

LUCRETIAN RIDICULE OF ANAXAGORAS*

In the first argumentative section of Book 1, Lucretius establishes the existence of matter and void (146–482), and in the second identifies matter as the atoms and defines their properties (483–634). In the third section, following Epicurean tradition, he attempts to refute a representative selection of Presocratic philosophers – Heraclitus (635–704), Empedocles (705–829) and Anaxagoras (830–920) – whose explanations of basic matter are potential rivals to the atomist theory which he has just outlined.¹ The climax to this section is reached in Lucretius' triumphant personal claim to be an original poet and health-bringing purveyor of truth (921–50).² His foregoing criticism (and praise) of the Presocratics as writers and thinkers is deeply coloured by the values he openly professes here. The introductory passages to each philosopher, in particular, are highly revealing of Lucretius' personal inclinations as a poet and exhibit a virtuoso command of several styles and techniques.³

The first two philosophers, Heraclitus and Empedocles, are introduced by elaborate passages in which a brief transition stating each man's theory about the basis of matter leads into a section of heavily embroidered personal comment by Lucretius on each thinker's personality and achievement. Though he rejects both theories, Lucretius takes a strongly contrasting attitude to each man, of blame and praise respectively.⁴ Towards Heraclitus he adopts an aggressively satirical tone and deftly mocks his style, which he judges to be all show, devoid of content. Using the techniques of Heraclitus himself, Lucretius cleverly parodies aspects of his antithetical, figurative, euphonious, rhythmical and enigmatic manner, which he characterizes by the phrase *inversa verba* (642). The passage begins with a probable allusion to the obstreperous tone of Heraclitus in the mock-epic metaphor of battle (638),⁵ and continues with an ironic

* I am grateful to the referees of this article for their helpful suggestions.

¹ For criticism of the Presocratics in Epicurean writings, see Bailey's *Commentary*, ii. 709; W. Rösler, 'Lukrez und die Vorsokratiker', *Hermes* 101 (1973), 62–3; K. Kleve, 'The philosophical polemics in Lucretius', in 'Lucrèce', *Entretiens Hardt* 24 (Geneva, 1978), 64–5. Lucretius has selected chief representatives of monism and pluralism, together with the ultra-pluralism of Anaxagoras, which most nearly approached atomism (for the order, see Rösler, loc. cit. 55 n. 3). The broad scope of his criticisms is indicated by the use of plurals referring to followers or like-minded thinkers (e.g. 641 f., 655 f., 665 f., 782 f., 861) and the allusion to various forms of monism and pluralism (705 f., 712 f., 734 f.).

² The organic connection between this 'digression' and the Presocratic section is demonstrated by L. Lenaghan, 'Lucretius 1. 921–50', *TAPA* 98 (1967), 221–51, esp. 227–36; for the way in which Lucretius prepares for 921–50 see also P. H. Schrijvers, *Horror ac Divina Voluptas* (Amsterdam, 1970), pp. 41–7, 85, 158–60.

³ For an interesting and useful study of these passages see E. D. Kollmann, 'Lucretius' criticism of the early Greek philosophers', *Studii Clasice* 13 (1971), 79–93.

⁴ The contrast is remarked upon by many critics, e.g. Giussani on 635–704; Ernout–Robin on 716 (and Text, i. 28 n. 1); Bailey, ii. 723, 725, 728; P. Boyancé, *Lucrèce et l'Épicurisme* (Paris, 1963), p. 101.

⁵ Kollmann, loc. cit. 82, who also mentions Heraclitus' statement about 'war, the father of all and king of all' (22 B53 DK), to which M. F. Smith (in the Loeb edition) believes there is an ironic allusion, along with the contention that 'strife is right' (B80); less convincingly, M. Rozelaar believes the expression is a sign of Lucretius', not Heraclitus' aggressiveness: *Lukrez: Versuch einer Deutung* (Amsterdam, 1943), p. 70. *Primus* too has satirical point if it not only refers to the usual order of treatment (cf. D.O. fr. 5 Chilton, which exhibits a similar vehemence) but ironically recalls the primacy of Epicurus' generalship in ridding the earth of superstition (1. 66 f., cf. 3. 2, 5. 9, 6. 4 f.); see Lenaghan, loc. cit. 227–8. The '*primus* motif' has also been used of Iphigenia (1. 94) and Ennius (1. 117), and will be applied by Lucretius to himself in 1. 926 f. and 5. 336 f.

reference to his proverbial obscurity⁶ in the punning oxymoron playing on the two senses of *clarus*, 'famous' and 'clear' (639).⁷ Another oxymoron is to be found in 642 (*latitantia cernunt*), where it is sharpened by the choice of the frequentative verb form *latitare* and the connotation of keen vision in *cernere*.⁸ Many commentators have seen a punning reference to the Stoics in *stolidi* (641),⁹ a word used elsewhere by Lucretius only at l. 1068, where Stoic criticism is again possible. It has also been suggested that *inanis* (639) and *stolidi* (641) are a concealed allusion to the semi-technical use of *inanis* and *solidus* to describe void and atoms;¹⁰ at any rate, there seems to be a play upon the literal meanings of *inanis* and *gravis* (640), 'empty' and 'heavy', which are here used in a derogatory metaphorical sense.¹¹ Alliteration and rhyme are much in evidence (e.g. *proelia primus* 638, *gravis...Graios* 640, *admirantur amantque* 641, *inversis...verbis* 642, *constituunt...possunt* 643),¹² and the passage concludes with a scornful mixed metaphor, in which different sensory stimuli are boldly conflated (*belle tangere...auris* 643-4, *lepido...fucata sonore* 644).¹³ In these ways Lucretius has skilfully integrated within the introduction certain aspects of Heraclitus' style, thought and general attitude, concentrating mainly on the important role played by paradoxical

⁶ See Bailey's note and the references in Rösler, loc. cit. 52 n. 3; with *obscuram linguam* cf. the descriptions *obscura* (Cic. *Fin.* 2. 15) and *obscuritas* (Sen. *Ep.* 12. 7). Lucidity, by contrast, was required by Epicurus (D.L. 10. 13, Cic. *Fin.* 2. 15) and claimed as his own special virtue by Lucretius (l. 136-45, 921-2, 933-4).

⁷ Munro compares l. 475 (*clara accendisset saevi certamina belli*). An additional pun on *Ἡρακλείτος/clarus* is suggested by J. M. Snyder, 'The significant name in Lucretius', *CW* 72 (1978-9), 228-9, and *Puns and Poetry in Lucretius' De Rerum Natura* (Amsterdam, 1980), pp. 117-18. For Heraclitus' own use of oxymoron, antithesis and other word plays, see Kollmann, loc. cit. 79-80, Snyder, op. cit. 54-5.

⁸ Kollmann, loc. cit. 84.

⁹ See, e.g., the notes of Munro, Giussani, Duff, Merrill, Ernout-Robin, Leonard-Smith, Bailey and M. F. Smith. Munro, followed by Duff, states that Lucretius 'retorts upon them [the Stoics] their own term of reproach', though he could equally well be echoing the aggressiveness of Heraclitus, as Kollmann thinks (loc. cit. 83 n. 22, also p. 80), or indeed of Empedocles (cf., e.g., 31 B11. 1 DK). It was generally assumed that the criticism of Heraclitus is a covert attack on the Stoics until D. J. Furley's comprehensive denial of specific Stoic criticism by Lucretius in 'Lucretius and the Stoics', *BICS* 13 (1966), 13-33, esp. 15-16. This thesis has been challenged by J. Schmidt, 'Lukrez und die Stoiker. Quellenuntersuchungen zu *De Rerum Natura*' (Diss. Marburg/Lahn, 1975), which I have not seen; see also Kleve, loc. cit. 39-40, 63-70. The presence of *stolidus* in two 'Stoic' locations is highly suggestive (Furley does not address this point) and I would agree with M. F. Smith that, while the Stoics may not be Lucretius' only (or even main) target in the Heraclitus section, it is most unlikely that he wasn't thinking of them at all.

¹⁰ This is the ingenious theory of E. B. Holtsmark, 'Lucretius and the fools', *CJ* 63 (1968), 260-1, who remarks upon the many earlier uses of *inanis* and *solidus* in the same metrical position and concludes: 'Lucretius, it seems, here allows himself a droll critique of those fools, the *inanis* and *stolidi*, who posit fundamental principles of the universe different from his own. It is as though the poet, calling them what he does, involves them inextricably and helplessly in acceptance of his own basic premise on the existence of *inane* and *solidum*.' Snyder, op. cit. 118-19, makes some cogent points in favour of retaining the traditional interpretation, but perhaps Lucretius is capable of making more than one joke at the same time.

