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A study of Lucretius, De rerum natura I 635-920:

Lucretius and his sources

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Abstract

My thesis is a study of lines 635-920 of *DRN* I, Lucretius' refutation of the theories about the fundamental nature of matter elaborated by Heraclitus, Empedocles, Anaxagoras and other unnamed thinkers. My main concern is establishing what source Lucretius used in these lines and how he used it. In chapter 1 I give my reasons for believing that Lucretius, in *DRN* I 635-920, was following an Epicurean source, which in turn derived its information from Theophrastean doxography. In chapter 2 I argue that books XIV and XV of the *II*Φ were not Lucretius' source-text for Lucretius' refutation of earlier thinkers. In chapter 3 I discuss how lines 635-920 fit in the structure of the first book of Lucretius' poem, whether the critique was an addition from a later stage in composition, and whether the source is more likely to be Epicurus himself or a later Epicurean author. In chapter 4 I focus on Lucretius' own additions to the material he found in his source and his poetical and rhetorical contributions. Lucretius contributed extensively himself to this section as a finished poetic product. It will appear that even if the philosophy comes from the source, Lucretius shows understanding of the points in the way he adapts his poetical devices to the philosophical arguments. It will also appear that Lucretius foreshadows philosophical points in what have often been thought the 'poetical sections' or 'purple passages' of his poem (e.g. the invocation of Venus in the proem, and the description of Sicily and Aetna in *DRN* I 716-733), so that he could take them up later on in his narrative and provide an adequate explanation of reality.
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Plate 447
Introduction

Lucretius' criticism of the theories of matter of Heraclitus, Empedocles, Anaxagoras and other unnamed thinkers in lines 635-920 of *DRN* I, which I shall henceforth refer to as the *critique*, is a unique piece of literature as it presents criticism of the views of earlier philosophers in poetry. Understanding how Lucretius used his sources is important for judging his achievement. Although enquiries into the problem of how Latin authors used their Greek sources have now become somewhat unfashionable, studying Lucretius’ philosophical poem from this viewpoint still has much to teach us.

As a Roman poet Lucretius would have considered it natural to reproduce Greek models, and would have been expected to do so. Livius Andronicus ‘translated’ the *Odyssey* into Saturnian verses in the third century B.C. Ennius’ (239-169 B.C.) introduction of the hexameter into Latin literature, with his 18 books of *Annales*, meant that the relationship between Latin texts and their Greek counterparts gained a further aspect. The style of the works of Roman literature could be directly compared to the Greek original they derived from.¹ Indeed Ennius claimed that the spirit of Homer had been reincarnated in him. It may also be that, where the early books of the *Annales* are concerned, Ennius took over, not only the

¹ Lucretius himself highlights the importance of Ennius’ import of the hexameter to Latin literature: *detulit ex Helicone perenni fronde coronam* (*DRN* I 118). See Giancotti 1959: 70-73.
style, but also some of the content from works of Greek Epic.

Lucretius' later contemporaries Catullus² and Horace,³ at times do little more than translate Greek originals, and this is evident in spite of the loss of most of the possible Greek sources. Roman poets often displayed their skill by translating Greek models, sometimes to the same metre, or to a different metre. They meant their work to be set against Greek originals.

It is well known that Latin dramatic authors relied heavily on Greek sources. Plautus, in his 'adaptations' of plays by the ‘New Comedians’ Menander, Diphilus and Philemon, appears to have intervened little as far as plot and content are concerned. He seems invariably to take these over from Greek sources, often translating entire sections of the Greek originals. Similarly Caecilius Statius' Plocium was closely based on Menander's comedy by the same title (Τὸ πλοκῖον), as is shown by Aulus Gellius Noctes Atticae II. 23.⁴

Lucretius had a trusted source for the content of his poem in the philosophy of Epicurus, but could not rely on Epicurus as a poetic model, or as a guide on how

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² Catullus translates Sappho (in poem 51) and Callimachus.

³ Some of Horace's Epodes are based on Archilocus and Hipponax; some of his Odes on Alcaeus (e.g. the Soracte ode) and Bacchylides.

⁴ Gellius' criticism of Statius centres on the fact that Statius fell short of the literary qualities of Menander; he seems to expect the plot of the Roman play to reproduce accurately the plot of the Greek original. Roman readers, at least at the time of Gellius, judged the literary merits of comedies by setting them side by side with the original and comparing the poetry of the two. Indeed in the final sentence of II. 23 Gellius implies that Statius should not have rivalled a model with which he could not compete.
to write didactic poetry. Although there are uncertainties about Epicurus’ views on poetry and, more generally, the arts, it looks as though he had at least partial reservations about their value. Studies by Asmis (1995), Sider (1995) and Wigodsky (1995) have dispelled the earlier belief that Epicurus denied that poetry could produce pleasure — i.e. that it had any value — and that he therefore rejected it altogether. It is now generally agreed that Epicurus rather considered poetry one of the unnecessary pleasures.

Epicurus had reservations about whether poetry had any educational value.

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5 This does not mean that Epicurus’ remarks about παθήνεια in language (below page 284) did not influence the way in which Lucretius wrote his poem. Asmis (1995:33-34) argues that Lucretius was showing, by giving to his verses the clarity which Epicurus only thought possible in prose, that poetry could convey a philosophical message clearly. Cabisius (1979:245) has argued that by writing poetry Lucretius was challenging Epicurus’ view, and defending conventional παθήνεια from Epicurus’ attacks. He seems to overlook the fact that later Epicureans had a partially different attitude to poetry, but there may yet be some truth in his remarks, of which Asmis’ are a weaker version.

6 Asmis (1995:16-17) points out that the allegorist Heraclitus (Homeric Problems 4) says that Epicurus got rid of all poems, and criticises Epicurus (Homeric Problems 79) for deriving, despite his condemnation of poetry, the notion the pleasure that is the ultimate goal, by misinterpreting Odyssey IX lines 6-7 and 11. She argues that if Epicurus used this passage in support of his philosophy, he could hardly have “excluded poetic entertainment from the life of pleasure”. Sider (1995:39) objects that it is unlikely that Epicurus would have based any argument on a poetic passage. The fact that Epicurus mentioned these Homeric lines in his writings certainly does not entail that he thought Homer’s opinion in any way corroborated his argument, but shows that Epicurus was willing to quote from Homer and therefore presumably did not think that one should refuse to listen to poetry altogether.

7 See also Craca 2000: 7-20 and Janko 2000: 9, note 2.

8 A number of passages in Plutarch suggest Epicurus was skeptical about the educational value of poetry. In Moralía 1086 f Epicurus is said to have spoken in terms of ποιητική τύρφη and of
This may be due to the fact that the poems known to him invariably spread what was in his view false, and dangerous, belief. There is no indication that Epicurus explicitly condemned poetry as a *medium*, but it also seems clear that he thought the wise man should not compose poetry; the wise man should rather write prose. Diogenes Laertius (X. 120) reports the maxim μόνον τε τὸν σοφὸν ὀρθῶς ἀν περιλ τε μουσικῆς καὶ ποιητικῆς διαλέξεσθαι. Ποιημάτα τε ἐνεργεῖαι oúk ἀν ποιήσαι.

Arrighetti argues (1998: 18-19) that Epicurus is not condemning poetry because it may spread false belief, since ὁ σοφὸς would be immune to this. The

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1 Oμηρου μωρολογήματα. Moralia 15 makes reference to the Epicurean advice of waxing the ears not to hear the Sirens. And Plutarch Moralia 1094 e provides evidence for Metrodorus claiming that there is nothing shameful about being totally unfamiliar with Homer (Giancotti 1959: 16-17). Further evidence comes from Cicero's De finibus 1. 21. 72 where the Epicurean Torquatus says, referring to Epicurus: *an ille tempus aut in poetis evolvendis, ut ego et Triarius te hortatore facimus, consumeret, in quibus nulla solida utilitas omnisque puerilis est delectatio* . . .

9 Asmis (1995: 22) suggests retaining ἐνεργεῖαι and explaining it as a gloss. According to her Epicurus, whether the restoration is accepted or not, means "practicing energetically", so that he would be allowing the wise man to compose poetry as a hobby. Sider (1995: 35-36) criticises Asmis' reasoning about the gloss, but accepts her reading of the fragment. Arrighetti (1998: 16-18) rejects Asmis' proposal in favour of the more reasonable reading "in practice". Arrighetti lays much weight on Epicurus' reference to ὁ σοφὸς and suggests that Epicurus was simply saying that poetry is not the right medium in which to convey philosophical research. Arrighetti (1998: 16 note 9) explains the corruption to ἐνεργεῖαι as a misunderstanding of an abbreviation.

10 Arrighetti points out that Epicurus himself used poetic quotations, that Philodemus says that the wise man is able to detach himself from false implications when reading poetry in Περὶ ἐδοξεῖας (see Obbink 1995: 189-209), and that this is in line with the positive attitude in Περὶ τοῦ καθ' Ὁμηρον ἀγαθοῦ βασιλέως. Presumably, according to Arrighetti, when Epicurus quoted poetry in works which
Epicureans Metrodorus (331-278 B.C.), Zeno of Sidon (born circa 150 B.C.), and Demetrius of Laconia (circa 100 B.C.) discussed poetry. And this seems perfectly in line with Epicurus' statement that only ὁ σοφός can judge poetry. It seems clear from Philodemus, however, that the Epicureans of the first century B.C. followed Epicurus in thinking that poetry was not appropriate for expressing philosophy, nor any scientific discussion. This may just clear Philodemus of the charge of being inconsistent with his Epicurean credo,¹¹ but not Lucretius, whose poem is most certainly scientific. Lucretius' undertaking was innovative, and unorthodox.

Lucretius had to look elsewhere for a model on which to base his didactic philosophical poem. He found his chief literary model in Empedocles. At various points of the discussion we shall find evidence that Lucretius wanted his poem to resemble Empedocles' stylistically, and thereby invited the reader to compare the two. It is worth pointing out at the outset, however, that although many passages in Lucretius, and especially the prologue to his poem, probably imitate Empedocles, at no point can the content of extended sections of DRN be shown to derive directly from Empedocles.¹²

By presenting Epicurean doctrine in Empedoclean guise Lucretius was innovating, and combining the style of one source with the content of an unrelated source. This was a daring undertaking. It looks as though contemporary attempts at Latin didactic poetry derived both style and content from the same model. Indeed the

could be read by the non-wise, he would have got rid of any potentially misleading implication?

¹¹ Arrighetti (2003: 142) points out how Philodemus' choice of epigrams as the form of his poetry is perfectly coherent to the role the Epicureans attributed to poetry.

