀλλότριον φῶς

308 A night-shining, foreign light, wandering around the earth.

The theory seems to have been surprisingly influential. Philolaus (**446–7** below) was perhaps following Parmenides when he placed fire both at the extremity of the universe and at its centre, displacing the earth from the position traditionally assigned to it (but Parmenides' idea may have been of a fire *within* the earth). And Plato developed his own version of the scheme, including its presiding deity, in the myth of Er in the *Republic* (**617–18**). Parmenides for his part probably owed something to Anaximander's rings (**125–8**), although Hesiod had spoken of 'the shining stars with which the heaven is garlanded' (*Theog.* 282).

[1] For some attempts see K. Reinhardt, *Parmenides* (Bonn, 1916) 10–32, H. Fränkel in Furley and Allen (eds.), *Studies in Presocratic Philosophy* II, 22–5, J. S. Morrison, *Journal of Hellenic Studies* 75 (1955), 59–68, U. Hölscher, *Parmenides: Vom Wesen des Seienden* (Frankfurt am Main, 1969), 106–11.

Postulation of a deity as first cause of cosmogonic mixture is supported by appeal to her operation in animal procreation (**306**, 4–6), which we know was one of the topics of this part of the poem (cf. **304**). A single line of Parmenides' embryology is preserved:

309 Fr. 17, Galen *in Epid.* VI, 48

δεξιτεροῖσιν μὲν κούρους, λαιοῖσι δὲ κούρας...

309 On the right boys, on the left girls...

Parmenides' interest in these matters was perhaps stimulated by the Crotoniate medical tradition; his notion of mixture of opposites may be compared with Alcmaeon's theory of health (probably roughly contemporary in date):

310 Aetius v, 30, 1 (DK24B4) Ἀλκμαίων τῆς ὑγιείας εἶναι συνεκτικὴν τὴν 'ἰσονομίαν' τῶν δυνάμεων, ὑγροῦ, ξηροῦ, ψυχροῦ, θερμοῦ, πικροῦ, γλυκέος καὶ τῶν λοιπῶν, τὴν δ' ἐν αὐτοῖς 'μοναρχίαν' νόσου ποιητικήν· φθοροποιὸν γὰρ ἑκατέρου μοναρχίαν. καὶ νόσον συμπίπτειν ὡς μὲν ὑφ' οὗ ὑπερβολῇ θερμότητος ἢ ψυχρότητος, ὡς δὲ ἐξ οὗ διὰ πλῆθος τροφῆς ἢ ἔνδειαν, ὡς δ' ἐν οἷς ἢ ⟨περὶ Diels⟩ αἷμα ἢ μυελόν ἢ ἐγκέφαλον. ἐγγίνεσθαι δὲ τούτοις ποτὲ κὰκ τῶν ἔξωθεν αἰτιῶν, ὑδάτων ποιῶν ἢ χώρας ἢ κόπων ἢ ἀνάγκης ἢ τῶν τούτοις παραπλησίων. τὴν δ' ὑγίειαν τὴν σύμμετρον τῶν ποιῶν κρᾶσιν.

310 Alcmaeon maintains that the bond of health is the 'equal rights' of the powers, moist and dry, cold and hot, bitter and sweet, and the rest, while the 'monarchy' of one of them is the cause of disease; for the monarchy of either is destructive. Illness comes about directly through excess of heat or cold, indirectly through surfeit or deficiency of nourishment; and its centre is either the blood or the marrow or the brain. It sometimes arises in these centres from external causes, moisture of some sort or environment or exhaustion or hardship or similar causes. Health on the other hand is the proportionate admixture of the qualities.

It is unclear whether Parmenides' divine first cause is anything more than a metaphor for the mutual attraction exercised by opposite forms, although there is no room for such a cause in the ontology of **302–3**. What is clear and important in his cosmogony is the general idea that creation is the product not (as the Milesians thought) of separation from an original unity, but of the interaction and harmony of opposite powers. This idea was to be taken up by Empedocles and (in a distinctively Pythagorean form) by Philolaus.

(iv) *Theory of mortal thought*

311 Theophrastus *de sensu* 1ff. (DK28A46) περὶ δ' αἰσθήσεως αἱ μὲν πολλαὶ καὶ καθόλου δόξαι δύ' εἰσιν· οἱ μὲν γὰρ τῷ ὁμοίῳ ποιοῦσιν, οἱ δὲ τῷ ἐναντίῳ. Παρμενίδης μὲν καὶ Ἐμπεδοκλῆς καὶ Πλάτων τῷ

ὁμοίῳ, οἱ δὲ περὶ Ἀναξαγόραν καὶ Ἡράκλειτον τῷ ἐναντίῳ.... (3) Παρμενίδης μὲν γὰρ ὅλως οὐδὲν ἀφώρικεν ἀλλὰ μόνον ὅτι δυοῖν ὄντοιν στοιχείοιν κατὰ τὸ ὑπερβάλλον ἐστὶν ἡ γνῶσις. ἐὰν γὰρ ὑπεραίρῃ τὸ θερμὸν ἢ τὸ ψυχρόν, ἄλλην γίνεσθαι τὴν διάνοιαν, βελτίω δὲ καὶ καθαρωτέραν τὴν διὰ τὸ θερμόν· οὐ μὴν ἀλλὰ καὶ ταύτην δεῖσθαί τινος συμμετρίας·

(Fr. 16) ὡς γὰρ ἑκάστοτ' (φησίν) ἔχει κρᾶσις μελέων πολυπλάγκτων,
τὼς νόος ἀνθρώποισι παρέστηκεν· τὸ γὰρ αὐτὸ
ἔστιν ὅπερ φρονέει μελέων φύσις ἀνθρώποισιν
καὶ πᾶσιν καὶ παντί· τὸ γὰρ πλέον ἐστὶ νόημα.

τὸ γὰρ αἰσθάνεσθαι καὶ τὸ φρονεῖν ὡς ταὐτὸ λέγει· διὸ καὶ τὴν μνήμην καὶ τὴν λήθην ἀπὸ τούτων γίνεσθαι διὰ τῆς κράσεως· ἂν δ' ἰσάζωσι τῇ μίξει, πότερον ἔσται φρονεῖν ἢ οὔ, καὶ τίς ἡ διάθεσις, οὐδὲν ἔτι διώρικεν. ὅτι δὲ καὶ τῷ ἐναντίῳ καθ' αὑτὸ ποιεῖ τὴν αἴσθησιν, φανερὸν ἐν οἷς φησι τὸν νεκρὸν φωτὸς μὲν καὶ θερμοῦ καὶ φωνῆς οὐκ αἰσθάνεσθαι διὰ τὴν ἔκλειψιν τοῦ πυρός, ψυχροῦ δὲ καὶ σιωπῆς καὶ τῶν ἐναντίων αἰσθάνεσθαι. καὶ ὅλως δὲ πᾶν τὸ ὂν ἔχειν τινὰ γνῶσιν.