¹¹ For the opposition of the words in a context pertaining to void and matter, cf. l. 364-7 (*ergo quod magnū est aequē leviusque videtur, | nimirum plus esse sibi declarat inanis; | at contra gravior plus in se corporis esse | dedicat et multo vacui minus intus habere*).

¹² Several instances are mentioned by Kollmann, loc. cit. 81-5, who compares such techniques with the rhythmical and expressive language of Heraclitus.

¹³ For the suggestion, or rather parody, of Heraclitus' figurative manner see Munro on 635-44 and 644; Duff, Leonard-Smith, Bailey, M. F. Smith, and D. West, *The Imagery and Poetry of Lucretius* (Edinburgh, 1969), p. 26; Kollmann, loc. cit. 84. The phrase *lepido fucata sonore* looks like a deliberate distortion of Lucretius' own stylistic ideal of *lepos*; cf. l. 933-4 (*deinde quod obscura de re tam lucida pango | carmina, musaeo contingens cuncta lepore*), Lenaghan, loc. cit. 229.

language to convey difficult notions (such as the unity of opposites). As Kollmann summarizes; 'It may well be that Lucretius, the poet, wanted to present before the listener a picture of Heraclitus drawn by Heraclitean means, by his language and his style. They are all in here, the elements important for Heraclitus and known from his fragments: his aggressiveness, sharp criticism, the main characteristics of his language, its difficulty and its beauty, and its importance in Heraclitus' philosophy'.¹⁴

By contrast, Empedocles receives an enthusiastic encomium through the medium of his native land Sicily, whose picturesque seaboard, dangerous straits, spectacular volcano and abundant natural resources are set beside the philosopher himself, who is said to excel them all in worth (726 f.). The enigmatic obscurity and seductive artifice on which the fame of Heraclitus was said to depend have as their equivalent here the genuine wonders of Sicily and her native son, which are unfolded in an expansive and grandly rugged style that seems to reflect the philosopher's own manner, described by Aristotle as 'Homeric' and 'metaphorical' among other things.¹⁵ The most notable features of Lucretius' style include the evocative use of epithets (e.g. *Acragantinus* 716, *triquetris* 717, *magnis* 718, *Ionium* and *glaucis* 719, *angusto* and *rapidum* 720), powerful metaphors (e.g. *minantur* 722, *iras* 723, *vomat* 724, *fulgura* 725, *munita* 728), elaborate alliteration (especially of *m*, *v*, and *f* in 722–30) and literary echoes of Homer,¹⁶ which, without referring so specifically to Empedocles' style as the corresponding passage does to that of Heraclitus, nevertheless summon up together the overall quality of his verse. Nor is the portrait only general, for it is possible to detect specific allusions to the author of *Peri Phuseos* and *Katharmoi*. Firstly, the descriptive emphasis on natural elements such as water and fire cannot but refer to the central role of the four elements in Empedocles' physical system,¹⁷ and may be intended to suggest a connection between his thought and the landscape in which he lived and died.¹⁸ Secondly, the religious and oracular imagery which Lucretius applies to his discoveries (*sanctum* 730,

¹⁴ loc. cit. 85.

¹⁵ D.L. 8. 57. The idea that Lucretius' style is influenced here by Empedocles occurred to Ernout-Robin (on l. 716), Lenaghan, loc. cit. 230 and Kollmann, loc. cit. 87–8.

¹⁶ For *vasta Charybdis* (722) cf. Hom. *Od.* 12. 113, 428 (ὄλοην . . . Χάρυβδιν), also Cat. 64. 156, Virg. *Aen.* 7. 302, Prop. 2. 26. 54; *magni magno cecidere ibi casu* (741) recalls *Il.* 16. 776 (κεῖτο μέγας μεγαλωστί), and cf. Virg. *Aen.* 5. 447–8. In addition, 720 seems to echo Enn. *Ann.* 302, and 718–19 and 738–9 may be influenced by Callimachus, as I have tried to show in 'Lucretius and Callimachus', *ICS* 7 (1982), 85–6.

¹⁷ The suggestion that Lucretius has portrayed obliquely the four Empedoclean elements interacting with one another was made by L. MacKay, 'De rerum natura l. 717 sqq.', *Latinitas* 3 (1955), 210. J. M. Snyder, in 'Lucretius' Empedoclean Sicily', *CW* 65 (1972), 217–18, argues that Lucretius has paired the heavy and light elements (water and earth in 718–21, fire and air in 722–5) in a typically Presocratic manner, and has arranged them in a sequence which reflects Empedocles' ascending series of transmigrations through the elements (31 B115 DK), thus conferring immortality on his poetic spirit 'which rises like the bright thunderbolts of Aetna toward the realms of aether'.

¹⁸ MacKay, loc. cit. 210, hints at this in his suggestion that Lucretius may mean to imply that Empedocles at least framed his theory in accordance with the evidence of the senses, unlike Heraclitus. See also Kollmann, loc. cit. 87–8, who contrasts Heraclitus and Empedocles in terms of their closeness to their communities, and also suggests that 'by his description of Sicily Lucretius seems to explain how Empedocles came to this theory of the four elements'. It is also tempting to connect Lucretius' emphasis on Etna with the legend that Empedocles died by leaping into the crater to prove his divinity (e.g. Hor. *A.P.* 463–6, with Brink, D.L. 8. 69), a story which may go back to Heraclides Ponticus, according to W. K. C. Guthrie, *A History of Greek Philosophy* (Cambridge, 1965), ii. 131 n. 1. Incidentally, in view of the way Lucretius links Empedocles with the landscape, it is interesting to read Guthrie's remark that 'anyone who goes to Acragas . . . must feel pleasure that so vivid and dramatic a character was born and lived in so appropriate a setting' (op. cit. p. 129).

divini pectoris 731, *vociferantur* 732, *vix humana... stirpe creatus* 733, *divinitus* 736, *ex adyto... cordis* 737, *sanctius... profatur* 738–9) clearly refers to the mystical, prophetic side of Empedocles, in particular his claim to go among the people of Acragas ‘as an immortal god’.¹⁹ As in the introduction to Heraclitus, punning also has a small role to play when Lucretius describes Empedocles’ (and others’) downfall on the subject of basic matter (*et graviter magni magno cecidere ibi casu*, 741), combining an Homeric echo with a typical *figura etymologica*.²⁰ Despite this qualification, however, the enduring impression of the passage is one of praise and admiration. The inspiration and breadth of Empedocles’ work are justly conveyed by Lucretius’ imagination and poetic language, in homage to the one whose importance to him as a paradigm was hardly, if at all, exceeded by that of Epicurus himself.²¹ Once again, Kollmann’s conclusion deserves quotation: ‘The picture drawn by Lucretius of Empedocles, this miraculous man who could be believed to be a god on account of his personality, his teachings and his poems, this picture seems to correspond well to the fragments of his poems’.²²

These introductory vignettes of Heraclitus, the pretentious impostor, and Empedocles, the flawed visionary, have a personal flavour which is not maintained in the philosophical criticisms that follow. In the case of Empedocles, indeed, it is hard to find any personal reference at all in the list of Lucretius’ objections, which seem intended to apply to others in addition to Empedocles himself. The criticism of Heraclitus and his followers exhibits a little of the sarcasm shown in the introduction, for instance in the charge of madness (*perdelirum* 692, *delirum* 698, *dementia* 704), but nothing so exquisitely honed as the earlier parody.²³ In fact, the Lucretian treatment of each theory is highly selective, dogmatic and biased towards vindication and clarification of the Epicurean view. This, together with certain apparent anachronisms

¹⁹ B112 DK. Many critics have referred to this fragment, including Munro, Giussani, Merrill, Ernout–Robin, Leonard–Smith, Bailey, and M. F. Smith; see also Kollmann, loc. cit. 90 n. 51 and Rösler, loc. cit. 54 n. 2, who argues that the Lucretian and other references to the divinity of Empedocles stem from a misunderstanding of the original passage.

²⁰ cf. *Il.* 16. 776 (n. 16 above), and for the word play see Snyder, op. cit. 82, 124. I do not mean to imply that the use of puns is Empedoclean, but that, as a satirical device, punning provides a small link between the Lucretian attacks (for Anaxagoras, see below and n. 38).