¹² See below note 640, and Giancotti 1978: 82-83.
only certain mentions that we have of Roman didactic poetry contemporary to Lucretius are Cicero's *Aratea*, and Sallust's *Empedoclea*, the latter of which may have taken up both content and form from Empedocles' poem.\textsuperscript{13}

It may be that Lucretius had precedents for his undertaking, namely the production of a didactic poem expounding Epicureanism. T. Albucius may have composed an Epicurean poem in the late second century B.C., or at least combined Epicureanism and poetry.\textsuperscript{14} It is certainly possible that, as Janko (2000: 9, note 7) suggests, Albucius was taught, during his exile in Athens, by the Epicurean Zeno of Sidon, whose interest in poetry is apparent from the writings of Philodemus. Even if such a work existed and was available to Lucretius I very much doubt that he would have used it as a stylistic model.\textsuperscript{15} Lucretius' stylistic model was Empedocles.

But from where did Lucretius draw the philosophical content for his Empedoclean framework, and how close did he keep to it? Comparison with contemporary Roman writers of philosophy suggests that it was the norm to be

\textsuperscript{13} Sedley (1998: 1-2) suggests that this work was presumably a translation or imitation of Empedocles. He seems right to argue that Cicero, by quoting the two works in the same context, in *Ad Quintum fratrem* II. 9. 3 implicitly compares Lucretius' poem to Sallustius' *Empedoclea*: \ldots Lucreti poemata ut scribis ita sunt, multis luminibus ingenii, multae tamen artis. Sed cum veneris, virum te putabo si Sallusti Empedoclea legeris, hominem non putabo. I think Sedley is probably right in punctuating the text in this way (rather than full stop or aposiopesis after veneris).


\textsuperscript{15} The other known attempt at Epicurean poetry, by Pollius Felix (see *Statius Silvae* II. 2. 112-115; Sider 1995: 37), is certainly later than Lucretius.
dependent on Greek models. Roman philosophical authors of the second and first centuries B.C. were accustomed to follow Greek originals closely, and sometimes simply translated these models. The evidence comes mainly from the way in which Cicero composed his philosophical works, and from his comments on the philosophical writings of earlier Roman authors.

Cicero translated from the Greek, not always acknowledging that he had done so. Powell (1995:279-280) looks at passages where Cicero translates. Particularly interesting is Cicero's *Timaeus*, which is a continuous translation of Plato's work by the same title. The precise nature and state of composition of Cicero's *Timaeus* are uncertain. Powell observes that the work has an introduction similar to the ones Cicero uses in other dialogues. In the few surviving lines Cicero does not mention that what follows is a translation from Plato. Powell (1995: 281) thinks the *Timaeus* was an abortive effort, since "... there is no known parallel for such a long piece of direct translation being introduced into a dialogue of Cicero's own composition". Cicero produced two other (lost) works, his *Protagoras* and *Oeconomicus*, which appear from the fragments to have been straight translations of Plato's and Aristotle's works by the same titles. It is interesting that Cicero, in *De finibus* I. 7 considers the possibility of translating entire works by Plato and Aristotle, if only to reject it in this case.

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16 In *Tusculanae disputationes* I. 5 Cicero complains about the fact that philosophy in his age *nullum habuit lumen litterarum latinarum.*

17 *Sed id neque feci adhuc nec mihi tamen ne faciam interdictum puto. Locos quidem quosdam, si videbitur, transferam et maxime ab iis quos modo nominavi, cum inciderit ut id apte fieri possit, ut ab Homero Ennius, Afranius a Menandro solet.* Cicero is explaining, in *De finibus* I. 6-7 why there is
There are indications that Cicero’s first philosophical dialogue, *Hortensius*, was based on Aristotle’s *Protrepticus*, although one cannot tell how closely Cicero followed Aristotle in defending philosophy. It may be that Cicero at the start of his philosophical career considered it acceptable to simply translate an entire work into Latin, or at least base a whole work on a single Greek model. Cicero was certainly not ashamed of translating passages from Greek originals.\(^\text{18}\)

The extent to which Cicero translated Greek sources in his later works is debated. Books one and two (only) of *De officiis* have been thought to derive from Panaetius. But it looks as though Panaetius was the main source which gave Cicero his structure, but not the only one. Cicero clearly followed very closely a Greek Epicurean source in his review of δόξα of the gods in *De natura deorum* (below pages 51-53).

Whether or not we think that Cicero’s famous comment in his letters to Atticus (XII. 52) that his works are “ἀπόγραφα” is false modesty on Cicero’s part,\(^\text{19}\) the background from Cicero’s philosophical writings suggests that Cicero, and presumably anyone writing philosophy in Latin in the first century B.C., would have found it natural to use Greek sources, and might have done no more than translate more point in reading his philosophical works than the straight translations of Greek dramatic texts. Cicero points out that he adds his own *iudicium* and *scribendi ordo*. Asmis (1983: 49-50) thinks Cicero is signaling three contributions: invention, arrangement and style. But one cannot be certain that *iudicium* means *inventio* here. Reid (1925: 8) had suggested not unreasonably that *iudicium* means literary taste in this context.

\(^{18}\) Cicero is prepared to take over the same material from Plato’s *Phaedo* 80-81 in *Somnium Scipionis* 21 and *Tusculanae disputationes* I. 27 and 72.

his Greek source into Latin.\(^{20}\)

A further point seems worth making in this context. Both *Academica* (I. 4) and *De finibus* (I. 1) suggest that people who were likely to read philosophical works in Latin also knew Greek.\(^ {21}\) Presumably only part of the *eruditi Graecis litteris* would refuse to read Latin literature. We have seen above (page 9 and note 4) how Gellius compares ‘Roman’ comedies with their Greek counterparts, so it is possible that Roman readers of Latin philosophical works did the same.

Some of the readers of Cicero’s dialogues, and of Lucretius’ poem, would probably have been familiar with the Greek originals which Cicero and Lucretius were following, and thus able to compare the two. Cicero and Lucretius would have been aware of this. Roman philosophers might have wished to be compared to their Greek philosophical models as much as Roman poets did, although in Lucretius’ case, as we shall see, this certainly did not imply any kind of ‘challenge’ to Epicurus.

Cicero provides some interesting remarks on the work of Roman Epicureans who were earlier or contemporary with Lucretius.\(^ {22}\) Two writers of Epicureanism,

\(^{20}\) Cicero’s bias does not hinder him from being a close friend of the Epicurean Atticus and praising Lucretius’ poem. It is perhaps unlikely that Cicero would attack Amafinius and Rabirius (below) because they held Epicurean beliefs; it may be that these writers misinterpreted Epicureanism, as well as having a poor style.

\(^{21}\) *Tusculanae disputationes* V. 116 (*Epicurei nostri Graece fere nesciunt*) presumably refers to Amafinius’ pupils. Howe (1951: 60) notes how “better trained and more literate Epicureans like Cassius could smile at Amafinius and Catius”.

\(^{22}\) For a list of known Roman Epicureans in the late Republic, see Ferguson (1990: 2262).
Amafinius and Rabirius,\textsuperscript{23} are criticised by Varro in \textit{Academica} I. 4.\textsuperscript{24} The continuation of the passage (\textit{Academica} I. 5-6) shows that Amafinius used the word \textit{corpuscula} to refer to Epicurus’ atoms, and may suggest that Amafinius discussed how atoms come together to form things.

In \textit{Ad familiares} XV. 19. 1-2 Cassius, in his reply to a letter by Cicero, criticises the same Amafinius, and Catius (Shackleton Bailey 1977: 62). They are referred to as \textit{mali verborum interpretes}. And in \textit{Ad familiares} XV. 16 Cicero reports that Catius Insuber translated Epicurus’ \textit{εἰδωλα} with the word \textit{spectra} (Shackleton Bailey 1977: 60). Catius wrote \textit{quattuor libros de rerum natura et de summo bono} (Porphyry \textit{Ad Horatii saturas} III. 4. 1). And Quintilian (\textit{Institutio oratoria} X. 1. 124) cites Catius among other Roman prose writers: \ldots in Epicureis levis quidem sed non iniucundus tamen auctor est Catius. It is worth mentioning that Pliny the Younger (letters IV. 28) shows that Titus Catius was famous enough for

\textsuperscript{23} See \textit{Tusculane disputationes} IV. 6-7 (\textit{cum interim illis silentibus CAmafinius exstitit dicens, cuius libris editis commota multitudo tulit se ad potissimum disciplinam \ldots Post Amafinium autem multi eiusdem aemuli rationis multa cum conscriptissent, Italicam totam occupaverunt}), \textit{Pro Caelio} 40-41; \textit{De natura deorum} I. 8. Howe (1951: 57) considers it probable that Amafinius was a contemporary of Lucretius, and argues that \textit{DRN V} 336-337 (\textit{hanc primus cum primis ipse repertus / nunc ego sum in patrias qui possim vertere voces}) should be explained by saying that such writers did not antedate Lucretius.

\textsuperscript{24} \textit{Nulla arte adhibita de rebus ante oculos positis vulgari sermone disputant, nihil definiunt nihil partiturur nihil apta interrogatione concludunt, nullam denique artem esse nec dicendi nec disserendi} \ldots It is not easy to see what exactly Varro’s words refer to, but it may be that Cicero would have made Varro speak in such terms if Amafinius and Rabirius simply translated earlier Greek works. Further criticism of the Latin Epicureans comes in Cicero \textit{Tusculanae disputationes} II. 7, as Shackleton Bailey (1977: 381) points out.
his portrait to be hung in the library of Herennius Severus.

The picture that emerges is one of Epicureanism spreading rapidly in Rome, probably at first in higher circles, and increasingly in Roman society. Phaedrus, who was born circa 138 B.C., may have gone to Rome in 88 (Ad familiares XIII. 12), possibly to teach, but was back in Athens in 79 (Raubitschek 1949: 97-98). Raubitschek (1949: 103) points out that Appius and Lucius Saeveius were also known Epicureans who had studied in Athens under Phaedrus.\(^\text{25}\) The production of the works of Rabirius, Amafinius and Catius suggests that Epicureanism was growing stronger among non Greek-speaking Romans. Sedley (1998: 61-65) seems right therefore to suggest that in Italy in Lucretius' day there was a lively interest in philosophy. It is worth noting, however, that Cicero complains about the lack of philosophical production in Latin and the fact that learned Romans refused to read philosophy which was not in Greek.\(^\text{26}\)

That establishing Lucretius' philosophical source is relevant to a specifically 'literary' analysis of his poem has been questioned. While pointing out that Lucretius depends heavily on Epicurus for his philosophy, Kenney (1977: 8) remarks that "which work or works he chiefly followed and how much, if any, independence of Epicurus he allowed himself are questions not of primary concern to those interested in the DRN as literature. It is important, however, to grasp the width of the line

\(^{25}\) The possibility that Lucretius himself was taught by Phaedrus in Athens — or Rome? — cannot be discounted.