311 The majority of general views about sensation are two: some make it of like by like, others of opposite by opposite. Parmenides, Empedocles and Plato say it is of like by like, the followers of Anaxagoras and of Heraclitus of opposite by opposite... Parmenides gave no clear definition at all, but said only that there were two elements and that knowledge depends on the excess of one or the other. Thought varies according to whether the hot or the cold prevails, but that which is due to the hot is better and purer; not but what even that needs a certain balance; for, says he, 'As is at any moment the mixture of the wandering limbs, so mind is present to men; for that which thinks is the same thing, namely the substance of their limbs, in each and all men; for what preponderates is thought'[1] – for he regards perception and thought as the same. So too memory and forgetfulness arise from these causes, on account of the mixture; but he never made clear whether, if they are equally mixed, there will be thought or not, or, if so, what its character will be. But that he regards perception as also due to the opposite as such he makes clear when he says that a corpse does not perceive light, heat or sound owing to its deficiency of fire, but that it does perceive their opposites, cold, silence and so on. And he adds that in general everything that exists has some measure of knowledge.

[1] Or: 'for the full is thought'. Translation and interpretation of the whole fragment are much disputed. See e.g. Guthrie, *HGP* II, 67–9 for discussion and references to the scholarly literature.

Fr. 16 gains in point if construed as a final dismissive comment on mortal opinion. In *Truth* genuine thought was in a sense identified with the being which is its object. But mortal opinion is mere invention of the human mind, not determined by reality. Mortal thoughts are now reductively 'explained' in terms of the very forms they have invented, as functions of the proportions of light and night in the human body.

CONCLUSION

312 Fr. 19, Simplicius *de caelo* 558, 8

οὕτω τοι κατὰ δόξαν ἔφυ τάδε καί νυν ἔασι
καὶ μετέπειτ' ἀπὸ τοῦδε τελευτήσουσι τραφέντα·
τοῖς δ' ὄνομ' ἄνθρωποι κατέθεντ' ἐπίσημον ἑκάστῳ.

313 Fr. 4, Clement *Strom.* V, 15, 5

λεῦσσε δ' ὅμως ἀπεόντα νόῳ παρεόντα βεβαίως·
οὐ γὰρ ἀποτμήξει τὸ ἐὸν τοῦ ἐόντος ἔχεσθαι
οὔτε σκιδνάμενον πάντῃ πάντως κατὰ κόσμον
οὔτε συνιστάμενον.

312 Thus according to belief these things came to be and now are, and having matured will come to an end after this in the future; and for them men have laid down a name to distinguish each one.

313 But look at things which, though far off, are securely present to the mind; for you will not cut off for yourself what is from holding to what is, neither scattering everywhere in every way in order [*i.e.* cosmic order] nor drawing together.

The goddess may have concluded her account of the content of mortal opinions (rounded off in 312) with the obscure exhortation of 313 to contemplate the truth. Why that elaborate account was included in the poem remains a mystery: the goddess seeks to save the phenomena so far as is possible, but she knows and tells us that the project is impossible. Perhaps Parmenides simply failed to resist the opportunity for versatility afforded by the idea of 'saying many false things resembling the truth and uttering true things when we wish' (Hesiod *Theog.* 27–8).

Zeno of Elea

DATE AND LIFE

The most reliable evidence for Zeno's date is the same passage of Plato's *Parmenides* (286) as was used to determine the date of Parmenides. On the basis of that evidence, Zeno seems to have been born about 490–485 B.C. Once again the date given by Apollodorus for Zeno's *floruit*, namely 464–461 (Diog. L. IX, 29 = DK 29A 1: text unfortunately lacunose), conflicts with this; but we have already seen that his dating of the Eleatics depends solely on the date of the foundation of Elea. Nonetheless he may fortuitously give us a date only about five years too late for Zeno's book, if it was indeed written (as 314 says) in his youth.

Little is known of Zeno's life. Diogenes Laertius tells us (IX, 28, DK 29A 1: a passage apparently intended to contradict the story in 286) that he loved Elea, 'mean though it was and skilled only in bringing men up to be virtuous, in preference to the arrogance of Athens', which he did not visit, living all his life in his native city. In the one context in which his name repeatedly occurs by itself – the story of his part in a plot against a tyrant and of his courage under torture (see DK 29A 1, 2, 6, 7, 8 and 9) – the details vary so much that the facts are impossible to reconstruct.

ZENO'S BOOK

314 Plato *Parmenides* 127D–128A Τὸν οὖν Σωκράτη ἀκούσαντα πάλιν τε κελεῦσαι τὴν πρώτην ὑπόθεσιν τοῦ πρώτου λόγου ἀναγνῶναι, καὶ ἀναγνωσθείσης, Πῶς, φάναι, ὦ Ζήνων, τοῦτο λέγεις; εἰ πολλά ἐστι τὰ ὄντα, ὡς ἄρα δεῖ αὐτὰ ὅμοιά τε εἶναι καὶ ἀνόμοια, τοῦτο δὲ δὴ ἀδύνατον· οὔτε γὰρ τὰ ἀνόμοια ὅμοια οὔτε τὰ ὅμοια ἀνόμοια οἷόν τε εἶναι; οὐχ οὕτω λέγεις;

Οὕτω, φάναι τὸν Ζήνωνα.

Οὐκοῦν εἰ ἀδύνατον τά τε ἀνόμοια ὅμοια εἶναι καὶ τὰ ὅμοια ἀνόμοια, ἀδύνατον δὴ καὶ πολλὰ εἶναι; εἰ γὰρ πολλὰ εἴη, πάσχοι ἄν

τὰ ἀδύνατα. ἆρα τοῦτό ἐστιν ὃ βούλονταί σου οἱ λόγοι, οὐκ ἄλλο
τι ἢ διαμάχεσθαι παρὰ πάντα τὰ λεγόμενα ὡς οὐ πολλά ἐστι; καὶ
τούτου αὐτοῦ οἴει σοι τεκμήριον εἶναι ἕκαστον τῶν λόγων, ὥστε καὶ
ἡγῇ τοσαῦτα τεκμήρια παρέχεσθαι, ὅσουσπερ λόγους γέγραφας, ὡς
οὐκ ἔστι πολλά; οὕτω λέγεις, ἢ ἐγὼ οὐκ ὀρθῶς καταμανθάνω;

Οὔκ, ἀλλά, φάναι τὸν Ζήνωνα, καλῶς συνῆκας ὅλον τὸ γράμμα ὃ
βούλεται.

314 After Socrates had heard this [sc. Zeno's reading of his book],
he asked him to read again the first hypothesis of the first
argument. When it had been read, he said: 'How is what you say
to be taken, Zeno? If the things that are are many, then you say
they must be both like and unlike, but that this is impossible - for
neither can what is unlike be like, nor what is like unlike? Is not
that what you say?' – 'Yes', said Zeno. – 'So if it is impossible that
what is unlike should be like and what is like unlike, it is also
impossible that there should be many things? For if there were
many things they would be subject to impossibilities. Is this the
purpose of your arguments – precisely to contend, against all that
is commonly said, that there are not many things? And do you
regard each of your arguments as evidence of this very conclusion,
so that in fact you reckon to provide as many proofs as the
arguments you have composed that there are not many things?
Is this what you are saying, or do I not understand you correctly?' –
'No,' said Zeno, 'you have understood the purpose of the whole
treatise beautifully.'