²¹ For the influence of Empedocles on Lucretius, see F. Jobst, ‘Über das Verhältnis zwischen Lukretius und Empedokles’ (Diss. Erlangen, 1907), W. Kranz, ‘Lukrez und Empedokles’, *Philologus* 96 (1944), 68–107, reprinted in *Studien zur antiken Literatur und ihrem Fortwirken*, Kleine Schriften, ed. E. Vogt (Heidelberg, 1967), 352–79, O. B. Niccolini, ‘De T. Lucretio Caro’, *Latinitas* 3 (1955), 280–6, J. Bollack, ‘Lukrez und Empedokles’, *Die Neue Rundschau* 70 (1959), 656–86, Boyancé, op. cit. p. 102 n. 3. The religious imagery ties in with language used elsewhere of Epicurus and others, including Lucretius himself; for the oracular metaphor cf. 3. 14, 6. 6 (Epicurus), 5. 111–12, a repetition of 1. 738–9 (Lucretius); for the epithet *sanctus* (730) cf. 3. 371, 5. 622 (Democritus), and for *divini pectoris* (731) and *bene ac divinitus* (736) cf. 5. 8, 49–54 (including the same phrase *bene ac divinitus*) and 6. 7 (all three passages in reference to Epicurus); see further F. Giancotti, *Il preludio di Lucrezio* (Messina and Florence, 1959), p. 79. To continue with other interconnections, Empedocles is said to be in the forefront (*cum primis* 716, *inferiores* 734), like Epicurus, Ennius, Heraclitus (n. 5 above) and Lucretius; like Lucretius again, he composes *carmina* (731, cf. 1. 934, 3. 420, singular in 1. 143, 946, 5. 1, 6. 937), which, if *praeclara reperta* (732) hints at clarity as well as distinction (contrast *obscura reperta*, 1. 136), are written in a lucid style. See further Lenaghan, loc. cit. 230 f., and for the view that Empedocles’ self-portrait influenced Lucretius’ portrayal of Epicurus see O. Gigon in ‘Lucrèce’, *Entretiens Hardt* (n. 1 above), 170.

²² loc. cit. 91.

²³ Others have attempted to identify specific gibes at Heraclitus in the conjecture *Musae* (657), interpreted as an ironic reference to Heraclitus or the title of his work (a suggestion developed by E. Bignone in ‘Le Muse eraclee in Lucrezio’, *Miscellanea di studi critici in onore di E. Stampini* [Turin, 1921], 229–31, and accepted by some, e.g. Ernout–Robin, but not by Bailey,

and errors of interpretation, persuades Rösler that Lucretius' philosophical knowledge of the Presocratics could, or even must, have derived from an Epicurean doxography and not his own study of the original texts.²⁴ This suggestion should be treated with caution in view of Lucretius' demonstrably wide reading in other areas of Greek literature. Moreover, he certainly read Empedocles first-hand, which did not prevent him from short-changing his philosophy,²⁵ and the excellent parody of Heraclitus' style argues for at least some direct acquaintance. Therefore, perhaps he felt compelled to treat the Presocratics as he does because of Epicurean tradition, or because it was convenient or polemically advantageous.²⁶ Whatever the explanation is, however, it does seem clear that his poetic imagination was less inspired by the rather pedestrian criticisms pertaining to change, the void, infinite divisibility and so on than by the colourful introductory passages, which breathe with the life of his personal values.

It is therefore with the anticipation of something similar that the reader moves on to Anaxagoras, and with some surprise that he discovers a different approach altogether. Instead of an elaborate and personal proem, an abrupt, unadorned introduction leads straight into a description and criticism of the theory of *homoeomeria*.²⁷ One can only speculate about why Lucretius seems not to have felt a personal relationship, negative or positive, to Anaxagoras, as he had to Heraclitus and Empedocles. Perhaps he had no reason to praise or blame his philosophy strongly, given the ambivalent relationship of both similarity and difference between atomism and Anaxagoras (Epicurus is said to have specially favoured Anaxagoras, together with Archelaus, among early philosophers, though he disagreed on some points);²⁸ perhaps the popular tradition about Anaxagoras failed to present Lucretius with a persona he could easily exploit²⁹ (and his original work, whose fragments lack the individuality of a Heraclitus or Empedocles, will have been no substitute).³⁰ The

K. Büchner, 'Lukrez und Vorklassik', *Studien zur Römischen Literatur* 1 [Wiesbaden, 1964], 142, West, op. cit. pp. 73–4 and others); also in the road image (659), as applied to someone 'who himself expressed doubt about the possibility of finding the path' (Lenaghan, loc. cit. 228 n. 26, referring to B 45, 108), in the use of *cernunt* (660), taken to be an ironic repetition of 642 and 657 (Leonard-Smith) and in *nilo clara minus* (697), which could be another allusion to Heraclitus' obscurity (Lenaghan, loc. cit. 230). One wonders whether *ex uno si sunt igni puroque creatae* (646) could be a pun upon *πῦρ* (cf. 658).

²⁴ loc. cit. 48–64, esp. 61–4. Various other critics who have doubted that Lucretius' knowledge was acquired first-hand are listed on p. 49 n. 1. ²⁵ Rösler, loc. cit. 54–7.

²⁶ Lucretius advocates Epicureanism in the proselytizing spirit of a missionary, not like an objective scholar, so it is only natural to expect unfairness in his polemics. The satirical streak in his attacks on opposing thinkers is firmly rooted in a tradition begun by Epicurus and carried on by his later followers: see Kleve, loc. cit. (n. 1 above) 39–71 passim, esp. 49, 60 f.; however, some of the harsher abuse attributed to Epicurus is probably due to hostile propaganda: see D. Sedley, 'Epicurus and his professional rivals', *Cahiers de Philologie* 1 (1976), also entitled *Études sur l'Épicurisme antique*, 119–59.

²⁷ Boyancé, op. cit. p. 104, Kollman, loc. cit. 92.

²⁸ D.L. 10. 12. Anaxagorean theories about celestial phenomena are apparently alluded to in a friendly spirit in *Pyth.* 92–6, 101, 105–6. The only direct reference to Anaxagoras by Epicurus, in a fragment whose authorship is questionable, describes someone, possibly Nausiphanes, as reading the works of Anaxagoras and Empedocles and quibbling about them (Fr. 104 Arr.). On Anaxagoras and Epicurus, see further Bailey, ii. 744 and Sedley, loc. cit. 135–6, 155 n. 59, who suggests that Epicurus might have set out to 'assume the mantle of Anaxagoras and Archelaus' at Lampsacus.

²⁹ Possibly Lucretius knew nothing more, or less, than the little we know about Anaxagoras' life, for which see G. S. Kirk and J. E. Raven, *The Presocratic Philosophers* (Cambridge, 1957), pp. 362f. and Guthrie, op. cit. pp. 266 f. His reputation for lack of interest in public affairs, his prosecution for impiety, and his exile in Lampsacus (like Epicurus) are things which might have endeared him to Lucretius, if he knew about them.

³⁰ His style is 'attractive and dignified' (D.L. 2. 6), but flat in comparison with the other two.

absence of a personal introduction has led to a little disagreement among commentators as to Lucretius' real feelings towards Anaxagoras; thus, while most interpret his attitude as neutral, Munro, for instance, claims that Lucretius felt sympathetic towards him,³¹ whereas Paladini thinks that the polemics against Anaxagoras are especially violent.³² Opinions differ too about the literary and philosophical quality of the Lucretian critique, with Masson, for instance, describing it as an 'elaborate and vigorous refutation',³³ while Kollmann's verdict is that 'there remains only professional discussion in a rather dry vein, as done in the third sections of the criticism of Heraclitus and Empedocles'.³⁴ I wish now to dispute the latter judgement, for it seems to me that the treatment of Anaxagoras' theories is far livelier than the corresponding sections on Heraclitus and Empedocles, as if Lucretius has redirected the inventive imagination which he earlier applied to personal characterization into an entertaining presentation and critique of Anaxagoras' ideas.

The grand strategy of this critique consists of initially presenting the theory of *homoeomeria* in 830–42 as 'simple and reckless pluralism', in a 'crude form'³⁵ (namely that all substances consist solely of bits of the same substance) which is easily demolished (843–74), thus enabling Lucretius to represent the subtle idea that 'everything exists in everything' as a desperate last resort (875 ff.) rather than appreciating its importance as the 'cornerstone of Anaxagoras' physics'.³⁶ The climactic final section (875–920) is highly effective from a rhetorical point of view, though its arguments, such as the *reductio ad absurdum* that blood should appear in crushed corn (881–4), fail to do justice to Anaxagoras and have often been accused of crudeness and naiveté.³⁷ No doubt Lucretius had only a vague and distorted

³¹ On l. 830–74.