\(^{26}\) De finibus 1-6 and Tusculanae disputationes I. 5. Cicero may be exaggerating the extent to which he is breaking new ground, but the implication in Tusculanae disputationes I. 6-7 seems to be that the works of Amafinius were not good enough to be read by the eruditi.
separating the Epicurean texts that Lucretius had before him from what he made of them”. I am not sure I agree with Kenney. Understanding the difference between Epicurus’s dry prose and Lucretius’ poetry does not seem to be the whole story: additions to content can have a literary aspect too. The way in which Lucretius structured his philosophical material should be kept in mind when considering the literary qualities of the poem. Especially in a passage such as the critique where philosophical arguments, rhetoric and poetry become, as we shall see, fused into one, forming an idea of what material Lucretius’ source might have contained and what might have been introduced by Lucretius is relevant to literary analysis of Lucretius’ poetry. This helps to put Lucretius’ literary merits into perspective and to see where his achievement stands. Although we know that Lucretius followed Epicurus closely at various points in his poem, and Thucydides for a considerable section of DRN VI, our understanding of Lucretius’ poetry and of how far he understood or altered the philosophical issues in DRN is hampered by our scant knowledge of what material Lucretius was using at various points in his narrative.

The indebtedness of this study to David Sedley’s book *Lucretius and the Transformation of Greek Wisdom* will be apparent to the reader: he has pointed the way. I follow the approach he has adopted and, in many respects, develop, in relation to lines 635-920, some of the leads he has pointed at, though coming to different conclusions on some issues.

To come back to the aims of my thesis. My main concern is establishing what source material Lucretius used in the critique, and in what way he used it. The debate on Lucretius’ use of sources is very much open. Two recent studies on the topic take radically opposing views. Schrijvers (1999) thinks of Lucretius as an ‘eclectic late
Hellenistic writer'; Sedley (1998), on the contrary, pictures Lucretius as a ‘fundamentalist’ who relied exclusively on Epicurus’ ΠΦ as his source.

Assessing Lucretius’ handling of the critique depends on understanding how he used his Greek source. Adaptation, elaboration and addition (at times through ‘contamination’ of sources) were the means by which Lucretius could make the content of DRN more effective and more enjoyable. I am convinced there are many sections in the critique where Lucretius should be thought to be independent of his lost source, and many sections where he heavily elaborated the material he found in his source. Lucretius seems to have used his Greek source comparatively freely.

Speculating on Lucretius’ source is also relevant to the history and development of the Epicurean school. Studying the critique from the point of view of Lucretius’ use of sources sheds some light on how Epicureans went about producing polemical texts. Kleve (1978: 40) writes “there is a need of seeing polemics in Lucretius from a new angle. Pinning down the opponents of Lucretius is only one part of the problem; in addition we have the contents of his arguments, his ways of arguing and above all his place in a polemical tradition which goes back more than two centuries before his own time. However, the history of Epicurean polemics still has to be written”.

Discussion of Lucretius’ sources will involve analysis of the remains of books XIV and XV of Epicurus’s ΠΦ, to try to determine their content. Since it has been suggested that books XIV and XV of Epicurus’ ΠΦ were Lucretius’ source for the critique, I shall dedicate considerable space to analysis of the relevant papyri from the library in Herculaneum and provide a new edition of some of the fragments, as a result of autopsy of the papyri in Naples’ Biblioteca Nazionale Vittorio Emanuele
III, corroborated by use of the multispectral digital images of the papyri. This will, I hope, be a small step forward towards a much needed reconstruction of Epicurus' treatise ΠΦ.
Chapter 1. Lucretius drew the critique from an Epicurean polemical text

I doubt that Lucretius consulted the original writings of Heraclitus, Empedocles and Anaxagoras, reconstructed the thought of the three Presocratics, and elaborated his own counter-arguments against their theories of matter. Although Lucretius may well have known the works, or at least quotations from the works, of Heraclitus and Anaxagoras, and he was certainly familiar with the work of Empedocles, it is reasonable to assume that in lines 635-920 Lucretius largely reproduced the arguments he found in a Greek text. I also doubt that Lucretius elaborated his own counter-arguments on the basis of

27 Brown (1989: 150) criticises the suggestion that Lucretius’ knowledge of the Presocratics does not derive from his own study of the original texts: “this suggestion should be treated with caution in view of Lucretius’ demonstrably wide reading in other areas of Greek literature . . .”

28 Above page 12 and below chapter 4.4, especially pages 322-328.

29 That Lucretius was using a Latin source should, I think, be ruled out, in view of his remarks on the difficulty of translating from the Greek in DRN I 136-139, which presumably apply to the poem as a whole.

30 I do not mean that Lucretius had necessarily a written work in front of him. I intend source to be understood in a wide sense. Lucretius may have been taught philosophy, and, if so, would have taken notes. If Epicurean education was based on Epicurus’ ΠΦ, as seems likely, seeing that Philodemus’ library had multiple copies of the same work (presumably for handing out to students), this makes it a priori likely that Lucretius was familiar with, and may have taken notes from, Epicurus’ ΠΦ.
second-hand information regarding the views of the three Presocratics. I do not exclude the possibility that some arguments are Lucretius’ own contribution, but evidence from elsewhere in the poem suggests that he would have depended on a Greek source.

DRN VI 1138-1286 are extremely close to Thucydides’ description of the Athenian Plague (II 47-52). Lucretius’ use of sources in his this passage, however, is complicated by the fact that he includes material from the Hippocratic corpus. Munro (1864b: 394-395) was the first to notice how lines 1184-1195 resembled passages in the Hippocratic corpus (e.g. line 1184 with Hippocrates Prorrhet. I. 49, line 1185 with Hippocrates Praenot. Coac. 193, line 1186 with Hippocrates Progn. 8, line 1188 with Hippocrates I.1.24). Contaminatio is perhaps a better explanation than an intermediary source between Thucydides and Lucretius.31

31 Clay 1983: 290, note 5. Scholars have suggested that Lucretius used an intermediary source, possibly a (later) Epicurean text now lost. Ernout and Robin (1928: 351 and 361) postulated a Latin intermediary. This was suggested to them by what were thought mistranslations of Thucydides (Bright 1971: 607, note 2). Clay, defending Lucretius’ originality, insists that it was Lucretius who fused the two (with the implication that, as Munro thought, Lucretius was familiar with the Hippocratic corpus). That Lucretius used an intermediary source in Greek or, much less probably, in Latin is perhaps unlikely, but cannot be ruled out. That this intermediary could have been an Epicurean text is pure speculation, although Diogenes Laertius X. 28 refers to a work Περὶ νέον δόξαν πρὸς Μηθρήν by Epicurus (Giancotti 1994: 565). The most probable explanation is that Lucretius depends on Thucydides directly, but on Hippocrates indirectly (Professor Sharples suggests to me that it is not certain that the Hippocratic writings were as prominent in the first century B.C. as they became later). It may be that the material from the Hippocratic corpus was scholia on the text of Thucydides which Lucretius used, or that Lucretius used as a source a medical commentary on Thucydides’ description of the Athenian Plague.
Whether or not Lucretius added the Hippocratean elements himself, it seems a far remark that description of the Plague is little more than a ‘translation’ of Thucydides’ account into Latin hexameters.\(^{32}\) And some philosophical sections of DRN can be shown to reproduce very closely the arguments found in Epicurus’ own works. This is clear when one compares, for example, DRN I 418-448 with Epicurus’ letter Ad Herodotum 39(b)-40,\(^{33}\) or DRN I 483-583 with Ad Herodotum 41, or again DRN IV 53-175 with Ad Herodotum 46-48.\(^{34}\)

Further evidence that Lucretius habitually reproduced the arguments in his Greek

\(^{32}\) For Lucretius’ ‘reworking’ of the material in Thucydides, see Commager 1957. Sedley argues that Lucretius would have reworked the account of the Plague had he lived to complete his poem. On how Sedley’s theory that book VI (as well as most of book IV and book V) are an unrevised ‘first draft’ is open to a number of objections, see below Appendix (a), pages 389-391.

\(^{33}\) Woltjer 1877: 18-19.

\(^{34}\) Despite the similarities between DRN and Ad Herodotum it looks as though Lucretius did not use Ad Herodotum as his primary source, since DRN treats topics which are omitted altogether in Epicurus’ Ad Herodotum (e.g. the material in DRN II 730-990) and there are divergences in the order of topics. Sedley (1998: 141) argues that the sequence in DRN IV 176-215 reproduces the one of \(\Pi\Phi\) II, and not the one of Ad Herodotum, shows that “Lucretius’ debt to On Nature has not been mediated by the use of the Letter to Herodotus”. It is hard to disprove altogether that Lucretius used Ad Herodotum for some sections of his poem, but a hypothesis according to which Lucretius often switched from one Epicurean source to another is rather uneconomical. I take it that Ad Herodotum reproduced, at times, the now lost text by Epicurus which Lucretius used. On whether this text is more likely to have been Epicurus’ \(\Pi\Phi\), or some other work, see below page 227. On the structure of Ad Herodotum, and how far it reflected the structure of \(\Pi\Phi\), below Appendix (c), pages 405-408.
sources comes from DRN V and DRN VI. Sections of this book are, as we shall see, very close to the arguments which appeared in works by Theophrastus. I take it that Lucretius in books V and VI was following a text by Epicurus himself who had incorporated Theophrastean material, although it is very hard to prove that Lucretius did not gain access to the Theophrastean information either directly from Theophrastus, or through a later writer who reproduced Theophrastus independently of Epicurus.

Below pages 199-204.

If Lucretius corresponds to Theophrastus, and Epicurus is not extant, there is no need to suppose that the intermediary was a later Epicurean one; only if Lucretius and Theophrastus agree against Epicurus, might there be a case for supposing that the intermediary was a later Epicurean one.