The treatise Plato describes is often taken to be Zeno's only literary
production: a list of titles preserved in the *Suda* (DK 29 A 2) commands
no credence whatever. Opinions differ about its form and plan,
although no one doubts that it was a philosophical puzzle-book of
astonishing ingenuity. It is natural to infer from **314** (see also **315–16**)
that it consisted simply of a collection of arguments, each of which
explicitly attacked the thesis that there are many things by deriving
contradictory consequences from it. But this inference is called into
question by reports of Zenonian arguments which represent them
neither as antinomies nor as directed explicitly against the hypothesis
that there are many things: notably Aristotle's reports of the famous
paradoxes of motion (**317–26** below). The difficulty may be met in
one of three ways. (*a*) The form of the book referred to in **314** was
as stated above. But Zeno wrote at least one other book, which
included the paradoxes of motion, the paradox of the millet seed
(Aristotle *Phys.* 250a19ff., DK 29 A 29), the paradox of place (Aristotle

Phys. 210b22ff., 209a23ff., DK 29 A 24), and doubtless others too. (*b*)
Zeno wrote only one book, but our assumptions about its form must
be wrong. Perhaps it included arguments whose explicit target was
not plurality but motion. Perhaps not all its arguments were
antinomies, but other forms of *reductio ad absurdum* were used. Plato
either misrepresents the form of the book or else gives not a
description of its arguments but an interpretation (conceivably a
misinterpretation) of their underlying, although not always explicit,
target. (*c*) There was a single Zenonian treatise all of whose
arguments were explicit antinomies of plurality. The other paradoxes
mentioned in (*a*) originally took that form. For example, the Achilles
(**322**) might have been designed to prove that if there are many
things, each must be both faster and slower than the others (note the
wording in Aristotle's report, which suggests that the picturesque
figures of Achilles and the tortoise may not belong to the formulation
of the argument which he draws upon).

We do not know what principle of organization Zeno followed in
ordering the arguments in his book or books, despite modern
attempts to discern an architectonic structure, or at any rate an
overall strategy, in their deployment. According to one popular
suggestion (adopted in KR), the four paradoxes of motion discussed
by Aristotle formed two pairs: one pair (the Stadium and the
Achilles) assumed that space and time are infinitely divisible, the
other (the Arrow and the Moving Rows) that they consist of
indivisible minima; and in each pair one argument produced
absurdities in the idea of a body's motion considered just in itself, the
other in the idea of its motion considered relative to the motion of
another body. A more elaborate and ambitious scheme, taking in
315–16 as well as **318–26**, was published at about the same time by
G. E. L. Owen (see *Studies in Presocratic Philosophy* II, 143–65). Such
schemes are undoubtedly attractive, but none has any ancient
authority, nor have they withstood critical scrutiny very well; in
particular, the suggestion that some of the paradoxes of motion
assume that space and time are not infinitely divisible has met with
fierce opposition (see e.g. D. J. Furley, *Two Studies in the Greek Atomists*
(Princeton, 1967), 71–5).

THE EXTANT ANTINOMIES

315 Fr. 3, Simplicius *in Phys.* 140, 28 πάλιν γὰρ δεικνύς, ὅτι εἰ
πολλά ἐστι, τὰ αὐτὰ πεπερασμένα ἐστὶ καὶ ἄπειρα, γράφει ταῦτα
κατὰ λέξιν ὁ Ζήνων·

'εἰ πολλά ἐστιν, ἀνάγκη τοσαῦτα εἶναι ὅσα ἐστὶ καὶ οὔτε πλείονα αὐτῶν οὔτε ἐλάττονα. εἰ δὲ τοσαῦτά ἐστιν ὅσα ἐστί, πεπερασμένα ἂν εἴη.

'εἰ πολλά ἐστιν, ἄπειρα τὰ ὄντα ἐστίν· ἀεὶ γὰρ ἕτερα μεταξὺ τῶν ὄντων ἐστί, καὶ πάλιν ἐκείνων ἕτερα μεταξύ. καὶ οὕτως ἄπειρα τὰ ὄντα ἐστί.'

315 In proving once again that if there are many things, the same things are limited and unlimited, Zeno's own very words are as follows.

'If there are many things, it is necessary that they are just as many as they are, and neither more nor less than that. But if they are as many as they are, they will be limited.

'If there are many things, the things that are are unlimited; for there are always others between the things that are, and again others between those. And thus the things that are are unlimited.'

315 is the only unquestionably authentic fragment of Zeno which has come down to us intact. The puzzle it proposes is sometimes thought insufficiently puzzling. But each limb of the argument has considerable power to unsettle us. For example, the second probably turns on the thought that any two members of a collection must be separated by something if they are to be two things and not one. To this it may be objected that the principle it states is valid only if applied to densely ordered collections such as sets of points. But Zeno might reasonably feel unmoved by the objection unless we could convince him of alternative conditions of discreteness for three-dimensional objects, and show him why and how they differ from the conditions of discreteness for points. And we will be unable to think out good answers to those questions until we have engaged in just the sort of philosophical reflexion about what makes a thing one and not many which 315 is designed to provoke in us.

316 Frr. 2 and 1, Simplicius *in Phys.* 139, 9 and 140, 34   (a) ἐν δὴ τούτῳ δείκνυσιν, ὅτι οὗ μήτε μέγεθος μήτε πάχος μήτε ὄγκος μηθείς ἐστιν, οὐδ' ἂν εἴη τοῦτο. 'εἰ γὰρ ἄλλῳ ὄντι, φησί, προσγένοιτο, οὐδὲν ἂν μεῖζον ποιήσειεν· μεγέθους γὰρ μηδενὸς ὄντος, προσγενομένου δέ, οὐδὲν οἷόν τε εἰς μέγεθος ἐπιδοῦναι. καὶ οὕτως ἂν ἤδη τὸ προσγινόμενον οὐδὲν εἴη. εἰ δὲ ἀπογινομένου τὸ ἕτερον μηδὲν ἔλαττον ἔστι μηδὲ αὖ προσγινομένου αὐξήσεται, δῆλον ὅτι τὸ προσγενόμενον οὐδὲν ἦν οὐδὲ τὸ ἀπογενόμενον.' καὶ ταῦτα οὐχὶ τὸ ἓν ἀναιρῶν ὁ Ζήνων λέγει, ἀλλ' ὅτι μέγεθος ἔχει ἕκαστον τῶν πολλῶν καὶ ἀπείρων[1] τῷ πρὸ τοῦ

λαμβανομένου ἀεί τι εἶναι διὰ τὴν ἐπ' ἄπειρον τομήν· ὃ δείκνυσι προδείξας, ὅτι οὐδὲν ἔχει μέγεθος ἐκ τοῦ[2] ἕκαστον τῶν πολλῶν ἑαυτῷ ταὐτὸν εἶναι καὶ ἕν.

[1] ἀπείρων MSS; ἄπειρον H. Fränkel.
[2] ἐκ τοῦ transposuit post πολλῶν Fränkel.