³² V. Paladini, *Lucrezio: il poema della natura* (Rome, 1946), p. 59.

³³ J. Masson, *Lucretius: Epicurean and Poet* (London, 1907), p. 108.

³⁴ loc. cit. 92.

³⁵ C. Bailey, *The Greek Atomists and Epicurus* (Oxford, 1928), p. 35. It has been argued that a major flaw in Lucretius' definition is his inclusion of the Empedoclean elements (earth 840, fire and water 841, air 853) among substances like bone and flesh, whereas Aristotle implies that Anaxagoras placed them in a different category of complexity: see, e.g., F. M. Cornford, 'Anaxagoras' theory of matter', *Studies in Presocratic Philosophy* 2, ed. R. E. Allen and D. J. Furley (Atlantic Highlands, 1975), p. 279, who attributes the error to a misunderstanding of Arist. *Metaphys.* 984a 14 by later writers (e.g. Theophrastus); also R. Mathewson, 'Aristotle and Anaxagoras', *CQ* n.s. 8 (1958), 77–8, Guthrie, op. cit. p. 293 and n. 2, Rösler, loc. cit. 59–60. But the Aristotelian evidence contrasting the elements of Empedocles with those of Anaxagoras is highly problematical; for further discussion see, e.g., G. Vlastos, 'The physical theory of Anaxagoras', *Studies in Presocratic Philosophy* 2 (see above) 339–40, 352 n. 84, J. B. McDiarmid, 'Theophrastus on the Presocratic causes', *H.S.C.P.* 61 (1953), 111 f., G. B. Kerferd, 'Anaxagoras and the concept of matter before Aristotle', *Bulletin of the John Rylands Library* 52 (1969), reprinted in *The Pre-Socratics: a Collection of Critical Essays*, ed. A. P. D. Mourelatos (New York, 1974), pp. 494 f., M. Schofield, *An Essay on Anaxagoras* (Cambridge, 1980), pp. 125 f., who arrives at the conclusion that Anaxagoras counted among basic ingredients the 'opposites ... air, aither, earth ... and the seeds of animals and plants and (probably) their tissues' (p. 132), to which he also adds water.

³⁶ Munro on l. 875–9; cf. Bailey, op. cit. pp. 41 f. The technique of first presenting an opponent's view crudely and then in a more sophisticated form, as if designed to defend the initial crudity, is a common polemical tactic: cf., e.g., the progression of arguments against the Epicurean doctrine that 'all sensations are true' in Plut. *adv. Col.* 1109 f. Also traditional is the technique of creating a dilemma and driving the opponent to resort to further improbabilities, from which ridiculous consequences are inferred; see Kleve, loc. cit. 58–63, a general discussion of Lucretius' polemical tactics. Although Lucretius clearly distorts Anaxagoras, this is not the place to tackle the thorny problem of what exactly was meant by 'everything in everything'; for recent accounts of his theory of matter see Guthrie, op. cit. pp. 279–94 (with bibliography on 280 n. 1) and Schofield, op. cit. pp. 100–44.

³⁷ See, e.g., Bailey, op. cit. pp. 36–7 and *Commentary*, ii. 743, 752; Mathewson, loc. cit. 81; Boyancé, op. cit. p. 105; H. D. Rankin, 'Lucretius on "Part of Everything is in Everything"', *AC* 38 (1969), 158–61.

conception of Anaxagoras' theory, and this partly explains the inadequacy of his criticisms. But since it is in the nature of polemics to take a superficial view of an opponent's philosophy, we would do well not to overlook an element of sheer misrepresentation, both here and elsewhere (as, for instance, in the equally unfair attack on scepticism in 4. 469 ff.). And so before Lucretius is too hastily convicted of unintelligence, full allowance must be made for the satirical nature of the whole passage, which draws upon a large arsenal of techniques: note, for example, the contemptuous pun on *latitare* (875–7, 890, *latet* 871) and the more serious play upon *ignis* and *lignum* (891–2, 901, 911 f., anticipated in 871–4),³⁸ the use of popular conceptions of 'adynata' (881 f.),³⁹ the imaginary interlocutor (897 f.), whose brilliant description of forest fires contains the grandiloquent metaphor *flammai . . . flore* (900), which Lucretius proceeds to use against him by a series of ironically botanical terms (*insitus* 901, *semina* 902, *creant* 903),⁴⁰ and finally the whimsical picture of particles shaking with tears of laughter (919–20).⁴¹ In these and other ways the whole passage from 875 to 920 is enlivened by word play and fantasy, whose effect is to disguise the unfairness of Lucretius' criticisms and present Anaxagoras in a ridiculous light.⁴²

Given the plainly satirical character of this famous section, it seems worthwhile to subject to closer analysis the less well-known first half of the Lucretian critique, which has found few admirers; this is the passage in which the doctrine of *homoeomeria* is defined and criticized (830–74). Although there is nothing in the introduction to Anaxagoras to match the personal comments on Heraclitus and Empedocles, I believe that Lucretius has compensated right from the start for the resultant lack of interest by infusing irony and parody into his outline of and initial objections to the Anaxagorean theory. The opening passage is printed below, with italic type to highlight the most noticeable feature of the style:

nunc et Anaxagorae scrutemur *homoeomerian* 830
 quam Grai memorant nec nostra dicere lingua
 concedit nobis patrii sermonis egestas,
 sed tamen ipsam rem facilest exponere verbis.
 principio, rerum quam dicit *homoeomerian*,
ossa videlicet e *pauxillis atque minutis* 835
ossibus hic et de *pauxillis atque minutis*
visceribus viscus gigni sanguenque creari
sanguinis inter se multis coeuntibus guttis
 ex *aurique* *putat* micis consistere posse
aurum et de *terris terram* conrescere parvis, 840
ignibus ex *ignis*, *umorem umoribus* esse,
 cetera consimili fingit ratione *putatque*.

(1. 830–42)

³⁸ There is also an aural play upon *latices* and *lactis* (886–7), and alliteration of *fr* in 881–2, 888–9, 892. For discussions of the *ignis/lignum* pun see P. Friedländer, 'Pattern of sound and atomistic theory in Lucretius', *AJP* 62 (1941), 17; West, *op. cit.* p. 97; Snyder, *op. cit.* 41–2, 130–3.

³⁹ Rankin, *loc. cit.* 160–1.

⁴⁰ West, *op. cit.* pp. 24–5. Leonard-Smith seem to suggest that the example of spontaneous forest fires goes back through Thucydides (2. 77) to Anaxagoras.

⁴¹ These lines are very similar to 2. 976–7 and were condemned by Forbiger, who has found a few supporters (see Merrill's note), of whom K. Müller is the most recent. But it is quite in Lucretius' manner to conclude with a *reductio ad absurdum*, and the grotesque parody of *homoeomeria* makes a perfect climax to the whole critique. Of course, Lucretius also wishes to convey a serious epistemological point about the limitations of arguing from the visible to the invisible (Lenaghan, *loc. cit.* 235).

⁴² Lucretius' polemical tendency to abandon the plane of logic for the realm of the extravagant and grotesque has been excellently observed by L. Perelli, with reference to the Anaxagorean passage: see *Lucrezio: poeta dell'angoscia* (Florence, 1969), pp. 330–1, where the Lucretian technique is likened to surrealism.

The brief transition in 830–3 seems innocent enough compared with the introductory lines about Heraclitus, but are there not some sarcastic intimations? The verb *scrutemur* (830) stands out in particular, and seems to call for stylistic analysis. It is an old and colloquially based word, which literally means searching among rags or trash (*scruta*), hence ‘to examine thoroughly’, especially in reference to something hidden or difficult.⁴³ The metaphorical sense in which Lucretius uses it here is found as early as Ennius (*Sc.* 244) and later in Cicero, Quintilian, Tacitus and others; elsewhere he also employs the literal meaning (3. 985, of birds probing the breast of Tityos, 6. 809, of miners), which is found since Plautus (*Aul.* 651); the word is rare in Republican and Augustan poets.⁴⁴ The best comment on its present use has been made by West, who perceptively defines its suitability for the subject matter at hand: ‘This word implies a search into the hidden details of something, a search beneath the surface. Since the theory of *homoeomeria* is that every substance is composed of a congeries of particles of itself, *scrutemur* is a live poetic word’.⁴⁵ To which one would only wish to add that this down-to-earth verb, with its connotations of literally rummaging through or ransacking material, produces a slightly grotesque effect when flanked by an impressive Greek proper name and technical term. The word *homoeomeria* may not have been used by Anaxagoras,⁴⁶ but Lucretius evidently thought it was (*dicat*, 834) and, I believe, treats it with some of the same irony which he directs at another Greek term, *harmonia*, in Book 3.⁴⁷ This is seen in the ponderous repetition of the word in 834, and in the intervening assertion that *homoeomeria* is easy to explain though impossible to translate directly into Latin, which apparently contradicts 1. 136–9 (where it is said to be difficult to elucidate obscure Greek discoveries in Latin)⁴⁸ and may question implicitly the need for such pretentious Greek formations.