Runia (1997: 99-101) suggests that Lucretius had “sources of access” to doxographical material other than Epicurus, pointing out that in DRN V 705-750 (a) Lucretius organizes his discussion according to the doxographical diaeresis (moon as recipient of light / moon source of its own light) while Epicurus, who refers to this diaeresis in ad Pythoclem 94, does not integrate it, as Lucretius does, with the questions of the moon’s transformations and its eclipse; (b) Lucretius operates a distinction between bastard (nothus) and own (proprius) light which is not found in Epicurus, nor in Aëtius, but is paralleled in the Philonic text De somniis I. 21-32 (I. 23 τί δὲ; σελήνῃ πότερον γνήσιον ή νόθον ἐπιφέρεται φέγγος ἡλιακαίς ἐπιλαμπόμενον ἀκτίοις ή καθ’ αὐτό μὲν ἰδίαι τοῦτον ὀδύτερον, τὸ δ’ ἐξ ἀμφοῖν ὡς ἐν ἐξ οἰκείου καὶ ἀλλοτρίου πυρός κράματ;) and in Lucian Icaromenippus paragraph 20; and (c) refers explicitly in DRN V 727 to the theory of Berosus that the moon is a rotating sphere, half of which is inflamed. Runia takes it that the astronomical fragments were part of Berosus’ work Βαβυλωνιακά which he dates between 290-270 B.C., too late for Theophrastus and for most of the books of Epicurus’ IIΦ. Argument (a) may show no more than that Ad Pythoclem is earlier than the text Lucretius used as his source (if we suppose that once he had made the integration Epicurus could not have failed to do so always). The use of (b) the term nothus
Lucretius may have included material later than Epicurus in *DRN* V. Schofield (1999: 749, note 30) suggests that Lucretius cannot be taken as evidence for Epicurus' own views on the development of civilisation, although he grants that there is some genuine material from Epicurus in *DRN* V 925-1157 (lines 1120-1130 can be compared with Κύριαi δόξαi 7, and lines 1151-1157 with Κύριαi δόξαi 35). Schofield points out that Lucretius' phases of softening (1011-1023) and exhaustion (1143-1150) are at odds with the views of Hermarchus, Epicurus' friend, philosophical associate and successor as head of the school. Assuming this material was not in Epicurus it is unclear whether it is more likely that Lucretius contaminated later material with Epicurus' treatment, or that he was following a text by an Epicurean author later than Epicurus' himself. One may also consider the possibility that Hermarchus' views were certainly links the three texts in question, but can Lucian and Philo be taken as representing the 'doxographical tradition' (*nothos* is not in Aetius, Runia 1997: 101, note 43)? As for argument (e) it is not certain — as Sedley (1998: 91-92 and 92, note 125) notes — that Berosus' astronomical considerations first appeared in his Βαβυλωνιακά. Berosus' dates make it possible that Epicurus knew of his views. Usener (1887: 384) and Bailey (1947: 1439-1440) thought that such a view is cited in *Ad Pythoclem* 94 (κατὰ στροφῆν τοῦ σωμάτος τούτου). Runia (1997: 101, note 50) objects that the distinctive feature of being ἡμιπύρωτος is not in Epicurus. Even if Runia is right, it may be that Lucretius is performing *contaminatio* in this section of *DRN* V, as he seems to have done in the Plague passage in book VI (above note 31).

38 Cole (1967: 15-46) points to extensive parallels between Vitruvius', Diodorus', Tzetzes', Posidonius' and Lucretius' account of the development of civilization to show that all of these go back to a Democritean original. Cole (1967: 170) suggests that there may be a Cynic source.

39 On Hermarchus and Epicurus see Longo Auricchio 1987: 25.
It has been suggested by Kleve (1978: 67) that the target of *DRN IV 777-817* is the Academic Carneades, because of the content and style of the passage. It is worth noting, with Bailey (1947: 1274), that a similar objection is moved against the Epicurean images by Cicero in *Ad familiares* XV. 16. 2 and in *De natura deorum* I. 108. Cicero may reflect an objection against the Epicureans he found in his Academic source, and Lucretius may be reproducing the response to such a point. But it seems somewhat unlikely that Epicurus himself would not have anticipated what are such obvious objections to his theory of images when setting it forward. Cicero could have overlooked (or not known about) Epicurus’ explanation. That Lucretius introduced ideas later than Epicurus in *DRN IV 777-817* is not proven.

Kleve defends the theory that *DRN I 1052-1113* are aimed at the Stoics specifically, pointing out that Diogenes (fragment 20 Chilton = fragment 66 Smith) similarly confutes a theory which supposes a finite world in an infinite void, but while according to the theory in Lucretius the world is spherical and tends toward the centre, in Diogenes “the earth is limited by the heavens above, but extends below without limitation”. Kleve goes on to point out that Diogenes also presents other variants of the
theory (without reference or supporting argument). Lucretius would have chosen the version of the theory which dealt with the Stoics. This argument, if it should be called that, is not stringent.  

The problem with *DRN* I 1052-1113 is especially difficult because Plato and Aristotle, Epicurus’ usual targets, also adopted a geocentric theory (Plato did not think that the elements had a natural tendency of their own; Aristotle thought that fire and air moved upwards), and because it is not certain whether lines 1083-1093 introduce a new theory or not. I am inclined to believe, with Furley (1966: 18), that Lucretius is describing just one theory, according to which earth and water tend towards the centre, apart from fire and air, which move away from the middle. Schmidt (1990: 221) puts forward six points to support his claim that the Stoics are the target: (a) Lucretius speaks in terms of tendency towards the middle of all stuff, even light matter: that thinkers other than the Stoics, including Aristotle, held such a view has not been proven; (b) despite the general tendency of all things towards the centre there is a mention of centrifugal movements: a conflict between two such views can only be found within the Stoic school; (c) Lucretius’ opponent believes in void outside the world, but Aristotle did not; (d) Plutarch similarly discusses tendency towards the centre in cosmology in connection with Stoicism; (e) Aristotle considered the theory of the closeness of the heavenly bodies ridiculous, and (f) the theory of increase which Lucretius treats in connection with the

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43 Indeed Smith (1992b: 511) is not able to rule out that the Stoics are the target in *Diogenes*, although he prefers to assume that the target is Xenophanes.
stars is a Stoic theory.

One cannot be certain about Schmidt’s points (a) and (b): Lucretius uses *omnia* in lines 1053 and 1056, but Furley plausibly suggests that in those lines *omnia* refers rather to earth and water in the antipodes. Sedley (1998: 79) is right that there is no sign of Lucretius exploiting an inconsistency between centripalism and centrifugality of air and fire in the position he is attacking, as Plutarch does in *S.V.F.* II. 434, presumably following a Peripatetic source. As for (c), it is true that in lines 1074-1082 Lucretius assumes void outside the world, but he does not expressly say the opponents subscribed to this. Lucretius’ source may simply be arguing in Epicurean terms; according to Furley (1966: 17-18) there is “no need to think the propositions were held by his opponents”.

It is unclear whether (c) makes it less likely that the opponent was Aristotle. Point (d) can be disregarded; Plutarch’s testimony may not be relevant at all to Lucretius. Point (e) seems to cast some doubt on the identification of Aristotle as the target. As for Schmidt’s point (f), this detail seems in fact to speak against thinking that the Stoics are the intended target of Lucretius’ source, since Sedley (1998: 78-79) draws attention to the fact that the Stoics thought that the heavens were nourished not by fire, but by moisture. One cannot be certain that Lucretius’ source was attacking the Stoics here. It certainly seems possible, if not likely, that Furley is right in holding that Zeno’s theory reported in *S.V.F.* I. 99 is a response to the arguments we find in Lucretius. Lucretius is probably reflecting Epicurus’ polemic with earlier thinkers. However one cannot take

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44 Schmidt (1990: 214-215) thinks that Plutarch and Lucretius depended on the same tradition.
it for granted that the intended target is Aristotle, as this requires Epicurus to have known only the works, or part of the works, where Aristotle had not yet elaborated the fifth element. It would not be the first time that we are not able to identify the quadruple pluralists Epicurus was taking issue with (see below pages 122-126).

Lucretius may perhaps have incorporated philosophical material later than Epicurus, but if he did so, he did so extremely sparingly. His source was Epicurus. Lucretius' remarks in DRN III 9-13 and DRN V 52-55 read like a statement to the effect that most, if not all, of his philosophical material is based directly on Epicurus' words. Lucretius would not have expressed himself in such terms had Epicurus not been his main source.\(^{45}\)

It may be objected that in some passages of DRN it cannot be proved, or even inferred, that Lucretius closely followed a Greek source. This seems to be the case for the prologues to each of the six books,\(^{46}\) DRN I 398-417,\(^{47}\) DRN I 921-950, the praise

\(^{45}\) On the didactic 'process' between Epicurus and Lucretius as represented in the poem see Schiesaro 2003: 58-60. He notes that DRN stages two didactic processes: one between Epicurus and Lucretius and one between Lucretius and Memmius. The image of vestigia, which Lucretius uses for Epicurus, illustrates the process of memory: the relationship hinted at is that between father and son. On Lucretius' didactic relationship with Memmius, below pages 376-382.

\(^{46}\) DRN I 1-158, or arguably 1-155. The prologue is a special case, if Sedley (1998: 23-32) is right in suggesting that Lucretius is following Empedocles' prologue to his Περὶ φύσεως in structure (below pages 323-324).

\(^{47}\) Below note 383.
of Empedocles and Sicily at *DRN* I 716-732, parts, if not all, of the account of sex and love at *DRN* IV 1037-1287, perhaps the attack on myths of punishment in the afterlife at *DRN* III 978-1023, and possibly the Magna Mater passage in *DRN* II 600-660. Some of these passages certainly contain 'original composition', but to suppose that Lucretius — even if he had received philosophical training — independently elaborated the arguments in the *critique* seems quite a different matter. None of the passages mentioned

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48 Lines 716-732 are part of the *critique*. Sedley (1989: 15) tentatively suggests that the passage itself could be “direct imitation of a lost passage of Empedocles”. But Empedocles is reported not to have describe Aetna in his writings. Lapini (2003: 96-97) points out that Timaeus, as reported by Diogenes Laertius VIII. 71 tells us, argued that Empedocles could not have committed suicide by throwing himself into Aetna because, amongst other reasons, he never mentions the craters of Aetna. On Lucretius’ description of Aetna, below pages 328-330.

49 Perret (1935) suggests that Lucretius and Varro, who was the first to treat the topic, depended on a Latin text, probably derived from Phrygian sources, which described the ritual and presented Cybele as *mater generosa*, while Boyancé (1941: 149) thinks Lucretius’ interest reflects his school’s interest in the *exegesis* given by the Stoics gave of the “myths patens”, pointing out that Zeno and Cleanthes were of oriental origin (Zeno was from Citium on Cyprus, and Cleanthes from Assos) and therefore would have been interested in cult of Cybele and Galli. Craca (2000: 28-29) refers to the treatment of the cult of Cybele in Philodemus’ Περὶ εὐσεβείας and considers the possibility that Apollodorus of Athens’ Περὶ θεῶν was Philodemus’ source. According to her (2000: 30) it is possible the *critique* of the myth comes from the Epicurean school, but it is more likely that Lucretius used a literary source which his audience would know well and appreciate. There is a parallel between the account of Cybele in *DRN* II and pseudo-Aristotle *Mirabilia* 162 (Sharples 1985: 133-134).
contains philosophical arguments.\textsuperscript{50} let alone detailed counter-arguments such as we find in the *critique*.\textsuperscript{51} The *critique* is a challenging passage from a philosophical point of view, and it is unlikely that Lucretius decided to do without a guide in this section of his poem.