(b) τὸ δὲ κατὰ μέγεθος (sc. ἄπειρον ἔδειξε) πρότερον κατὰ τὴν αὐτὴν ἐπιχείρησιν. προδείξας γὰρ ὅτι εἰ μὴ ἔχοι μέγεθος τὸ ὄν, οὐδ' ἂν εἴη, ἐπάγει 'εἰ δὲ ἔστιν, ἀνάγκη ἕκαστον μέγεθός τι ἔχειν καὶ πάχος καὶ ἀπέχειν αὐτοῦ τὸ ἕτερον ἀπὸ τοῦ ἑτέρου. καὶ περὶ τοῦ προύχοντος ὁ αὐτὸς λόγος. καὶ γὰρ ἐκεῖνο ἕξει μέγεθος καὶ προέξει αὐτοῦ τι. ὅμοιον δὴ τοῦτο ἅπαξ τε εἰπεῖν καὶ ἀεὶ λέγειν· οὐδὲν γὰρ αὐτοῦ τοιοῦτον ἔσχατον ἔσται οὔτε ἕτερον πρὸς ἕτερον οὐκ ἔσται. οὕτως εἰ πολλά ἐστιν, ἀνάγκη αὐτὰ μικρά τε εἶναι καὶ μεγάλα· μικρὰ μὲν ὥστε μὴ ἔχειν μέγεθος, μεγάλα δὲ ὥστε ἄπειρα εἶναι.'

316 (a)   In this argument [sc. that proving the many both large and small] he proves that what has neither magnitude nor solidity nor bulk would not even exist. 'For', he says, 'if it were added to something else that is, it would make it no larger; for if it were of no magnitude, but were added, it [sc. what it was added to] could not increase in magnitude. And thus what was added would in fact be nothing. If when it is taken away the other thing is no smaller, and again when it is added will not increase, it is clear that what was added was nothing nor again what was taken away.' And Zeno says this, not by way of abolishing the One, but because each of the many infinite things has magnitude, since there is always something in front of what is taken, because of infinite division; and this he proves having first proved that it has no magnitude since each of the many is the same as itself and one.

(b)   Unlimitedness in magnitude he proved earlier [sc. than **315**] by the same method of argument. For having first proved [see (a) above] that if what is had no magnitude, it would not even exist, he goes on: 'But if it is, it is necessary for each to have some magnitude and thickness, and for the one part of it to be away from the other. And the same argument holds about the part out in front; for that too will have magnitude and a part of it will be out in front. Indeed it is the same thing to say this once and to go on saying it always; for no such part of it will be last, nor will there not be one part related to another. – Thus if there are many things, it is necessary that they are both small and large; so small as not to have magnitude, so large as to be unlimited.'

Only parts of Zeno's complicated antinomy are quoted by Simplicius, to prove points he happens to be arguing in his commentary on Aristotle's *Physics*. Nonetheless he says enough about its structure for us to be able to reconstruct it with some confidence.

In the first limb of the antinomy Zeno tried to prove that if there are many things, they are so small as to be without any magnitude. Nothing survives of the proof. All we possess is Simplicius' assurance (at the end of **316** (a)) that Zeno inferred the conclusion from the premiss that each member of a plurality must be the same as itself and one – and so (we may guess) cannot have the parts necessary to magnitude (cf. Melissus' argument in **538**). The first extant section of the argument then followed (**316** (a)). It pointed up the unacceptability of the conclusion of the first limb and prepared the way for the second: if something has no magnitude, then it does not exist at all – which contradicts the original supposition that there *are* many things.

316 (b) preserves the second limb, which starts from the assumption that if there are many things, they must each have magnitude. The Greek of the regress argument which follows is obscure, and it is unclear how Zeno thought he could infer the conclusion that something which has magnitude must have infinite size. Probably he believed the argument entitled him to hold (1) that any magnitude has an infinite number of parts; inferred (2) that the sum of an infinite number of parts of positive magnitude is itself infinite; and so concluded (3) that the magnitude of any member of a plurality is infinite. The conclusion is absurd, as was that of the first limb of the antinomy, which is accordingly not just an antinomy but a dilemma.

'Evidently', says J. Barnes, 'the argument is unsound; and it has found no serious defenders [*sc.* in modern times]. Yet its opponents are in disarray, and there is no agreement on just where the flaws – or the chief flaws – are to be found' (*The Presocratic Philosophers* I, 244). As with **315**, so yet more emphatically in the present case is it true that a diagnosis requires of one a deep and clear-sighted engagement with the philosophical problems of infinity. Consequently a brief attempt to locate an 'error' on Zeno's part would not constitute a fruitful response to the paradox nor be likely to carry much conviction. But it is perhaps worth noting that (2) is not unrestrictedly true, and is false for infinite series which converge on zero such as $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$. In **316** (b) Zeno probably has in mind such a series; but his argument could easily be reformulated to generate a series of which (2) is true, e.g. a series which results in parts of equal size. Our critical attention is better directed to (1), and to its claim (which we

now express with misleading precision) that if a magnitude is infinitely divisible, it must possess a set of parts which contains infinitely many members.

Zeno's target in **316** is the thesis that there are many things. Yet are not his arguments equally effective against Parmenides' conception of reality? For Parmenides took reality to be both unitary and extended: which makes him apparently vulnerable to each limb of the antinomy. In order to save Parmenides it has been said that Zeno thought infinite divisibility a consequence not of extension only (μέγεθος) but of solidity (πάχος) or bulk (ὄγκος). But his argument plainly and correctly assumes that mere extension is sufficient to generate the regress. It has been claimed that Eleatic monism denies extension to reality. But this seems plainly false. It is hard to resist the conclusion that **316** does indeed undermine Parmenides' *Truth*, and that Zeno was perfectly well aware of this. Perhaps he enjoyed the thought that common sense and Parmenidean metaphysics can be embarrassed by precisely the same dialectical manoeuvres.

THE PARADOXES OF MOTION

317 Aristotle *Phys.* Z9, 239b9 (DK 29A25) τέτταρες δ' εἰσὶν οἱ λόγοι περὶ κινήσεως Ζήνωνος οἱ παρέχοντες τὰς δυσκολίας τοῖς λύουσιν.

317 Zeno's arguments about motion, which cause such trouble to those who try to solve the problems that they present, are four in number. (*After Gaye*)

This particular group of paradoxes had evidently already in Aristotle's day achieved the notoriety they still enjoy and become recognized as a distinct set of puzzles, although we do not know whether Zeno himself intended them to be read as such. Our account attempts only to expose the structure of each puzzle and its salient features. For further philosophical exploration the reader is referred to the Selective Bibliography.

(i) *The Stadium*

318 Aristotle *Phys.* Z9, 239b11 (DK 29A25: continuing **317**) ...πρῶτος μὲν ὁ περὶ τοῦ μὴ κινεῖσθαι διὰ τὸ πρότερον εἰς τὸ ἥμισυ δεῖν ἀφικέσθαι τὸ φερόμενον ἢ πρὸς τὸ τέλος...

319 Aristotle *Topics* Θ8, 160b7 (DK 29A25) πολλοὺς γὰρ λόγους ἔχομεν ἐναντίους ταῖς δόξαις, καθάπερ Ζήνωνος, ὅτι οὐκ ἐνδέχεται κινεῖσθαι οὐδὲ τὸ στάδιον διελθεῖν.