⁴³ See A. Ernout–A. Meillet, *Dictionnaire étymologique de la langue latine* (Paris, 1959), s.v. *scruta*.

⁴⁴ cf. Hor. *Sat.* 2. 3. 276, *Ep.* 1. 18. 37, Ov. *Met.* 15. 137; in the first century A.D. it became more popular, as the following sample of numbers shows: Manil. 7, Sen. *Epigr.* and *Tr.* 7, Luc. 6, Stat. 14, Sil. 1, Juv. 2.

⁴⁵ op. cit. 125. For uses with a comparable force cf., e.g., Cic. *N.D.* 3. 42 (ii qui interiores scrutantur et reconditas litteras), *de Or.* 2. 146 (scrutari locos, ex quibus argumenta eruamus), Quint. 1. 4. 25, 5. 14. 28, Tac. *Ann.* 16. 5. From a somewhat different point of view, Lenaghan describes it as ‘a businesslike and appropriate word’ in the light of the close relation of Anaxagoras to atomism (loc. cit. 233).

⁴⁶ Munro (on 834), Bailey (on 830, and op. cit. pp. 551–6) and others judge it to be authentic, and G. Vlastos does not reject the possibility (loc. cit. 332, 349 nn. 65–6); most modern scholars, however, are opposed to this view: see Kirk–Raven, op. cit. pp. 386–8, Mathewson, loc. cit. 77–81, Guthrie, op. cit. pp. 325–6, Rösler, loc. cit. 58–9, M. Schofield, ‘Doxographica Anaxagorea’, *Hermes* 103 (1975), 4–6, op. cit. 153 n. 39. Most probably, the adjective *ὁμοιομερής* was coined and first applied to Anaxagoras by Aristotle. The noun is found first in Epicurus (fr. 24. 33. 2, 29. 27. 7, 30. 7. 5, 12. 5, 28. 4 Arrighetti, and cf. Diels, *Dox.* 307ab 3, discussed by E. Bignone, *Boll. di Fil. Class.* 17 [1910–11], 135–8; 26 [1919–20], 60–3), used apparently in a technically Epicurean way and without reference to Anaxagoras, but in the same abstract sense of the singular – ‘the attribute of being homoeomerous’ – as in Lucretius (the plural is used in D.O. fr. 5, Col. 2. 6 Chilton and elsewhere to describe the physical elements of Anaxagoras). It is possible, therefore, that the noun was an Epicurean term, which Lucretius may have found applied to Anaxagoras in his Epicurean source; see further D. Lanza, *PP* 18 (1963), 281–9 and Schofield, loc. cit. 5–6. The specialized Epicurean usage seems to have escaped Lucretius, who treats the word as a technical term belonging to Anaxagoras alone.

⁴⁷ 3. 131–5 (redde harmoniai | nomen, ad organicos alto delatum Heliconi; | sive aliunde ipsi porro traxere et in illam | transtulerunt, proprio quae tum res nomine egebat. | quidquid <id> est, habeant), where see Kenney’s notes.

⁴⁸ cf. also 3. 260, where Lucretius again stresses the difficulty (261); for other references to Greek terminology cf. 3. 100, 6. 424, 6. 908. For another translation into Latin of the concept of *homoeomeria*, cf. Cic. *Ac.* 2. 118.

As for the definition of *homoeomeria* itself, the iteration of seven examples of basic stuffs, together with the exact reproduction of *pauillis atque minutis* (835–6) and the recurrence of *putat* (839, 842), make this one of the most repetitive passages in Lucretius. Of course, there are many other examples of multiple repetition in the poem, for it is one of his most fundamental aesthetic and argumentative devices, but in none except 2. 1112–15 (to which we will return) does it appear with quite the same orderly concentration.⁴⁹ Apart from its numerical extent (eleven words, counting *homoeomerian*), the obtrusiveness of its display is notable. Almost all the repeated words stand at conspicuous points in the verse, such as the beginning and end. Most of the second occurrences come either in the same metrical position (*homoeomerian*, *pauillis atque minutis*, *ossibus*, and, virtually so, *aurum*) or in close proximity (*visceribus viscus*, *terris terram*, *ignibus ex ignis*, *umorem umoribus*).⁵⁰ Add to this various rhyming effects, such as *-que* (835–7), *co/con* (838–40), *e*, *de*, and *se* (835, 836 and 838), *posse* and *esse* (839 and 841), and also the many terminations in *-is*.⁵¹ The most outstanding verses are perhaps 835–6, which with their emphatic *homoeoarcton* and *homoeoteleuton* constitute ‘probably the most striking single couplet in the *De Rerum Natura* from the point of view of repetition’.⁵²

The style is unusual enough to have elicited some comment from interpreters of Lucretius. Ernout, for instance, observes that the repetitions are ‘par souci de clarté dans l’exposé’,⁵³ and a similar point is made by Schrijvers, who cites the passage to illustrate the poet’s ‘habitude de concrétiser toute notion générale et abstraite’.⁵⁴ Bailey notes, laconically, ‘an emphatic Lucretian repetition’, but elsewhere he states that in 835–6 the whole phrase is repeated in order to express the identical idea.⁵⁵ On the same lines, West remarks that ‘in 1. 835–7, where bones are composed of tiny pieces

⁴⁹ His practice extends from the repetition of one word in the same line to the complicated interweaving of several words over a number of lines, and ultimately to the quasi-formulaic use of repeated phrases, lines and passages throughout the poem. For general discussion see Bailey’s *Commentary*, i. 155–8, 161–5; R. E. Deutsch, ‘The Pattern of Sound in Lucretius’ (Diss. Bryn Mawr, 1939); W. B. Ingalls, ‘Repetition in Lucretius’, *Phoenix* 25 (1971), 227–36; J. D. Minyard, ‘Mode and value in the *De Rerum Natura*’, *Hermes Einzelschriften* 39 (Wiesbaden, 1978). For his use of close or directly juxtaposed repetitions, such as abound in the present passage, see Merrill on 3. 71; E. Breazeale, ‘Polyptoton in the hexameters of Ovid, Lucretius and Vergil’, *Studies in Philology* 14 (1917), 306–18; Deutsch, op. cit. ch. 3, esp. pp. 22 f., 25 f., 29; Rozelaar, op. cit. p. 37; West, op. cit. pp. 119–20, and note the parody of Lucretius in Pers. 3. 83–4 (*aegroti veteris meditant somnia, gigni | de nihilo nihilum, in nihilum nil posse reverti*, cf. Lucr. 1. 150, 155–6, 237), which is mentioned by L. Alfonsi in ‘Lucrèce’, *Entretiens Hardt* (n. 1 above), p. 293. Some very similar expressions in Book 2 seem to hark back to the Anaxagorean passage: cf. 2. 731 f. (*ne forte haec albis ex alba rearis | principiis esse, ante oculos quae candida cernis, | aut ea quae nigrant nigro de semine nata*), 790–1, 823–4, 902–3, 930, 932, and see Schrijvers, op. cit. p. 225.

⁵⁰ Note also the careful organization, whereby three examples drawn from the body (835–7) and three ‘Empedoclean’ elements (840–1) are deployed around the mineral gold (839–40).

⁵¹ Deutsch, op. cit. pp. 76–7, also 135–6, where she shows that the whole passage 830–74 abounds in rhyme at the beginning and end of the verse.

⁵² Deutsch, op. cit. p. 76.

⁵³ Note on 835, along with a comment on the effective placement of the repetitions at the verse-beginning or after a caesura; cf. also E. Paratore and U. Pizzani, *Lucreti De Rerum Natura* (Rome, 1960), pp. 182–3, who note the use of repetition throughout the Anaxagorean section to aid the ‘slow and cautious’ progress of the argument.

⁵⁴ op. cit. pp. 236–7 and n. 2; also Paratore–Pizzani, op. cit. p. 182, who comment on Lucretius’ constant reference to sense-data and his fascination with the infinitely small.