1.1 Lucretius’ information is ‘second-hand’

Rösler (1973: 50-53) has shown that the reading of the three Presocratics in the *critique* shares misunderstandings introduced by Peripatetic doxography. Diels’ term ‘doxography’, which will occur repeatedly in what follows, is slippery and potentially misleading, therefore I shall define briefly how I understand the word.

Distinguishing what is ‘doxography’ from what is ‘use of doxography’ has proved a hard task. Mansfeld (2000: 347) defines doxography as follows: “... a systematic collection of tenets (doxai etc.) and not much more than that, though it may have a critical undertone and even sport explicit criticism”.\textsuperscript{52} He defines the term more inclusively than Diels, who thought that doxographical texts are those the content of

\textsuperscript{50} Both the final section of *DRN* III and *DRN* IV 1037-1287 contain philosophical arguments, but the style and presentation of these lines suggest that Lucretius was not following step by step a philosophical source-text.

\textsuperscript{51} Some of Lucretius’ characteristically Epicurean counter-arguments are rather complex, e.g. the initial argument against Heraclitus on rarefaction and condensation followed by the ruling out of other means of transmutation of the element (below pages 38-40).

\textsuperscript{52} As Mansfeld puts it “doxography proper is offspring of Aristotle’s dialectical overviews” and therefore originally considered positive as well as negative aspects of the δόξα.
which can be traced back to Theophrastus' Φυσικαὶ Δόξαι (henceforth ΦΔ).\textsuperscript{53} Mansfeld (1990: 3061-3062) also emphasises that the tradition was more fluid than Diels had envisaged.

The practice of composing lists of δόξαι was developed considerably by the Peripatetic school,\textsuperscript{54} although such collection of tenets most probably originated much earlier. There are indications that some kind of listing of δόξαι was practised in the Academy, but also previously (Mansfeld 1986: 3).

The nature of the evidence for specific works, and the problems over how we define 'doxography' in the first place, make it difficult to determine whether counter-arguments appeared in the doxographical tradition, and what kind of counter-arguments these may have been. Paradoxically, if counter-arguments are 'use of doxography', Theophrastus' ΦΔ may itself turn out not to have been pure, i.e. 'criticism free',

\textsuperscript{53} Mansfeld (1990: 358-359 and 1992b: 64-66) argues persuasively that Φυσικαὶ δόξαι, rather than Φυσικῶν δόξαι, was the wording of the title.

\textsuperscript{54} Earlier δόξαι are reviewed in Aristotle's Physics (184a10 -192b4) and especially in Metaphysics A, where δόξαι take up most — twenty six out of thirty three and a half pages in the OCT edition — of the book, allowing for some Aristotelian theory within the 'critical' section. Theophrastus not only reported views in his lost ΦΔ, but is also said to have composed one book Πρὸς τοὺς Φυσικοὺς (FHS&G 137 and 138) and works devoted to report and, at least in some cases, criticism of individual philosophers' theories (FHS&G 137 27-32, 33, 39, 40, 41), assuming that these were not part of the ΦΔ. The Peripatetics were perhaps the first philosophical school to collect information for the sake of collecting. Aristotle held that a consideration of previous views might help in arriving at the truth; therefore understanding and reporting of earlier views was required. In this sense 'providing information' was the Peripatetic school's aim when listing earlier views.
doxography. Taurus, as Mansfeld (1990: 3207) mentions, shows that counter-arguments were included in Δ (FHS&G 241A).

Baltussen (2000: 242) suggests that the term ‘critical endoxography’ ‘represents much better the theory and practice of the early peripatetic school . . .’ Aristotle and Theophrastus collected views on particular topics in the context of dialectic (ἐνδοξα). It is not wholly clear whether Baltussen thinks Theophrastus’ Δ, of which Theophrastus’ De sensibus may have been a part, was itself an example of ‘critical endoxography’. Theophrastus’ De sensibus shows that the Peripatetics produced works, or at least sections of works, which listed, in more or less comprehensive fashion, previous opinions and passed judgement on them.

The surviving text which comes closest to a ‘criticism free’ form of doxography is Aëtius’ Placita, as reconstructed by Diels through Pseudo-Plutarch and Stobaeus, although here too criticism appears on rare occasions. Aëtius uses forms of the verb ἀμαρτάνειν in reference to Thales in I. 2. 2, and to Anaximander in I. 3. 3, Anaximenes in I. 3. 4 and Anaxagoras and Plato in I. 7. 7. Criticism is also explicit in I. 5. 3, against Plato.55 This kind of incidental criticism, however, is very different from Lucretius’ series of counter-arguments. In Lucretius the aspect of reporting positive, as well as

55 Mansfeld (1990: 3206-3207) implies that the traces of argument surviving in Aëtius derive from Theophrastus, and that the objection in I. 7. 7 states the Epicurean argument against the Stoics. Baltussen (2000: 242, note 18) mentions that Aristotle regularly uses ἀμαρτάνειν when judging views of others (Nicomachean Ethics passim; Physics 213a24; Topica 125b20, Metaphysics 1090b32, De respiratione 474a18).
unacceptable, aspects of other thinkers' views is completely lost.56

It can be said, generally speaking, that in their reports of earlier δόξαι (a) the Peripatetics found support in earlier views and at times rejected them, to argue that their own views were right; (b) the Neo-Pyrrhonists and Academic Sceptics argued that no view is right, since for them the very existence of rival views is itself an argument against the truth of any of them;57 and (c) the Epicureans were more prone to attack everyone else.58 Members of the Epicurean school produced texts listing earlier views59 with the

56 Compare this with Epicurus’ introduction to his polemic against earlier δόξαι in column XXIV of ΠΦ XIV, where Epicurus points out that he discusses such views to free pupils from the ταραχή which they may cause (below pages 95-96).

57 Mansfeld (1999: 18) argues that the diaphonic structure which is found in Aëtius is derived from the Sceptics, who wished to show deadlocks in opinion. According to Mansfeld (1992b: 68-69) the pupils of Arcesilaus composed “... a predecessor, or several predecessors” of the Vetusta Placita by using Theophrastus’ collection of δόξαι as well as other sources, and tried to produce αντιλογία and διάφορια: in most chapters of Aëtius the diaeresis is not complete but the διάφορια “is brought out quite effectively”. Boys-Stones (2001: 123-146) suggests that the Middle Platonists considered all other philosophies deviations from Plato as a way of replying to the Sceptics.

58 According to Obbink (2001: 225) in his review of earlier δόξαι on the gods in book II of Περὶ εὐσεβείας: “Philodème n’aborde pas l’histoire de la théologie de manière purement négative et destructrice”. Nevertheless Philodemus’ attitude seems more one sided than texts produced by the Peripatetic school or any other school.

59 One could draw a further distinction when considering such works, i.e. between those which (a) had a preliminary list of views followed by a separate section refuting such views, as in Theophrastus’ De sensibus, such as e.g. Philodemus’ Περὶ ποιημάτων and Diogenes of Oenoanda’s inscription on physics
intent of refuting them; they usually layed less emphasis on reporting comprehensively previous views, and concentrated on refutation of earlier views more than Theophrastean ‘doxography’ had done, and the post-Theophrastean Placita tradition would do.

When using ‘doxography’ in what follows I shall use the term to refer to texts listing earlier views which ultimately depend on Theophrastus’ collection of tenets, but keeping in mind that the tradition was not rigidly fixed, that the information was adapted to different uses in different schools, and that in some cases counter-arguments appeared.

That Lucretius relied on information handed down by the Theophrastean doxographical tradition, rather than the original writings of the Presocratics is most evident in his treatment of Heraclitus. His confutation of Heraclitus depends on the definition of Heraclitus’ ἀρχή that Aristotle gives in Metaphysics A. 3. 983b8. Lucretius follows Aristotle’s and Theophrastus’ reading and presents Heraclitus as a physical monist who adopted fire as his material ἀρχή.60

In DK B30 Heraclitus does say that the κόσμος itself is an ‘ever-living fire’, but this does not show that he envisaged fire as a material ἀρχή. The term κόσμος means “world-order”, rather than “world” before the fourth century B.C. Heraclitus thought of πῷρ as the regulating element of the world. Heraclitus’ πῷρ had aspects other than the

(60) Aristotle considers the ultimate material “a substrate which persists but undergoes changes of quality” and reads all the Presocratics’ principles in this way, thus misinterpreting them (McDiarmid 1953: 91).
purely material, such as process and change.\footnote{Some scholars (e.g. Zeller, Burnet, Chemiss) have even gone as far as to argue that fire was purely symbolic for Heraclitus.}

The inclusion of Heraclitus with the Ionian monists is probably due to Aristotle. Pre-Aristotelian sources suggest that Heraclitus was not universally seen as a material monist. In Plato’s \textit{Sophist} 242D Heraclitus is treated as someone who combines monism and pluralism — a suitably Heraclitean thing for him to have done, given his doctrine of the identity of opposites. DK B26, DK B117 and DK B118 show that the opposition between fire and water was important for Heraclitus. Plato \textit{Cratylus} 402 may reflect this to some extent. And Mansfeld (1983: 44) endorses Snell’s suggestion that \textit{Cratylus} 402A-C and Aristotle \textit{Metaphysics} A. 3. 983b20-984a5 (dealing with Thales) derive from Hippias. Mansfeld disagrees with Snell’s further supposition that Plato swapped Heraclitus for Thales because he was being humorous. According to Mansfeld (1986: 23-24) Hippias’ ‘doxographical work’ probably implied, as does Plato, that Heraclitus derived things from water.\footnote{Cicero \textit{De natura deorum} III. 35 may be relevant: \textit{sed omnia vestri} [the Stoics], \textit{Balbe, solent ad ignem vim referre, Heraclitum, ut opinor sequentes, quem ipsum non omnes interpretantur uno modo}. But perhaps the uncertainty refers to Heraclitus generally rather than the discussion of \textit{στοιχεῖον} specifically.} It looks as though it was Aristotle’s reading\footnote{Aristotle did not rely only on originals for his discussion of the monist physicists (Mansfeld 1986: 34-35).} that misled Lucretius or, more probably, Lucretius’ source, and led him to consider, mistakenly, Heraclitus a typical Ionian monist, who posited fire as his material \textit{στοιχεῖον}. 