320 Aristotle *Phys.* Z2, 233a21 (DK29A25) διὸ καὶ ὁ Ζήνωνος λόγος ψεῦδος λαμβάνει τὸ μὴ ἐνδέχεσθαι τὰ ἄπειρα διελθεῖν ἢ ἅψασθαι τῶν ἀπείρων καθ' ἕκαστον ἐν πεπερασμένῳ χρόνῳ. διχῶς γὰρ λέγεται καὶ τὸ μῆκος καὶ ὁ χρόνος ἄπειρον, καὶ ὅλως πᾶν τὸ συνεχές, ἤτοι κατὰ διαίρεσιν ἢ τοῖς ἐσχάτοις. τῶν μὲν οὖν κατὰ ποσὸν ἀπείρων οὐκ ἐνδέχεται ἅψασθαι ἐν πεπερασμένῳ χρόνῳ, τῶν δὲ κατὰ διαίρεσιν ἐνδέχεται· καὶ γὰρ αὐτὸς ὁ χρόνος οὕτως ἄπειρος. ὥστε ἐν τῷ ἀπείρῳ καὶ οὐκ ἐν τῷ πεπερασμένῳ συμβαίνει διιέναι τὸ ἄπειρον, καὶ ἅπτεσθαι τῶν ἀπείρων τοῖς ἀπείροις, οὐ τοῖς πεπερασμένοις.

318 ...The first asserts the non-existence of motion on the ground that that which is in locomotion must arrive at the half-way stage before it arrives at the goal... (*Tr. Gaye*)

319 For we have many arguments contrary to accepted opinion, such as Zeno's that motion is impossible and that you cannot traverse the stadium.

320 Hence Zeno's argument makes a false assumption in asserting that it is impossible for a thing to pass over or come in contact with infinite things individually in a finite time. For there are two senses in which length and time and generally anything continuous are called 'infinite': they are called so either in respect of divisibility or in respect of their extremities. So while a thing in a finite time cannot come in contact with things quantitatively infinite, it can come in contact with things infinite in respect of divisibility: for in this sense the time itself is also infinite; and so we find that the time occupied by the passage over the infinite is not a finite but an infinite time, and the contact with the infinites is made in times not finite but infinite in number. (*After Gaye*)

Aristotle's account of this puzzle (sometimes known as the Dichotomy) is brief and allusive in the extreme: it is even unclear whether the task of the runner in the stadium is to reach the half-way point *before* the half-way point of the course (and then the half-way point before that, etc.) or rather the half-way point *past* the half-way point (etc.). But we can extract the following argument:

(1) To reach his goal, a runner must touch infinitely many points ordered in the sequence $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$

(2) It is impossible to touch infinitely many points in a finite time. So

(3) the runner cannot reach his goal.

Aristotle thinks we can easily resist the absurd conclusion (3) by rejecting (2): a finite time is infinitely divisible, and an infinitely

divisible time is sufficient for the runner to traverse an infinitely divisible distance and touch the points which mark its divisions.

321 Aristotle *Phys.* Θ8, 263a15–18, b3–9 ἀλλ' αὕτη ἡ λύσις πρὸς μὲν ἐρωτῶντα ἱκανῶς ἔχει (ἠρωτᾶτο γὰρ εἰ ἐν πεπερασμένῳ ἄπειρα ἐνδέχεται διεξελθεῖν ἢ ἀριθμῆσαι), πρὸς δὲ τὸ πρᾶγμα καὶ τὴν ἀλήθειαν οὐχ ἱκανῶς...ὥστε λεκτέον πρὸς τὸν ἐρωτῶντα εἰ ἐνδέχεται ἄπειρα διεξελθεῖν ἢ ἐν χρόνῳ ἢ ἐν μήκει, ὅτι ἔστιν ὡς, ἔστιν δ' ὡς οὔ. ἐντελεχείᾳ μὲν γὰρ ὄντα οὐκ ἐνδέχεται, δυνάμει δὲ ἐνδέχεται· ὁ γὰρ συνεχῶς κινούμενος κατὰ συμβεβηκὸς ἄπειρα διελήλυθεν, ἁπλῶς δ' οὔ· συμβέβηκε γὰρ τῇ γραμμῇ ἄπειρα ἡμίσεα εἶναι, ἡ δ' οὐσία ἐστίν ἑτέρα καὶ τὸ εἶναι.

321 But although this solution is an adequate reply to the questioner (for the question was whether it is possible to traverse or count infinite things in a finite time), it is inadequate to the facts and the truth...So when someone asks the question whether it is possible to traverse infinite things – either in time or in distance – we must reply that in a way it is but in a way it is not. For if they exist actually, it is not possible, but if potentially, it is; for someone in continuous movement has traversed infinite things incidentally, not without qualification; for it is incidental to the line to be infinitely many halves, but its essence and being are different.

Aristotle now has second thoughts. The solution in **320** provides a reply to Zeno adequate *ad hominem*. But (2) is less easily dismissed if reformulated as:

(2′) It is impossible to get through the task of touching infinitely many points.

Aristotle responds to the reformulated argument by observing that (2′) would be true only if 'infinitely many points' meant 'infinitely many actually existent points'; he apparently believes it would then be true because he thinks it would be impossible to perform an infinite number of discrete physical acts which counted as 'touching' or 'coming into contact with' each of an actual infinity of points (263a19–b3). But in fact, Aristotle supposes, a weaker interpretation of 'infinitely many points' is required by (1): the runner must traverse a finite distance divided by an infinity of points whose existence is only potential (i.e., as we might say, a distance which may simply be mathematically represented as divided according to the infinite series $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$). And if this weaker reading is adopted in (2′), (2′) is false.

Aristotle's second solution brings to light the fundamental issues which the paradox raises and which are still the subject of intense and unconcluded debate. In particular, philosophers cannot agree whether the impossibility of completing the performance of an infinite number of discrete physical acts (if indeed that *is* impossible) is a logical or merely a physical impossibility, nor what in either case the impossibility consists in.

(ii) *Achilles and the Tortoise*

322 Aristotle *Phys.* Z9, 239b14 δεύτερος δ' ὁ καλούμενος 'Αχιλλεύς. ἔστι δ' οὗτος ὅτι τὸ βραδύτατον οὐδέποτε καταληφθήσεται θέον ὑπὸ τοῦ ταχίστου· ἔμπροσθεν γὰρ ἀναγκαῖον ἐλθεῖν τὸ διῶκον ὅθεν ὥρμησε τὸ φεῦγον, ὥστ' ἀεί τι προέχειν ἀναγκαῖον τὸ βραδύτερον. ἔστι δὲ καὶ οὗτος ὁ αὐτὸς λόγος τῷ διχοτομεῖν, διαφέρει δ' ἐν τῷ διαιρεῖν μὴ δίχα τὸ προσλαμβανόμενον μέγεθος.

322 The second is the so-called 'Achilles', and it amounts to this, that in a race the quickest runner can never overtake the slowest, since the pursuer must first reach the point whence the pursued started, so that the slower must always hold a lead. This argument is the same in principle as that which depends on bisection, though it differs from it in that the added magnitudes are not divided into halves. (*After Gaye*)

Where the runner in **318–19** was required to reach a succession of half-way points, Achilles has to reach the point from which the tortoise started, and then the point the tortoise had reached when he reached its starting-point, and so on *ad infinitum*. If we assume that pursuer and pursued run at uniform speeds, then Achilles' series of runs again constitutes a geometrical progression which converges on zero. As Aristotle comments (239b24–5), the Achilles is simply a theatrical version of the Stadium.