⁵⁵ ‘Sometimes the poet has said well and accurately just what he wants to say, and when he wishes to say it again he does not hesitate to use the same phrase again’ (*Commentary*, i. 161, cf. 157).

of bone and flesh of tiny pieces of flesh, the line about bone has the same sound and appearance as the line about flesh',⁵⁶ which he would define as an instance of 'indirect onomatopoeia', whereby metrical and syntactical forms are manipulated to embody an underlying factual principle: thus the sameness of expression emphasizes the universal applicability of the theory, and backs up the notion of material sameness (*homoeomeria*).

There is much truth in these observations about clarity and the relationship of style to thought. More than the theories of Heraclitus and Empedocles, the idea of *homoeomeria* demands concrete examples and the use of repetition for its analytical description, particularly in a poem, in which the terse abstraction characteristic of philosophical treatises would lack any imaginative impact. Nevertheless, the elaborate repetition described above seems to extend beyond mere utility to the realm of deliberate affectation. As Bailey has observed, Lucretius is attributing to Anaxagoras a particularly crude form of pluralism,⁵⁷ and it may be that this is reflected by his choice of a monotonously repetitive style, whose stiffness contrasts with the more flexible and varied manner in which he has previously defined the interlacing of atoms:

adiutamur enim dubio procul atque alimur nos
certis ab rebus, certis aliae atque aliae res.
nimirum quia multa modis communia multis
multarum rerum in rebus primordia mixta
sunt, ideo variis variae res rebus aluntur.

(l. 812–16)⁵⁸

The multiple, interwoven repetitions and inventive word arrangements are, as Giussani and others have perceived, intended to bring alive or symbolize the very idea under discussion, that similar atoms are interlaced in different ways within many different things.⁵⁹ By contrast, the unvaried repetitions of the Anaxagorean passage correspond to the unending proliferation of distinct substances which, according to Lucretius, constitutes the theory of *homoeomeria*. Indeed, the suspicion of incipient mockery in Lucretius' description becomes almost irresistible when he applies to Anaxagoras the verb *putat* (839), conspicuous for its subjectivity, and then repeats it lamely in the concluding line (842, cf. also 877, 916),⁶⁰ in combination with the palpably derogatory word *figit* (cf. also 847, 917).⁶¹ However, the satirical strategy of Lucretius will emerge more clearly from an examination of the ensuing criticisms of *homoeomeria*.

⁵⁶ op. cit. p. 118.

⁵⁷ n. 35 above.

⁵⁸ cf. also l. 894–6.

⁵⁹ See Giussani on 814, Bailey on 814–16, West, op. cit. p. 119. The unusual extent and variety of the repetition is shown by Deutsch, op. cit. p. 45.

⁶⁰ cf. the repetition of *putarunt* at the end of l. 705 and 708, where Lucretius is reporting the views of monists, and of *putabant* at the end of adjacent lines in 5. 1178–9, where the subject is superstitious belief. For further uses of the word to distance the author from the unscientific beliefs of others, cf. especially the formulae *si (forte) putas, ne (forte) putes*, and, e.g., l. 635, 3. 801, 4. 1236, 5. 22, 159, 1041, 6. 851.

⁶¹ 'Connotes falsity', according to Leonard-Smith (on l. 104), and is 'one of Lucretius' favorite verbs for denoting futile or deliberately deceitful rationalization', in the words of Lenaghan, loc. cit. 233 n. 41, who comments on the accumulation here of deprecatory vocabulary: '*putat* (839, 842, 877), *figit* (842, 847), *nec concedit* (843–44) and *sumit* (876) describe Anaxagoras' somewhat arbitrary thought process, which takes him far from the truth (846, 880)' (loc. cit. 233).

There are three of these (843–6, 847–58, 859–74), which increase in length and overt sarcasm, as Lucretius warms to the role of prosecuting counsel. The first illustrates the dogmatic standpoint from which Lucretius criticizes the Presocratics, for it contains two points which he has used previously – the objection about denial of void (843), which was levelled against Heraclitus (655 f.) and Empedocles (742 f.), and the objection about infinite divisibility (844), which was aimed at Empedocles (746 f.).⁶² And, just as previously he ascribed timidity to the followers of Heraclitus in their refusal to admit void (*fugitant* 658, *metuunt* 659), so here he hints at a certain intransigence on the part of Anaxagoras (*nec...concedit* 843–4). The second argument (847–58) attacks the *primordia* of Anaxagoras for being too weak, which is the same charge he has already brought against Empedocles (753 f., cf. also the related objection to Heraclitus in 565 f.). But the comparatively flat style in which the argument was originally presented is now enlivened by satirical techniques such as the ironical doubt whether they deserve the name *primordia* (848),⁶³ the picturesque verb *refrenat* (850), the lurid metaphor *leti sub dentibus ipsis* (852)⁶⁴ and the belittling series of pithy rhetorical questions (851–3),⁶⁵ which pick up from the initial definition of *homoeomeria* the examples of fire, water, blood, and bone (cf. 841, 837, 835), with the addition of air. Finally, as so often in his treatment of the Presocratics, Lucretius falls back on a point of dogma which has been previously established (857–8).⁶⁶

But the most interesting argument for our purposes is the last one in 859–74, in which Lucretius poses some dilemmas in order to demonstrate the absurdities which proceed from Anaxagoras' theory when it is pressed to explain change: since our bodily parts receive nourishment from food, either they are nourished by things of alien substance (this appears to be the missing sense after 860) or, if food contains little bodies of sinews, bones and blood, food itself consists of alien substances – propositions which are both incompatible with the theory of *homoeomeria*, as are the similar conclusions drawn from observing the fruits of the earth (867–9) or the products of burning wood (870 f.). We know that Anaxagoras addressed the very problem of growth and nutrition which Lucretius raises,⁶⁷ so it is rather unfair of him to represent it as an independent objection. Moreover, the theory of Anaxagoras is further prejudiced by a satirical tone, which owes much to repetition. Though defensible as a proper analytical tool for

⁶² On the repetitive and polemical nature of these objections to Anaxagoras see Lenaghan, loc. cit. 233 f., Rösler, loc. cit. 60.

⁶³ cf. Juv. 3. 288–9 (*miserae cognosce prohoemia rixae, | si rixa est, ubi tu pulsas, ego vapulo tantum*).

⁶⁴ The commentators quote no parallel except for Dante, *Purg.* 7. 32, but cf. also Sen. *H.F.* 555 (*mors avidis pallida dentibus*). Duff seems right to identify the image as one of 'a devouring animal', and cf. Leonard-Smith and West, op. cit. p. 130 n. 11; O. Regenbogen uses the line rather extravagantly to exemplify Lucretius' primitive horror of death, and refers to archaic representations of demons: 'Lukrez. Seine Gestalt in seinem Gedicht', *Neue Wege Zur Antike*, 2. 1 (Leipzig and Berlin, 1932), 52. One suspects that Lucretius has tailored the image ironically to suit the examples of blood, bones and flesh (835–8, 853), which we are to imagine being torn up by 'the teeth of death'.

⁶⁵ For this technique cf., e.g., 4. 118 f., 5. 43 f., 220 f., 6. 390 f.

⁶⁶ i.e. in 1. 149–214. Cf. the parallel passages in the criticisms of Heraclitus (672–4) and Empedocles (756–8).