\footnotetext[61]{Some scholars (e.g. Zeller, Burnet, Chemiss) have even gone as far as to argue that fire was purely symbolic for Heraclitus.}

\footnotetext[62]{Cicero \textit{De natura deorum} III. 35 may be relevant: \textit{sed omnia vestri} [the Stoics], \textit{Balbe, solent ad ignem vim referre, Heraclitum, ut opinor sequentes, quem ipsum non omnes interpretantur uno modo}. But perhaps the uncertainty refers to Heraclitus generally rather than the discussion of \textit{στοιχεῖον} specifically.}

\footnotetext[63]{Aristotle did not rely only on originals for his discussion of the monist physicists (Mansfeld 1986: 34-35).}
That the information in Lucretius ultimately depends on Theophrastus is itself unremarkable. Given Heraclitus' obscurity it seems natural to assume that anyone commenting on his theories, even if he had available his original text, would look for help in interpreting Heraclitus' notoriously obscure prose. Theophrastus' collection of δόξα, or later collections which derived from it, would certainly have been the obvious place to look.

Further evidence that Lucretius depends on the Peripatetic tradition comes from his attribution to Heraclitus of the non-Heraclitean theory of creation through rarefaction and condensation. While it seems extremely unlikely that Heraclitus himself ever referred to condensation and rarefaction, it would appear from FHS&G 225 that Theophrastus attributed such a theory to Hippasus and Heraclitus. McDiarmid (1953: 94-95) is probably right in suggesting that it was Theophrastus who introduced such an erroneous inference.

The interpretation of Heraclitus as a material monist who believed in condensation and rarefaction shows that at least some of the arguments in Lucretius'

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64 We shall see chapter 4.1 how there are indications that Lucretius parodied Heraclitus' expressions, which suggests a degree of familiarity with Heraclitus' text.

65 Rösler 1973: 52. Theophrastus is reported (FHS&G 226B) as having attributed condensation and rarefaction to Anaximenes alone in his ιστορία (which could be the same work as the ΦΑ) but elsewhere apparently to Diogenes of Apollonia as well (FHS&G 226A).

66 In Physics A. 6. 189b8-10 and Metaphysics A. 8. 988b34-989a1 Aristotle's remarks suggest that all monists used condensation and rarefaction and this may have misled Theophrastus (Cherniss 1964: 14).
critique are based on the information about the Presocratics handed down by the Peripatetic school. The argument in lines 647-664 depends on a specifically Peripatetic reading of Heraclitus as a material monist, a reading which the doxographical tradition took over. Aëtius (I. 3. 11) comments on Heraclitus and Hippasus: . . . ἐκ πυρὸς γὰρ τὰ πάντα γίνεσθαι καὶ εἰς πῦρ πάντα τελευτᾶν λέγουσιν. τούτου δὲ κατασβεννυμένου κοσμοποιεῖσθαι τὰ πάντα· πρῶτον μὲν γὰρ τὸ παχυμερέστατον αὐτοῦ εἰς αὐτὸ συστελλόμενον γῇ γίγνεται, ἐπεὶ τὰ ἀναχαλωμένην τὴν γῆν ὑπὸ τοῦ πυρὸς φύσει ὅπως ἀποτελεῖσθαι, ἀναθυμιμένων δὲ ἀέρα γίνεσθαι, πάλιν δὲ τὸν κόσμον καὶ πάντα τὰ σώματα ὑπὸ πυρὸς ἀναλυόσθαι ἐν τῇ ἐκπυρώσει. Aëtius’s entry shows elaboration.67 It speaks in terms of πυρὸς κατασβεννυμένου, but τὸ παχυμερέστατον αὐτοῦ εἰς αὐτὸ συστελλόμενον suggests that the quenching of fire results from a process of condensation.

Against this background it is somewhat surprising that Lucretius only attributes condensation and rarefaction to Heraclitus hypothetically (Giussani 1898: 90).68 In line

67 It is unclear whether Aëtius is here attributing to Heraclitus a theory of air, water and earth as prior to other substances. Lucretius makes no reference at all to the processes whereby Heraclitus’ fire turns into water, earth, and air. A theory comparable to the one in Aëtius here surprisingly appears, later on in the critique, as part of Lucretius’ criticism of Empedocles and the quadruple pluralists in lines 782-802. This is so surprising that some critics have thought the lines are aimed at the Stoics’ reading of Heraclitus (below page 75).

68 Theophrastus’ statement that Heraclitus envisaged condensation and rarefaction in FHS&G 225 is followed by the statement that all things are an exchange for fire, which is presented as a supporting reason

39
647 the imperfect subjunctive is used: *nihil prodesset enim calidum denserier ignem.*

The fact that the line of argument in the *critique* puts in doubt whether Heraclitus employed condensation and rarefaction, and proceeds to refute the possibility of other means of transformation may indicate that whoever constructed the arguments was not at the mercy of Theophrastus' reading of Heraclitus, but rather elaborated the information, and indeed considered the possibility of an interpretation of Heraclitus different from Theophrastus'. But the fact that means other than condensation and rarefaction are considered may well rather betray a desire to argue against any other possible forms of fire-monism. Aristotle's way of proceeding in *De caelo* Γ. 5. 304a8-304b12 is a useful comparison. Alternatively the consideration of means other than condensation and rarefaction may simply signal that the argument will rule out the possibility of such a process, Heraclitus not allowing for void. What seems certain is that either Lucretius or, more probably, his source, speculated on the information handed over to them by the doxographical tradition concerning Heraclitus, perhaps to extend the confutation to other forms of fire-monism.

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for the claim that Heraclitus used condensation and rarefaction (*γάρ*). This may indicate that Theophrastus himself was aware of the fact that Heraclitus did not make clear the means by which fire turned into other elements. This may also be the reason why Aristotle did not, as far as we know, explicitly attribute condensation-rarefaction to Heraclitus.

One may wonder whether Lucretius' source concentrated on Heraclitus as much as Lucretius does (granted that Lucretius speaks in terms of Heraclitus and his followers), or addressed fire monism, or perhaps monism, in more general terms. We shall see in chapter 2 how Epicurus similarly attacked the monists' theory of condensation and rarefaction in ΠΦ XIV, although ΠΦ XIV was not Lucretius' direct source.
A further indication that Lucretius' critique ultimately depends on doxography comes from its ordering according to the number of principles. As Mansfeld (1990: 3153) points out: "Lucretius is explicit about the number of principles involved, and he has arranged the doctrines in the sequence one - two - four - infinitely many. This arrangement is a sure sign of a doxographic backdrop; numerous parallels exist".

Although Lucretius certainly does not stress that Anaxagoras' principles were infinitely many, and indeed this is only implicit in the number of examples Lucretius gives, and the cetera of line 842, Mansfeld’s general point is valid. The chances are that

70 Mansfeld (1990: 3154) surmises from the absence of references to Posidonius and Asclepiades that there is no reason to think that Lucretius’ source for the doxographical material was as late as the first century B.C. Presumably he has in mind the Vetustissima Placita, if not Theophrastus’ ΦΔ. Diels dated the Vetusta Placita to the first half of the first century B.C. Mansfeld (1990: 3062 and 3167-3170) suggests that a precursor of the Placita existed at the time of Chrysippus. According to Mansfeld Varro and “Cicero (or Cicero’s Academic sources)” used this source rather than its first century update.

71 Lucretius mentions two versions of dualism, one (a) involving the pairing air-fire and the other (b) the pairing earth-water (lines 712-713). The latter has been thought to refer to Xenophanes’ theory, the former to Parmenides’. Plato in Sophist 242c has the pairings moist-dry, hot-cold, without attributions. But Theophrastus in FHS&G 227A singles out Parmenides as believing in two elements πῦρ καὶ γῆ (ἐν μᾶλλον φῶς καὶ σκότος). FHS&G 227C and 227D also make the point that Parmenides thought earth and fire to be the two elements. If Lucretius, or his source, had Parmenides in mind for the pairing air-fire, using air to allude to Parmenides’ night (Greek ἁμρό is often linked with mistiness and obscurity), he knew the correct version, not the Peripatetic doxographical one, which Cicero adopts in Academica II. 118. But in Lucretius the abstract pairings may be more important than any specific attributions.

72 See Mansfeld 1990: 3157-3161.
the arrangement derives from the doxographical tradition. In my view Lucretius imported the arrangement according to number of principles from a Greek Epicurean text which based its classification on the one developed by Aristotle and Theophrastus. The author of Lucretius’ source-text adapted this classification, so as to have three distinct categories: monism, limited pluralism and unlimited pluralism. Lucretius’ handling of the confutation of Anaxagoras has obscured this approach.73

It is worth noting in this context, though, that the sequence in Aëtius is remarkably different from the one in Lucretius.74 Anaximenes (I. 3. 4) is followed by Anaxagoras (I. 3. 5), and Heraclitus only comes later on (I. 3. 11), at the start of the sequence leading to Epicurus.75

The fact that Lucretius attacks the fire-monists in lines 655-664, the quadruple-pluralists in lines 742-745 and Anaxagoras in line 841 because they do not allow for the existence of void also betrays dependence on doxographical information. The argument

73 We shall see in chapter 4 how laying emphasis on the personalities of Heraclitus and Empedocles especially was a priority in Lucretius’ agenda.

74 Mansfeld (1990: 3161) notes that the list in Aëtius is not organised according to the number of principles, but he does not provide an explanation for it.

75 Schofield (1975: 3-4) endorses Diels’ suggestion that in chapter 3 of Book I of the Placita (Περὶ ἰδεῶν) Aëtius did not use a doxographical epitome in the strict sense, as he seems to have done elsewhere, but a biographically organised epitome of the kind Hippolytus and Diogenes drew upon (Theophrastus still being the ultimate source).
is 'anachronistic' as far as Heraclitus is concerned. Void only became a topic of debate amongst Greek philosophers well after his time. Aristotle in De caelo Δ. 2. 309a19 groups Empedocles and Anaxagoras as not believing in void. Aëtius (I. 18. 1) groups all the φυσικοὶ ἀπὸ Θάλεως as not allowing for void. It is interesting that Lucretius, or, more probably, his source, happily repeated the same argument against different targets (with the formulation getting progressively shorter).

In lines 746-752 Lucretius attacks Empedocles for allowing for infinite divisibility, immediately after having attacked him for not allowing for void (lines 742-745). The argument against infinite divisibility is also used against Anaxagoras in line 844. The general statement in Aëtius I. 16. 1 οἱ ἀπὸ Θάλεως καὶ Πυθαγόρου πάθητα σώματα καὶ τμητὰ εἰς ἄπειρον may be behind this, especially in the case of Empedocles (Röslar 1973: 57). It is not clear whether the general statements in Aëtius

76 On whether the argument could be intended against the Stoics, rather than Heraclitus himself, below pages 67-69.

77 The matter was probably first considered by Zeno of Elea (fifth century B.C.). Anaxagoras tried to show that τὸ κενὸν οὐκ ἔστιν (KRS text 470).

78 Röslar 1973: 56.

79 The same arguments are also used against different opponents, at times, in Cicero's De natura deorum I. 25-43, and therefore, one would assume, in Cicero's Epicurean source.