(iii) *The Arrow*

323 Aristotle *Phys.* Z9, 239b30–3, 5–9 (DK 29A27)
(a) τρίτος δ' ὁ νῦν ῥηθείς, ὅτι ἡ ὀϊστὸς φερομένη ἔστηκεν. συμβαίνει δὲ παρὰ τὸ λαμβάνειν τὸν χρόνον συγκεῖσθαι ἐκ τῶν νῦν· μὴ διδομένου γὰρ τούτου οὐκ ἔσται ὁ συλλογισμός.
(b) Ζήνων δὲ παραλογίζεται· εἰ γὰρ αἰεί, φησίν, ἠρεμεῖ πᾶν [ἢ κινεῖται][1] ὅταν ᾖ κατὰ τὸ ἴσον, ἔστιν δ' αἰεὶ τὸ φερόμενον ἐν τῷ νῦν, ἀκίνητον τὴν φερομένην εἶναι ὀϊστόν. τοῦτο δ' ἐστὶ ψεῦδος· οὐ γὰρ σύγκειται ὁ χρόνος ἐκ τῶν νῦν τῶν ἀδιαιρέτων, ὥσπερ οὐδ' ἄλλο μέγεθος οὐδέν.

[1] ἢ κινεῖται seclusit Zeller; cf. Ross *ad loc.*

324 Fr. 4, Diogenes Laertius IX, 72 Ζήνων δὲ τὴν κίνησιν ἀναιρεῖ λέγων 'τὸ κινούμενον οὔτ' ἐν ᾧ ἔστι τόπῳ κινεῖται οὔτ' ἐν ᾧ μὴ ἔστι.'

323 (a) Third is the one just mentioned, that the arrow in locomotion is at rest. This follows from assuming that time is composed of 'nows'; for if that is not granted, the conclusion will not follow.
(b) Zeno argues fallaciously; for if, he says, everything always rests when it is against what is equal, and what is in locomotion is always in the now, the arrow in locomotion is motionless. But this is false: for time is not composed of indivisible 'nows', no more than is any other magnitude.

324 Zeno abolishes motion, saying: 'What is in motion moves neither in the place it is in nor in one in which it is not.'

The report in **323** (b) is textually uncertain and again very condensed; it does not disclose that the argument of the Arrow probably formed the first limb of the antinomy ascribed to Zeno in **324** and later borrowed by Diodorus Cronus (Sextus *adv. math.* x, 87). Here is a reconstruction of the reasoning Aristotle summarizes:

    (1) Anything occupying a place just its own size is at rest.
    (2) In the present, what is moving occupies a place just its own size.
So (3) in the present, what is moving is at rest.
Now (4) what is moving always moves in the present.
So (5) what is moving is always – throughout its movement – at rest.

Aristotle objects to the inference from (3) and (4) to (5). He treats Zeno as meaning by 'the now' what he himself means by it, viz. the present conceived as an indivisible instant; and he suggests that we may judge the inference valid only if we assume falsely with Zeno that a period of time is the sum of the indivisible instants within it. Aristotle's suggestion is mistaken, and it is responsible for the equally mistaken notion that Zeno assumes in the Arrow that space and time are not infinitely divisible. His argument requires no determinate assumption about the structure of space and time; and all he requires for the validity of his inference is that what is true of something *at every moment* of a period of time (whether or not moments are indivisible instants) is true of it *throughout* the period.

The paradox in fact poses an incisive challenge to the attractive idea that motion must occur – if it occurs at all – in the present. It

shows that it is hard to reconcile this idea with the equally attractive notion that in the present what moves cannot be traversing any distance. Perhaps there are two incompatible conceptions of the 'now' at work here – one that of a present duration, the other that of an indivisible instant, as it were a line dividing past from future. If so, that does not make Zeno's argument any the less impressive. For it is such arguments which force the distinction upon us. And the choice between the alternatives hinges on one's deep-seated predilections in the philosophy of time, as is shown by J. D. Lear (*Phronesis* 26 (1981), 91–104).

(iv) *The Moving Rows*

325 Aristotle *Phys.* 239b33 (DK 29 A 28) τέταρτος δ' ὁ περὶ τῶν ἐν σταδίῳ κινουμένων ἐξ ἐναντίας ἴσων ὄγκων παρ' ἴσους, τῶν μὲν ἀπὸ τέλους τοῦ σταδίου τῶν δ' ἀπὸ μέσου, ἴσῳ τάχει, ἐν ᾧ συμβαίνειν οἴεται ἴσον εἶναι χρόνον τῷ διπλασίῳ τὸν ἥμισυν. ἔστι δ' ὁ παραλογισμὸς ἐν τῷ τὸ μὲν παρὰ κινούμενον τὸ δὲ παρ' ἠρεμοῦν τὸ ἴσον μέγεθος ἀξιοῦν τῷ ἴσῳ τάχει τὸν ἴσον φέρεσθαι χρόνον. τοῦτο δ' ἐστὶ ψεῦδος. οἷον ἔστωσαν οἱ ἑστῶτες ἴσοι ὄγκοι ἐφ' ὧν τὰ ΑΑ, οἱ δ' ἐφ' ὧν τὰ ΒΒ ἀρχόμενοι ἀπὸ τοῦ μέσου,[1] ἴσοι τὸν ἀριθμὸν τούτοις ὄντες καὶ τὸ μέγεθος, οἱ δ' ἐφ' ὧν τὰ ΓΓ ἀπὸ τοῦ ἐσχάτου, ἴσοι τὸν ἀριθμὸν ὄντες τούτοις καὶ τὸ μέγεθος, καὶ ἰσοταχεῖς τοῖς Β. συμβαίνει δὴ τὸ πρῶτον Β ἅμα ἐπὶ τῷ ἐσχάτῳ εἶναι καὶ τὸ πρῶτον Γ, παρ' ἄλληλα κινουμένων. συμβαίνει δὲ καὶ τὸ Γ παρὰ πάντα [τὰ Α][2] διεξεληλυθέναι, τὸ δὲ Β παρὰ τὰ ἡμίση· ὥστε ἥμισυν εἶναι τὸν χρονον· ἴσον γὰρ ἑκάτερόν ἐστιν παρ' ἕκαστον. ἅμα δὲ συμβαίνει τὸ πρῶτον Β[3] παρὰ πάντα τὰ Γ παρεληλυθέναι· ἅμα γὰρ ἔσται τὸ πρῶτον Γ καὶ τὸ πρῶτον Β ἐπὶ τοῖς ἐναντίοις ἐσχάτοις [ἴσον χρόνον παρ' ἕκαστον γινόμενον τῶν Β ὅσον περ τῶν Α, ὡς φησι],[4] διὰ τὸ ἀμφότερα ἴσον χρόνον παρὰ τὰ Α γίγνεσθαι. ὁ μὲν οὖν λόγος οὗτός ἐστιν, συμβαίνει δὲ παρὰ τὸ εἰρημένον ψεῦδος.
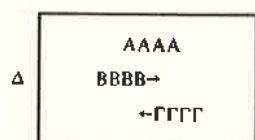
[1] Post μέσου habent FJ²K τῶν Α: om. EHIJ¹, Ross; cf. Simpl. *in Phys.* 1017, 4.
[2] τὰ Α: E²FJK, Simpl. *in Phys.* 1018, 1, Alex. apud Simpl. 1019, 28; τὰ Β: E¹HI; seclusit Ross.
[3] τὸ πρῶτον Β Cornford: τὸ ΑΒ Ε; τὰ Β cett.
[4] Seclusit Ross.