⁶⁷ 59 B 10 DK, Arist. *G.A.* 723a 11, *Simpl. Phys.* 460. 15–19 (59 A 45 DK), Aet. 1. 3. 5 (59 A 46 DK). See further Bailey, op. cit. pp. 35 f., Cornford, loc. cit. 277f., 282f., Vlastos, loc. cit. 325, Guthrie, op. cit. pp. 287 f. But Schofield disputes the emphasis of Aristotle and the doxographical tradition on biological considerations as a foundation for the theory of 'everything in everything': op. cit. pp. 106, 121 f., 129 f., 133 f., 136–43. On the authenticity of B 10 see further n. 83.

clarifying the argument, this extensive repetition also strikes the reader as an exaggerated and disordered version of the style used earlier to define *homoeomeria*:

praeterea quoniam *cibus* auget corpus alitque,
scire licet nobis *venas* et *sanguen* et *ossa* 860

*⁶⁸

sive *cibos* omnis commixto corpore dicent
esse et habere in se *nervorum* corpora parva
*ossa*que et omnino *venas* partisque cruoris,
fiet uti *cibus* omnis, et aridus et liquor ipse,
ex alienigenis rebus constare putetur, 865
ossibus et *nervis* sanieque et *sanguine* mixto.
praeterea quaecumque e *terra* corpora crescunt
si sunt in *terris*, *terram* constare necessest
ex alienigenis, quae *terris* *exoriuntur*.
transfer item, totidem verbis utare licebit. 870
in *lignis* si flamma latet fumusque cinisque,
ex alienigenis consistant *ligna* necessest
ex alienigenis, quae *lignis* *exoriuntur*. [874]⁶⁹
praeterea tellus quae corpora cumque alit auget [873]

*

(1. 859–74)

Among the more striking repetitions here, note the fourfold use of *terra* in three lines (867–9),⁷⁰ the triple use of *lignum* in three (871–3) and the insistently emphatic recurrence of *ex alienigenis* (865, with *rebus*, 869, 872, 873)⁷¹ and *quae... exoriuntur* (869, 874), which makes 869 and 873 almost identical; many less prominent repetitions are also readily identified.⁷² Thus, a trick of style which was previously used to elucidate the theory of *homoeomeria* is now employed in its destruction. The repetitions of ‘food’, ‘blood’, ‘bones’, ‘veins’, and ‘sinews’ (859–66) serve not to stress the homogeneous composition of things, as they did in 835–8, but to underline its antithesis, that things must be composed of alien particles. Similarly, the sentence in which *terra* is repeated four times (867–9) is devoted not to the hypothesis that *de terris terram conrescere parvis* (840) but to its contrary; nor is *lignum* repeated thrice in as many lines to support the idea that ‘wood is made of wood’, but that it is composed

⁶⁸ Adequate sense is restored by Lambinus’ stopgap, *et nervos alienigenis e partibus esse*: see Bailey’s note.

⁶⁹ The text is that of Bailey’s *Commentary*, in which he adopted Diels’ transposition and lacuna – a solution also accepted by, e.g., Leonard-Smith, U. Pizzani, *Il problema del testo e della composizione del De rerum natura di Lucrezio* (Rome, 1959), pp. 61–3, and M. F. Smith; the deletion of 873 (Lambinus) produces the same repetition of *ex alienigenis* in successive lines, which Diels compares to other such emphatic repetitions in Lucretius: cf., e.g., 2. 955–6, 3. 12–13, 4. 789–90, 5. 298–9, 950–1, 6. 528–9, 1168–9. Other solutions include the deletion of 873 and 874 (Marullus), emendation of 874 (Lachmann) and the placing of a lacuna between 873 and 874 (Munro).

⁷⁰ Deutsch, op. cit. p. 35.

⁷¹ ‘The recurrence of *ex alienigenis* in four lines so close together... is most emphatic’ (Deutsch, op. cit. p. 136). The adjective is the Lucretian antithesis to *ὁμοιομερής*, as Munro and Bailey observe (on 865).

⁷² Such as *cibus* (859, 861, 864), *corpus* (859, 861, 862, 867), *auget*, *alit* (859, 874), *(com)mixto* (861, 866), *constare* (865, 868), *necessest* (868, 872); in 863 Lucretius might have used *sanguis* (cf. 860) instead of *cruor* had it been convenient. Moreover, if there is a lacuna after 873 or 874, it may well be because ‘the verses lost were so similar in form to some of the lines in 867–872 that the copyist overlooked them’ (Merrill on 873) – an explanation which could also be applied to the lacuna after 860.

of 'flame, smoke and ash' (871) – an obvious *reductio ad absurdum*. Should the transposition of 874 and 873 be correct, it would provide an excellent climax to the Lucretian strategy, in the form of two lines whose parallel structure and dense repetition (*ex alienigenis/ex alienigenis, ligna/lignis, quae...exoriuntur* repeated from 869) bring them closest to the definition of *homoeomeria*, especially lines 835–6. The resulting sense of 'ring composition' is, of course, only formal, for Lucretius has actually dismantled the theory of *homoeomeria* in a style which travesties its previous definition. In this way he cleverly gives the impression of criticizing Anaxagoras on his own terms or, as it were, beating him with his own stick. Finally, with his man backed into a corner and seeking a desperate evasion (*latitandi copia tenvis*, 875), Lucretius presses home the attack in the memorable conclusion discussed earlier.

This analysis began by showing how Lucretius subtly alludes to the characters, styles and philosophical beliefs of Heraclitus and Empedocles in the introductory passages with which he prefaced his criticisms. The lack of such a passage on Anaxagoras was noted, but it should now be clear that Lucretius has expended equivalent care on an ingeniously satirical treatment of his theory, which is much more flamboyant than the criticisms of the other two. The main device of his polemic is the use of repetition, which readily lent itself to exploiting the features of Anaxagoras' theory which Lucretius found most ridiculous. But perhaps he also saw in it a special appropriateness to the criticism of Presocratic philosophy. The close repetition of the same or related words with different inflections (polyptoton) that occurs in 834–42 and later is, of course, a common stylistic device in Greek and Latin literature of all periods;⁷³ Homer, for instance, used it to depict the close ranks of battle and thereby set a precedent for later epicists.⁷⁴ However, the best analogies to the Lucretian passage in terms of form, scale, and subject matter are to be found in the Presocratics, especially Empedocles. Indeed, Lucretius directly imitated this very feature in a later passage describing the operation of the like-to-like principle in the formation of the world:

nam *sua* cuique locis ex *omnibus omnia* plagis
corpora distribuuntur et ad *sua* saecula recedunt,
umor ad *umorem*, *terreno* corpore *terra*
*cre*scit et *ignem ignes* procidunt *aetherae* <*aether*>,⁷⁵
donec ad extremum *cre*scendi perfica finem
omnia perduxit rerum natura creatrix;

(2. 1112–17)

These lines, which have been called 'probably the most striking single example of the juxtaposition of similar and related words in all of Lucretius',⁷⁶ and which provide

⁷³ For Greek see R. Kühner–B. Gerth, *Ausführliche Grammatik der griechischen Sprache: Satzlehre* (Hannover and Leipzig, 1904), ii. 602, and especially B. Gygli-Wyss, 'Das nominale Polypoton im älteren Griechisch', *Zeitschrift für vergleichende Sprachforschung auf dem Gebiet der indogermanischen Sprachen, Ergänzungshefte* 18 (Göttingen, 1966), who demonstrates its popularity with the tragedians and other writers influenced by rhetoric.

For Latin see G. Landgraf, *ALL* 5 (1888), 161 f.; R. Kühner–C. Stegmann, *Ausführliche Grammatik der lateinischen Sprache: Satzlehre* (Hannover, 1914), ii. 617–18; M. Leumann–J. B. Hofmann–A. Szantyr, *Lateinische Syntax und Stilistik* (Munich, 1965), ii. 707–8. On Lucretius see n. 49 above, especially Breazeale's article, which includes Virgil and Ovid; for Virgil see also Pease on *Aen.* 4. 83, and for Ovid, Bömer on *Met.* 5. 300, 8. 27.

⁷⁴ cf. *Il.* 13. 130–1, 16. 215, and Latin imitations such as Enn. *Ann.* 572, with Vahlen, *Furius*, fr. 10 M, Virg. *Aen.* 10. 361, Ov. *Met.* 9. 44–5, with Bömer, *Sen. Ag.* 498, *Luc.* 1. 6–7, *Stat. Th.* 8. 398–9, *Sil.* 4. 352–3, 9. 322–5, also Liv. 33. 8. 14, 38. 17. 8, etc. As used by Hesiod, the device has a proverbial ring: cf., e.g., *Erg.* 23, with West, 25–6.

⁷⁵ 'The obvious supplement' (Bailey).

⁷⁶ Deutsch, op. cit. p. 29 (though the same claim could be made for 1. 835 f. with equal justification).

the nearest Lucretian analogy to the passage under discussion, were inspired by a section of Empedocles from which the following line survives:⁷⁷

αὔξει δὲ χθὼν μὲν σφέτερον δέμας, αἰθέρα δ' αἰθήρ.

(31 B37 DK)

The wording of Aristotle's quotation makes it clear that Empedocles also referred to the increase of fire by fire, and we may acquire a more accurate picture of the original passage by comparing other striking instances of polyptoton in Empedocles:⁷⁸

ὥς γλυκὺ μὲν γλυκὺ μάρπτε, πικρὸν δ' ἐπὶ πικρὸν ὄρουσεν,
ὄξυ δ' ἐπ' ὄξυ ἐβη, δαερὸν δ' ἐποχείτο δαηρῶ.