80 One can see why Giussani (1898: 99-100) calls lines 742-762 "... quasi un sommario della prima parte del primo libro", since the existence of void, and the impossibility of infinite divisibility have been two of the topics treated thus far. Bailey (1947: 728) notes that the point is "stated dogmatically" because of Lucretius' discussion in lines 335-345, and draws attention to DRN'1331 quod tibi cognossee in multis erit utile
regarding void and infinite divisibility go back to Theophrastus, if they did they may have influenced Epicurus himself, as well as later Epicureans.

Lucretius has seven examples of Anaxagoras' 'stuffs': ossa, viscus, sanguen, aurum, terra, ignis, umor. Rösler (1973: 59-60) argues that Lucretius’ illustrations derive from the doxographical tradition. Robin (1925: 162-163) and Bailey (1947: 746), on the other hand, thought that the examples derive from Anaxagoras’ own writings.

Viscus / viscera probably goes back to Anaxagoras; it is paralleled in KRS text 485: πῶς γὰρ ἐν ἔκ μῆ τριχὸς γένοιτο θρίξ καὶ σαρπεξ ἐκ μῆ σαρκός; Examples of animal tissues figure in Aetius’ discussion of Anaxagoras in I. 3. 5, where θρίξ, φλέψ, ἄρτηρια, νεύρα, ὀστᾶ καὶ τὰ λοιπὰ μόρια are mentioned. A comparable and more comprehensive list of animal tissues in connection with Anaxagoras’ theory is found in Simplicius In phys. (C.A.G.: 460, lines 15-17): . . . καὶ τροφής δὲ τῆς αὐτῆς

rebus and 357-390 — cf. also DRN I 565 where inane makes things mollia, with examples from the four Empedoclean elements. There may be an indication here that Lucretius pointed out where Empedocles was at odds with the theory he had set out thus far in the book. Still, I am inclined to believe Lucretius was reproducing arguments he found in his Greek source.

81 Rösler (1973: 61) also rightly compares DK B12 . . . ἐτερον δὲ οὐδὲν ἐστιν ἄλλη ὀτών πλείονα ἔνα, ταῦτα ἐνδηλιότατα ἐν ἡκαστόν ἐστι καὶ ἡν with 875-879, although he notes that there is no mention in Lucretius of Noûs (which is prominent in DK B12).

82 Schofield (1975: 14) has argued that DK B10, a scholium to Gregory of Nazianzus XXXVI. 911, is neither a quotation of Anaxagoras (Diels), nor a paraphrase of Anaxagoras’ words. See however KRS: 369-370.
προσφερομένης οἴον ἄρτου πολλὰ καὶ ἀνόμοια γίνεται, σώρικες ὡστὰ φλέβες νεῦρα τρίχες δύναται καὶ πτερὰ δὲ εἴ οὔτω τόχοι καὶ κέρατα αὐξείται δὲ τὸ ὅμοιον τώι ὁμοίωι . . . .

None of these texts is an exact parallel for Lucretius’ use, since they do not claim that Anaxagoras thought that skin etc. was made up of portions of skin, but rather state, in the context of the problem of nutrition, that the are portions of skin, bones etc. in bread and water. This still implies, though, that Anaxagoras considered such substances fundamental. And Lucretius’ example from gold in line 839 is paralleled in Theophrastus FHS&G 228, and in Diogenes Laertius II. 8. Theophrastus, who presumably had Anaxagoras’ text at his disposal, seems to have focused on gold in his explanation, assuming that Simplicius reflects Theophrastus’

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83 Simplicius’ examples may derive from Theophrastus. Schofield (1975: 10-11) argues that Simplicius took over the examples from the writings of Theophrastus, conflating it with material from Ammonius’ lectures on the Physics. According to Schofield Simplicius, who only ever speaks of Anaxagoras’ first book, did not consult Anaxagoras’ text, but depended on the fragments of Anaxagoras which he found in Theophrastus’ De Anaxagora (as proposed by Lanza).

84 Chemiss (1964: 3) thinks that Aristotle’s application of his technical term θύμοιομερή to the theory of Anaxagoras implies that Anaxagoras spoke of flesh, bone etc. as constituents of Empedocles’ so-called elements, to explain how things were generated by the four ‘elements’.

85 On the presentation of the problem of nutrition in Anaxagoras in the critique, below pages 83-84.

86 . . . τὰς μὲν σωματικὰς ἀπείρους ποιήσας, πάντα γὰρ τὰ ὅμοιομερή, οἷον ὅδωρ ἢ πῦρ ἢ χρυσόν, ἀγένητα μὲν εἶναι καὶ δύνατα φαινεθαι δὲ γινόμενα καὶ ἀπολλύμενα συγκρίσει καὶ διακρίσει μόνον, πάντων μὲν ἐν πάσιν ἐνότην. ἐκάστου δὲ κατὰ τὸ ἐπικρατοῦν ἐν αὐτῶν χαρακτηριζομένου. χρυσός γὰρ φαίνεται ἐκεῖνο, ἐν δὲ πολὺ χρυσίον ἐνι, κατὰ πάντων ἐνότην.
It is Lucretius' mention of terra, ignis and umor that is hard to square with the idea that Lucretius drew his examples from Anaxagoras' own text. While Aristotle *Metaphysics* A. 3. 984a11 gives water and fire as example of όμοιομερή and Diogenes Laertius II. 8 report that Anaxagoras held the Empedoclean elements to be όμοιομερή, in *De caelo* Γ. 3. 302a28 Aristotle says that 'Αναξαγόρας δὲ τούναντίον τὰ γὰρ όμοιομερή στοιχεῖα (λέγω δ' οἶον σάρκα καὶ όστον καὶ τῶν τοιούτων ἐκαστὸν), ἄερα δὲ καὶ πῦρ μίγμα τούτων καὶ τῶν ἄλλων σπερμάτων πάντων.

It also seems relevant that *De generatione et corruptione* A. 1. 314a18 makes no mention of the four elements: ['Αναξαγόρας] ... τὰ όμοιομερή στοιχεία τίθησιν οἶον ὀστοῦν καὶ σάρκα καὶ μυελὸν καὶ τῶν ἄλλων, ὥν ἐκαστοῦ συνώνυμον τὸ μέρος ἐστὶν. KRS (373) take it that Anaxagoras did not consider the four elements were not primary substances. It is certainly conceivable that Anaxagoras had limited himself to metals and animal tissues. Anaxagoras may well have spoken in terms of portions of the opposites rather than the four elements themselves. He refers to hot/cold and wet/dry in DK B12 and DK B15; the opposites also appear in DK B3.

Theophrastus used, following *Metaphysics* A, water and fire as examples in FHS&G 228A. According to McDiarmid (1953: 111) the use of fire and water as examples is misleading.\footnote{McDiarmid (1953: 111-112) suggests that "the fact that Theophrastus adds gold along with fire and water as an example of the homoeomeries is a tacit recognition that these are not elements in the Empedoclean sense".} In giving three of Empedoclean elements as examples of

\footnote{McDiarmid (1953: 111-112) suggests that "the fact that Theophrastus adds gold along with fire and water as an example of the homoeomeries is a tacit recognition that these are not elements in the Empedoclean sense".}
Anaxagoras’ fundamental stuffs the critique seems to agree in error once again with the Peripatetic tradition which influenced Simplicius and Diogenes Laertius. Yet it seems worth noting that the examples do not appear in a list as inclusive as the one in Lucretius. We cannot assume that Lucretius’ list of examples reproduces exactly the one in his source; Lucretius may well have added examples himself, for rhetorical reasons.88

There are two kinds of text Lucretius may have used, which could have contained the doxography-derived information found in the critique: (a) texts which reflected the doxographical tradition in scope by emphasising different views on a topic, whether correct or incorrect and (b) texts which were more critical in their listing and review of earlier δόξαι.

Both kinds of texts would have been available to Lucretius. The availability of texts of type (a) is shown by Cicero Academica II. 118-123 where the speaker, Varro, lists the views on the elements of thirteen thinkers: Thales, Anaximander, Anaximenes, Anaxagoras,89 Xenophanes, Parmenides, Leucippus, Democritus, Empedocles, Heraclitus, Melissus, Plato and the Pythagoreans. Cicero was probably following a

88 It may be significant in this respect that only bone, flesh and blood are used in the actual arguments.

89 The report of Anaxagoras’ theories in Cicero calls for comment: materiam infinitam, sed ex ea particulam, similis inter se, minutas, eas primum confusas, postea in ordinem adductas a mente divina. It looks as though a development in distinct chronological phases is envisaged. On the whole it is materia infinita rather than the minutae particularae similis inter se which take centre stage. This should be compared with Theophrastus 228 FHS&G, the ‘Anaximandrean’ reading of Anaxagoras. The information in Cicero seems very different from that in Lucretius’ confutation of Anaxagoras.
'doxographical' list by the 'New Academy'. Reid (1885: 52) suggests Cicero depended mainly on Clitomachus' lost work Περὶ ἀρέσεων (Diogenes Laertius II. 92), which was probably a critical history of philosophy. It is interesting that, apart from Plato, all the thinkers included in the list in Academica are Presocratics. This may point to the fact that, as Mansfeld (1990: 3180-3183) suggests, the doxographical texts Cicero used go back to the third century B.C., rather than having been updated later.

But texts which reviewed δόξαι in a way which was more emphatically critical would also have been available to Lucretius. Members of the Epicurean school composed works which refuted earlier thinkers' views, following Epicurus' example. That Epicurus had a critical vein is shown by the fact that he wrote an 'Επίτομη τῶν πρὸς θεωρικούς, by the fact that he is said to have criticised Anaxagoras (Diogenes Laertius X. 12) and the Cyrenaics (Diogenes Laertius X. 136-137), and by the title Πρὸς Μεγαρικοῦς διαπορία (Diogenes Laertius X. 27). Philodemus refers to Epicurus' Πρὸς Δημόκριτον (Arrighetti text [11]), and Plutarch to the second book τῶν Πρὸς Θεόφραστον (Usener 29-30). Most of the 'preserved' books ΠΦ contain polemic of some kind. Ad Herodotum and Ad Pythoclem also display criticism of earlier

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90 Lucretius limits himself to the Presocratics in the critique.

91 On this text, below pages 193-194 and 254.

92 Criticism is attested in most of the 'extant' books, e.g. II, XI, XIV, XV, XXXIV (below note 192). And in ΠΦ XII — Philodemus tells us — Epicurus criticised Prodicus, Diagoras, and Critias (Arrighetti text [27] 2). Polemic in ΠΦ also appears in Pherc. 1413 (Arrighetti 1973: 650), which is thought to be from the ΠΦ (below note 391), and in Pherc. 1039, which is probably from ΠΦ (Puglia 1988b; see especially fragment
views. I accept however that Epicurus was not as harsh in his polemics as later writers, e.g. Diogenes Laertius and Cicero, portray him to be. Sedley makes a good case for thinking that Epicurus’ polemical vein was exaggerated by his disaffected contemporary, Timocrates, who then influenced later writers.