326 Diagram of Alexander *ap.* Simplicium *in Phys.* 1016, 14

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       ┌─────────────┐
       │    AAAA      │
  Δ    │    BBBB→     │   E
       │    ←ΓΓΓΓ     │
       └─────────────┘
```

Α ὄγκοι ἑστῶτες
Β ὄγκοι κινούμενοι ἀπὸ τοῦ Δ ἐπὶ τὸ Ε
Γ ὄγκοι κινούμενοι ἀπὸ τοῦ Ε ἐπὶ τὸ Δ
Δ ἀρχὴ τοῦ σταδίου
Ε τέλος τοῦ σταδίου

325 The fourth is the one about equal bodies which move in opposite directions past equal bodies in a stadium at equal speed, the one row from the end of the stadium [towards us] and the other from the middle [away from us] – in which he thinks it follows that half the time is equal to [its] double. The fallacy consists in requiring that things which move at equal speed past a moving body and past a body at rest of equal magnitude take an equal time. But this is false. For example, let the stationary equal bodies be A, A ... ; let B, B ... be those starting from the middle, equal in number and magnitude to them; let Γ, Γ ... be those starting from the end, equal in number and magnitude to them [sc. the As], and equal in speed to the Bs. Now it follows that the first B and the first Γ are at the end at the same time, as they [sc. the Bs and Γs] move past each other. And it follows that the Γ [sc. the first Γ] has gone right past all of them [sc. the Bs], but the B [sc. the first B] past only half [what it passes, sc. the As]: so the time is half, for each is alongside each for an equal time. And at the same time it follows that the first B has gone past all the Γs; for the first Γ and the first B will be at opposite ends at the same time, because both are an equal time alongside the As. This then is his argument, and it depends on the falsehood we have mentioned.[1]

326 A = stationary bodies.
B = bodies moving from Δ towards E.
Γ = bodies moving from E towards Δ.
Δ = starting-place.
E = goal.

[1] As the square brackets here (and our notes to the Greek text) indicate, **325** bristles with difficulties and uncertainties. For full discussion see e.g. H. D. P. Lee, *Zeno of Elea* (Cambridge, 1936), 83–102, W. D. Ross, *Aristotle's Physics* (Oxford, 1936), 660–6. Aristotle's unsatisfactory exposition is plainly a set of notes originally intended for use in an oral presentation aided by reference to diagrams such as **326**.

The diagram in **326** represents the starting-position of the bodies (presumably contiguous) in the three rows which Aristotle posits in his illustration of Zeno's argument; he apparently assumes, without telling us, that the As are in the middle of the stadium and that the leading Γ begins at the midpoint like the leading B. Aristotle then focuses on a subsequent position that must indeed be reached by the bodies, given the initial hypothesis about their size, speed and direction set out in the first sentence of **325**: viz. the position in which the three rows are all exactly aligned with each other ('the first B

and the first Γ are at the end [presumably of each other's rows] at the same time'). He points out two simple truths: when the first Γ has passed all the Bs, the first B (i) has passed only two As, but (ii) has passed all the Γs. Zeno's mistake, according to Aristotle, was to go on to assume that each moving body must be opposite every body it passes for an equal time. This led him to conclude that (i') the first B takes only half the time to pass half the As as the first Γ takes to pass all the Bs. But from (i') and (ii) it follows that (ii') the time it takes it to pass half the As is also half what it takes it to pass all the Γs. So the first B's passage past half the As takes both the same time and half the time as its passage past the Γs.

It has often been supposed (as in KR) that, despite Aristotle's failure to say so, Zeno must have postulated that his bodies were minimal, indivisible bodies, each of which took a minimal, indivisible time to pass a stationary body. The paradox then constitutes a powerful objection to the postulate, since each B must pass each Γ in half an indivisible time. Yet Aristotle's own version of the argument yields a more satisfying puzzle than he allows. Baldly stated, the assumption he attributes to Zeno does look like a banal mistake. But in order to force us to the conclusion he comes to in **325**, Zeno needs only to get us to accept the plausible idea that if a body moves past *n* bodies of size *m*, it moves a distance of *mn* units; simple arithmetic will then show that moving *mn* units will take half the time of moving *2mn* units at the same speed. Nor is this idea about the measurement of movement easily abandoned in favour of a relative theory. For if the distance a body moves is simply a function of its positions relative to other bodies, is there any absolute basis for ascribing movement to *it* at all?

A comparison with the Arrow suggests itself. Both paradoxes expose difficulties in our ordinary unreflective thought about motion: we often assume that if real and accessible to experience, it must occur in the present moment and be subject to an absolute measure. An obvious alternative in each case is to make the motion of a body a matter of relative position: whether its own earlier and later positions at indivisible instants (as perhaps the arrow) or these relative to those of other bodies (as perhaps the moving rows). But in each case motion is then apparently no longer accessible to direct experience, and as such lacks at any rate the reality we thought it had.

ZENO'S AIMS

327 Plato *Parmenides* 128c (DK 29 A 12) ...ἔστι δὲ τό γε ἀληθὲς βοήθειά τις ταῦτα [τὰ γράμματα] τῷ Παρμενίδου λόγῳ πρὸς τοὺς ἐπιχειροῦντας αὐτὸν κωμῳδεῖν ὡς, εἰ ἓν ἐστι, πολλὰ καὶ γελοῖα συμβαίνει πάσχειν τῷ λόγῳ καὶ ἐναντία αὐτῷ. ἀντιλέγει δὴ οὖν τοῦτο τὸ γράμμα πρὸς τοὺς τὰ πολλὰ λέγοντας, καὶ ἀνταποδίδωσι ταὐτὰ καὶ πλείω, τοῦτο βουλόμενον δηλοῦν, ὡς ἔτι γελοιότερα πάσχοι ἂν αὐτῶν ἡ ὑπόθεσις, εἰ πολλά ἐστιν, ἢ ἡ τοῦ ἓν εἶναι, εἴ τις ἱκανῶς ἐπεξίοι. διὰ τοιαύτην δὴ φιλονικίαν ὑπὸ νέου ὄντος ἐμοῦ ἐγράφη...

327 ...In reality the book is a sort of defence of Parmenides' argument against those who try to make fun of it by showing that, if there is a One, many absurd and contradictory consequences follow for his argument. This book is a retort against those who believe in plurality; it pays them back in their own coin, and with something to spare, by seeking to show that, if anyone examines the matter thoroughly, yet more absurd consequences follow from their hypothesis of plurality than from that of the One. In such a spirit of contention I wrote it while I was a young man...