(31 B90 DK)

γαίη μὲν γὰρ γαίαν ὀπώπαμεν, ὕδατι δ' ὕδωρ,
αἰθέρι δ' αἰθέρα δῖον, ἀτὰρ πυρὶ πῦρ αἰδηλον,
στοργὴν δὲ στοργῇ, νείκος δέ τε νείκει λυγρῶ.

(31 B109 DK)

Empedocles is the outstanding exponent, but he was not the only Presocratic to employ this style, as can be seen from the fragment in which Democritus describes the tendency of similar shapes to congregate together:⁷⁹

καὶ γὰρ ζῶα... ὁμογενέσι ζώοις συναγέλεται ὡς περισσότεραι περισσότεραις καὶ γέραναι
γέρανοις καὶ ἐπὶ τῶν ἄλλων ἀλόγων ὡσαύτως... ὅπου μὲν γὰρ κατὰ τὸν τοῦ κοσκίνου δῖνον
διακριτικῶς φακοὶ μετὰ φακῶν τάσσονται καὶ κριθαὶ μετὰ κριθῶν καὶ πυροὶ μετὰ πυρῶν,
ὅπου δὲ κατὰ τὴν τοῦ κύματος κίνησιν αἱ μὲν ἐπιμήκεις ψηφίδες εἰς τὸν αὐτὸν τόπον ταῖς
ἐπιμήκεισιν ὠθοῦνται, αἱ δὲ περιφερεῖς ταῖς περιφερέσιν ὡς ἂν συναγωγόν τι ἐχούσης τῶν
πραγμάτων τῆς ἐν τούτοις ὁμοιότητος.

(68 B164 DK)

To this may be added a few other examples on a larger scale than the fairly common cases of single repetition: Xenophanes, 21 B15. 3 DK, Diogenes of Apollonia, 64 B6. 6–7 DK (p. 63) and the scientific, if not strictly philosophical, Hippocratic treatise, *Airs, Waters and Places* 14/60, 19/72.⁸⁰ Three other instances deserve mention, although their authenticity is suspect: two from the philosophical fragments attributed to Epicharmus (23 B3. 8–11 and B5. 3–5 DK), and a third from those ascribed to Philolaus (44 B2. 7–11 DK).⁸¹ Even if they are forgeries, they may still be of evidential value, for they indicate what was thought likely to pass muster as an authentic Presocratic document.

⁷⁷ See, e.g., the notes of Munro, Ernout–Robin, Leonard–Smith, Bailey, Kranz, loc. cit. 368, 375 and Bollack, loc. cit. 683.

⁷⁸ See Arist. *G.C.* 333a 35 f., and, for this and other Empedoclean polyptota, Gygli-Wyss, op. cit. p. 106.

⁷⁹ For discussion of the extensive polyptoton in this fragment see Gygli-Wyss, op. cit. pp. 57–8, and for other polyptota in Democritus, 131–2. The many philosophical variations upon the like-to-like principle naturally lent themselves to the use of this figure: cf. the Empedoclean fragments quoted above, and see further Gygli-Wyss, op. cit. pp. 58–9, with the works referred to on 58 n. 2.

⁸⁰ For Presocratic use of polyptoton see further Gygli-Wyss, op. cit. pp. 105 f., 130 f.

⁸¹ For Epicharmus see L. Berk, *Epicharmus* (Groningen, 1964), esp. pp. 93–5 (B 3) and 98–9 (B5); the former 'must be a forgery', while the latter 'may be genuine' (p. 158); also M. L. Silvestre Pinto, 'Note sul pensiero filosofico di Epicarmo', *AAN* 88 (1977), 237–59. For his use of polyptoton see Gygli-Wyss, op. cit. pp. 106–7.

For Philolaus see, e.g., Kirk–Raven, op. cit. pp. 308 f., who, unconvinced by Mondolfo's defence, reject the fragments on the basis of research by Bywater and Frank that reveals a suspicious similarity to Aristotle's accounts of Pythagoreanism; also Guthrie, op. cit. (Cambridge, 1962), i. 330–3, who takes a neutral position, and K. von Fritz, *RE* Suppl. 13 (Munich, 1973), 456–62, who is selective.

Unfortunately, the surviving fragments of Anaxagoras himself present little beyond fairly commonplace examples of polyptoton, such as the saying *ἐν παντί πάντα* (59 B6 DK, cf. B4, 11, 12).⁸² But a slightly better example may be found in the fragment about nutrition, which poses the same question as Lucretius does in 859–74: *πῶς γὰρ ἄν . . . ἐκ μὴ τριχὸς γένοιτο θρίξ καὶ σὰρξ ἐκ μὴ σαρκός*; (59 B10 DK);⁸³ it may also be significant that some ancient references to the Anaxagorean theory employ a similar style.⁸⁴ The possibility exists, therefore, that Lucretius reproduced and parodied the style in which Anaxagoras himself presented his theory of matter, or the style he found in his doxographical source, if Rösler and others are correct to deny first-hand knowledge.⁸⁵ However, given the meagre evidence, which in any case shows polyptoton of this kind to be more Empedoclean than Anaxagorean, it is safer to advance the more general suggestion that Lucretius deliberately borrowed a stylistic feature which he associated with the Presocratics in order to aid his satirical critique of the Presocratic Anaxagoras – a comparable, though less specific, technique to that employed in mocking the pretentious obscurity of Heraclitus and glorifying the visionary grandeur of Empedocles.

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⁸² cf. similar turns of phrase, all referring to Anaxagoras, in Arist. *Phys.* 203 a 24 (59 A45 DK), *Simpl. Phys.* 164. 20–1 (see B3 DK), 460. 12–13, 17, 461. 7–8 (A45 DK); note also Lucr. 1. 876–7 (*id quod Anaxagoras sibi sumit, ut omnibus omnis|res putet immixtas rebus latitare*). Polyptota involving *πᾶς* are characteristic of the Presocratics, who were the first to exploit them: see Gygli-Wyss, *op. cit.* pp. 44–6.

⁸³ See Gygli-Wyss, *op. cit.* p. 131. Ernout–Robin (on 834 ff.) point out a similarity to Lucr. 1. 837 (*visceribus viscus gigni* etc.). Rösler, however, casts doubt upon whether ‘Fragment’ 10 contains the original wording of Anaxagoras (*loc. cit.* 60). A full discussion of the question is conducted by Schofield, *loc. cit.* pp. 14 f., *op. cit.* pp. 136 f., who concludes that, although the doctrine of growth may derive from Anaxagoras, we cannot be sure whether the scholium preserves his *ipsissima verba*; see also D. Sider, ‘The fragments of Anaxagoras’, *Beiträge zur klassischen Philologie* 118 (Meisenheim am Glan, 1981), 89–90, who argues strongly in favour of genuineness.

⁸⁴ cf. Plat. *Phaed.* 96d (*ἐπειδὴν γὰρ ἐκ τῶν σιτίων ταῖς μὲν σαρκὶ σάρκες προσγένωνται, τοῖς δὲ ὅστοις ὅστᾳ, καὶ οὕτω κατὰ τὸν αὐτὸν λόγον καὶ τοῖς ἄλλοις τὰ αὐτῶν οἰκεία ἐκάστοις προσγένηται . . .*), which is ‘a clear reference to Anaxagoras’ (Guthrie, *op. cit.* ii. 287 n. 1), Arist. *G.A.* 723a 11 (*Ἀναξαγόρας μὲν γὰρ εὐλόγως φησὶ σάρκας ἐκ τῆς τροφῆς προσίεναι ταῖς σαρκὶν*), Theophr. *ap. Simpl. Phys.* 27. 12–15 (59 A41 DK) (*ἐκείνος γὰρ φησιν ἐν τῇ διακρίσει τοῦ ἀπείρου τὰ συγγενῆ φέρεσθαι πρὸς ἄλληλα, καὶ ὅτι μὲν ἐν τῷ παντί χρυσὸς ἦν, γίνεσθαι χρυσόν, ὅτι δὲ γῆ, γῆν’ ὁμοίως δὲ καὶ τῶν ἄλλων ἕκαστον, ὡς οὐ γινομένων ἀλλ’ ἐνυπαρχόντων πρότερον*).

⁸⁵ Vlastos seems to imply direct use of Anaxagoras when he refers to *concrescere* (840) as a ‘Latin rendering for Anaxagoras’ *συμπεγνύναι* (B16)’, comparing Cic. *Ac.* 2. 100 (*loc. cit.* 349 n. 69, and cf. n. 70). Contrarily, Cornford believes the source to be ultimately Theophrastus (*loc. cit.* 294), while Rösler suggests an Epicurean work based on Theophrastus (*loc. cit.* 59–60, 62).