The *Parmenides* devotes considerable space (127D–128E) to discussion of the point of Zeno's work, evidently because Zeno himself did not declare his own purposes. Plato's assessment in **327** has usually, if not universally, been accepted. It may be that some of Zeno's arguments (e.g. the paradoxes of motion) were not directed at the specific belief that there are many things. But they all assault common sense; and Plato's essential point is that Zeno defended Parmenides against outraged common sense.[1] Again, monism was not Parmenides' central tenet, but as we have seen (pp. 249ff.) he is certainly committed to some form of monism. It is true that some of Zeno's arguments in fact undermine Parmenidean positions as much as pluralistic common sense (pp. 267–9).[2] From this we should not conclude that Zeno was not a Parmenidean, but perhaps that he was a Parmenidean in method rather than in doctrine. That is, his paradoxes should be interpreted as showing that it is no conclusive objection to a philosophical thesis that it leads or seems to lead to absurd conclusions – or if it is, common sense is as vulnerable as Eleatic logic. And the general moral intended will have been the thoroughly Parmenidean exhortation (cf. **294** above): 'Don't just think about conclusions: apply your critical powers to the arguments which produce them.' This interpretation may be supported by Aristotle's assessment of Zeno:

328 Diogenes Laertius VIII, 57 (DK 29 A 10) Ἀριστοτέλης δ᾽ ἐν τῷ Σοφιστῇ φησι πρῶτον Ἐμπεδοκλέα ῥητορικὴν εὑρεῖν, Ζήνωνα δὲ διαλεκτικήν.

328 Aristotle in the *Sophist* says that Empedocles was the first to discover rhetoric and Zeno dialectic.

By dialectic Aristotle has in mind the sort of philosophical interrogation pursued by Socrates in the early Platonic dialogues: the questioner elicits from his interlocutor assent to an *endoxon*, a belief in good standing accepted by everyone or most people or the experts, which he then forces him to abandon whether by reducing it to absurdity or by showing that it conflicts with other beliefs the interlocutor holds. If one suspects the motives or the tactics of the questioner, one will be inclined to charge him with being a mere controversialist (*antilogikos*), which is what Plato had in mind when he described Zeno in the *Phaedrus* thus:

329 Plato *Phaedrus* 261D (DK 29 A 13) τὸν οὖν Ἐλεατικὸν Παλαμήδην λέγοντα οὐκ ἴσμεν τέχνῃ ὥστε φαίνεσθαι τοῖς ἀκούουσι τὰ αὐτὰ ὅμοια καὶ ἀνόμοια, καὶ ἓν καὶ πολλά, μένοντά τε αὖ καὶ φερόμενα;

329 Do we not then know that this Eleatic Palamedes argues with such skill that the same things appear to his listeners to be both like and unlike, both one and many, both at rest and in motion?

[1] KR supported the once popular view that Zeno's principal target was not common sense, but a particular school of philosophical pluralists, namely the Pythagoreans. But there is no solid evidence that the Pythagoreans of this period held any distinctive philosophical views about the pluralities constituted by the contents of the universe (other than that they exhibited *harmonia*), or that Zeno had any such special position in mind.

[2] It is not likely that Zeno explicitly attacked monism, as Simplicius thought Eudemus supposed: **330** Eudemus *ap.* Simplicium *in Phys.* 97, 12 (DK 29 A 16) καὶ Ζήνωνά φασι λέγειν, εἴ τις αὐτῷ τὸ ἓν ἀποδοίη τί ποτέ ἐστιν, ἕξειν τὰ ὄντα λέγειν. (*They say that Zeno used to say that, if anyone would explain to him what the one was, he would then be able to account for existing things.*) **331** Simplicius *in Phys.* 99, 7 (DK 29 A 21) ἐν ᾗ ὁ μὲν Ζήνωνος λόγος ἄλλος τις ἔοικεν οὗτος εἶναι παρ᾽ ἐκεῖνον τὸν ἐν βιβλίῳ φερόμενον, οὗ καὶ ὁ Πλάτων ἐν τῷ Παρμενίδῃ μέμνηται. ἐκεῖ μὲν γὰρ ὅτι πολλὰ οὐκ ἔστι δείκνυσι βοηθῶν ἐκ τοῦ ἀντικειμένου τῷ Παρμενίδῃ ἓν εἶναι λέγοντι· ἐνταῦθα δέ, ὡς ὁ Εὔδημός φησι, καὶ ἀνῄρει τὸ ἓν (τὴν γὰρ στιγμὴν ὡς τὸ ἓν λέγει), τὰ δὲ πολλὰ εἶναι συγχωρεῖ. ὁ μέντοι Ἀλέξανδρος καὶ ἐνταῦθα τοῦ Ζήνωνος ὡς τὰ πολλὰ ἀναιροῦντος μεμνῆσθαι τὸν Εὔδημον οἴεται. 'ὡς γὰρ ἱστορεῖ, φησίν, Εὔδημος, Ζήνων ὁ Παρμενίδου γνώριμος ἐπειρᾶτο δεικνύναι, ὅτι μὴ οἷόν τε τὰ ὄντα πολλὰ εἶναι τῷ μηδὲν εἶναι ἐν τοῖς οὖσιν ἕν, τὰ δὲ πολλὰ πλῆθος εἶναι ἑνάδων.' (*Zeno's argument in this passage seems to be different from the one in his*

book to which Plato refers in the Parmenides. *For there, arguing in support of Parmenides' monism from the opposite point of view, he shows that there is no plurality: but here, as Eudemus says, he both does away with the one (for he speaks of the point as the one), and allows the existence of plurality. However, Alexander thinks that here too Eudemus is referring to Zeno as doing away with plurality. He says: 'As Eudemus records, Zeno the friend of Parmenides tried to show that it is not possible for there to be plurality because there is no "one" among existing things, and plurality is a collection of units.')* Alexander's alternative interpretation of Eudemus is probably correct (cf. Simplicius *in Phys.* 97, 13 (DK 29 A 21)): Eudemus was merely attributing to Zeno the idea that no coherent account can be given of the units of which a plurality must presumably consist - for if the units are indivisible (like points), they have no real existence, but if they are divisible (like ordinary perceptible things) they are not units but pluralities (cf. **316** (a) above).

ZENO'S INFLUENCE

It is unclear whether Zeno's work preceded and influenced the philosophizing of Melissus and Anaxagoras or whether the reverse is the case. A much more decisive impact is evident in the atomism of Leucippus and Democritus, and we discuss it below (pp. 408–9). Among the sophists Gorgias' curious work *On What Is Not* is deeply imbued with Zenonian methods of argument and echoes a number of specific Zenonian trains of thought, while in his advocacy of the construction of contradictory arguments on every subject Protagoras must surely have drawn inspiration from Zeno. Plato's interest in Zeno flowered relatively late in his philosophical life: it resulted in the elaborate and forbidding antinomies which fill the last thirty pages of the *Parmenides* with seminal arguments about motion, place and time (*inter alia*), arguments that were to provide Aristotle in the *Physics* with much stimulus when he came to treat of these topics himself. The discussion of the continuity of motion in the *Physics* clearly owes a more direct debt to Zeno, too, as do the arguments against motion of the early Hellenistic dialectician Diodorus Cronus (Sextus *adv. math.* x, 85ff.). But philosophers have never discussed the paradoxes more intensely than in our own century, ever since Russell succumbed to their fascination in its first decade. Of all the Presocratics Zeno has most life in him today.