Colotes, Epicurus’ younger contemporary, confuted the views of a number of earlier thinkers in his “Ὅτι κατὰ τῶν ἄλλων φιλοσόφων δόγματα οὐδὲ ζήν ἐστιν.” Hermarchus similarly attacked philosophical opponents. Obbink (1988: 432) suggests that in his work Πρὸς Ἐμπεδοκλέα a number of philosophical schools were attacked including the Pythagoreans and Plato (although the intended targets were rather the Stoics and Peripatetics who are not named in the text, but who considered these earlier thinkers authorities).


Kleve (1978: 41) calculates that in Ad Herodotum and Ad Pythoclem 10 paragraphs out of 80 contain explicit criticism (he compares this with 1153 lines out of 7411 in Lucretius. Kleve assumes that the amount of polemic in ΠΦ was considerably higher than Lucretius.


Colotes’ work is lost, but Plutarch’s Adversus Coloten provides evidence about it. Vander Waerd (1989: 230) notes that: “beginning with Democritus, who takes pride of place as the father of atomism, and concluding with certain unnamed contemporaries whom Plutarch identifies with the Cyrenaics and the Academic followers of Arcesilaus, who suspend judgement on all matters, Colotes attacks in chronological order Parmenides, Empedocles, Socrates, Melissus, Plato and Stilpo”.

The title Ἐπιστολικὰ περὶ Ἐμπεδοκλέους in Diogenes Laertius X. 25 is probably a corruption of two separate items (Vander Waerd 1988: 88, note 5).
Later, surviving examples of compositions by Epicurean authors which systematically refuted earlier thinkers’ views are (1) the listing and refutation of earlier views on the fundamental nature of matter by the Epicurean Diogenes of Oenoanda,97 (2) the listing and refutation of earlier views on various subjects in works by Philodemus, e.g. his Περὶ ποιημάτων,98 Περὶ μουσικῆς, and Περὶ ῥητορικῆς,99 and especially (3) the lists and refutation of δόξαι on the gods found in Cicero’s De natura deorum I. 25-43 and in Philodemus’ Περὶ εὔσεβείας, which resemble one another to a striking degree.100

It may be that (a) Cicero was using Philodemus’ Περὶ εὔσεβείας directly101 or that (b) both Philodemus and Cicero, were following a common source which listed

97 Diogenes states that criticism ought to precede the presentation of (Epicurean) positive theory. Cicero, similarly, has confutation ahead of the presentation of Epicurean theory in De natura deorum I. In Philodemus, however, the critique of earlier δόξαι came in PHerc. 1428. i.e. in the final part of the work.

98 See Asmis (1992a: 396-397) for Philodemus’ discussion in Περὶ ποιημάτων V of the δόξαι παρὰ Ζήνωνι, with no names attached to such theories.


100 Both authors refer to (a) Xenophon’s Ἀπομνημονεύματα (31), to (b) the Φυσικός of Antisthenes (32), to (e) book III of Aristotle’s Περὶ φιλοσοφίας (33), to (d) books I and II of Chrysippus Περὶ θεῶν, the former book treating the Stoic theology in general, and the latter explaining the mythology of Orpheus, Musaeus, Homer and Hesiod, (41) and (e) to the Περὶ τῆς Ἀθηνᾶς of Diogenes of Babylon.

101 Pease thinks that Cicero used an epitome prepared by an assistant of his, or by Philodemus himself. It is not easy to see why Cicero left out Heraclitus and Prodicus, who appear in Philodemus. Diels thought this is because their views are like those of the Stoics and Persaeus respectively.

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earlier δόξαι on the gods, composed by an earlier Epicurean, such as Zeno, or Phaedrus, whom we know had been to Rome, and perhaps taught there (above page 18).  

Obbink (2001: 209 and 2002: 188-189), followed, more tentatively, by Dyck (2003: 9), argues that (a) Cicero had a copy of Philodemus’ work in front of him, because chapters 25-41 of De natura deorum I are translated from the conclusion of Philodemus’ treatise: the lists of philosophers match exactly, as does the order in the

102 Whether Phaedrus could have been the source depends to some extent on what one makes of the suggestion by Summers (1997: 310) that the book Cicero asks for in his Ad Atticum XIII. 39 (Φαίδρου ΠΕΡΙΟΞΩΝ et ΠΛΑΙΔΟΣ) was Phaedrus’ Περί δόξων (rather than Περί θεών). This is relevant because Cicero wrote the letter when he had started writing his refutation of Epicurean theology (see Ad Atticum XIII. 58, with Obbink 1996: 23, note 1). Cicero had already written the list of views about the gods, without consulting these books. If Summers is right, it may be that Cicero had already received Phaedrus’ Περί θεών from Atticus. If not, one can accept the inference that Phaedrus’ Περί θεών would have served only to fill up any gaps (Dyck 2003: 7). As to ΠΛΑΙΔΟΣ, or as MS R has it ΣΙΑΛΙΝΔΟΣ (Shackelton Bailey 1966: 237), Summers (1997: 311) proposes Περί φιλαίας (Cicero looking forward to the Laelius de amicitia) in place of Orelli’s Παλλάδος, which is accepted by Obbink (1996: 22-23) as <Διογένεως Περί> Παλλάδος, an alternative title for Diogenes of Babylon’s Περί τῆς Ἄθηνας. The possibility that the second title too is, as Summers thinks, a book by Phaedrus seems certainly worth considering.

103 Auvray-Assayas (2001: 229) doubts that Cicero had the text of Philodemus “«sous les yeux»: la structuration de la mémoire, suivant les méthodes pratiquées par les Anciens, suffit à expliquer qu’il restitue le même ordre que Philodème, . . . ” But the kind of correspondence in detail we find between Philodemus and Cicero suggests direct copying to me, and we know that Cicero was asking for books (rather than working from memory).

104 In note 14 Obbink points out that “re-examination of the papyrus has yielded several new names as well as gaps where the name of several philosophers present in Cicero but previously missing in Philodemus
summary of views of the poets. Obbink suggests further, inconclusively in my view, that Philodemus’ source was the Stoic Diogenes of Babylon.

Certainty that Cicero was using Philodemus’ work would have important implications for the diffusion of Philodemus’ prose works. But it seems impossible to rule out that both Philodemus and Cicero were following closely the list in a text by Zeno. Criticism of earlier δόξα in a list was a topic where reproducing the sequence which had already been worked out in the school would have been natural. It has been suggested that Philodemus’ works were in fact his notes of lectures by Zeno.

are securely placed”, something Pease (1955: 40) suspected. Obbink (2002: 195) also uses as argument the fact that Cicero’s compressed catalogue of the faults of poets’ account of the gods reproduces the order in Philodemus’ lengthy account of views of the poets, historians, mythographers and grammarians, despite the omission by Cicero of δουλεία of the gods and the cosmogonies.

The list which is behind Philodemus’ and, either directly, or indirectly, Cicero’s list does not seem directly based on the same source as the one in Aetius I. 6-7, which starts with the ‘atheists’, then considers Anaxagoras and Plato, and then picks up from Thales again to consider 27 philosophers (some of these are grouped together as holding the same theory, so that 22 δόξα are discussed).

Philodemus’ poetry has been found in papyri in Egypt, and Gigante (2003: 22-23) notes that Cicero in In Pisonem 70-71 says that Philodemus’ poetry is read by many people. Yet this does not mean that his prose works were widely read. Arrighetti (1998: 28, note 25) remarks that Philodemus’ works did not have, and were not meant to have, wide diffusion. The fact that the works of Philodemus, exception made for those on the history of philosophy, are not mentioned in later authors still seems to need explaining if Philodemus’ prose works had wide diffusion.

Gigante (1983: 179) disagrees with Vogliano’s view, taken up by Sedley (1989: 103-104) and Dorandi (1997: 46-47), that Philodemus did not contribute any thoughts, but just composed hypomnemata of
Philodemus explicitly says in some of his works that he is following Zeno.\textsuperscript{108} If Philodemus' work was a report of Zeno's lectures the question arises of whether Cicero and Zeno could both independently derive from a common source. Yet there is also evidence that Philodemus did independent research and updating in some of his works.\textsuperscript{109}

Whether Cicero was copying Philodemus, or Zeno, it seems clear that there was in circulation in Italy at Lucretius' time an Epicurean text listing and refuting earlier views on the gods. I would assume that a similar text, or similar texts, existed listing and refuting earlier views on matter, a text which is reflected in Lucretius and in the doxographical list of Diogenes of Oenoanda (below pages 61 and 63).

Determining whether Lucretius used (a) a relatively neutral 'doxographical' text as source of his information, or followed (b) a text which had derived its information from 'doxography', but was one-sided in criticising all earlier δόξαι apart from atomism will take up the remainder of this chapter.

\textsuperscript{108} For pupils to write up their teacher's lectures was not uncommon in the ancient world, and they were sometimes transmitted under the name of the pupil as author with that of the teacher appearing only as part of the title.

\textsuperscript{109} It seems clear Philodemus updated the \textit{Index Academicorum} which refers to the death of Antiochus (69 B.C.) and his successor Aristus. Puglia's (1998: 142) suggestion that Philodemus only went to Athens in 86, after having spent time in Alexandria, is interesting in this context. If this is correct it seems likely that Philodemus would have conflated in his works material from his previous studying in Alexandria and what he learned from Zeno in Athens.
1.2 Lucretius used an Epicurean polemical source text

I accept Rösler's inference (1973: 62) that Lucretius' direct source was not a neutral one or one coming from a philosophical school other than the Epicurean school.\footnote{Lukrez hat also in Buch I eine doxographische Zusammenstellung benutzt . . . Daß Lukrez direkt von Theophrast abhängt, kommt nicht in Betracht . . . Denn es scheidet wohl aus, daß der Dichter selbst eine neutrale oder einer anderen philosophischen Richtung verpflichtete Zusammenstellung in dieser Weise für epikureische Bedürfnisse umgearbeitet hat". Mansfeld, on the other hand, implies that Lucretius used 'doxography' directly: " . . . Lucretius avails himself of the doxographical material to discuss problems in philosophy better. His reproductions of the points of view to be found in doxographies are brief; his arguments are long poetical excursions, and his further expositions of the Epicurean views are quite extensive" (1990: 3154). The fact that some of his information is doxography-derived does not mean Lucretius used doxography first hand. The elaboration of the doxographical material, and perhaps even the inclusion of the "extensive expositions of Epicurean views" may not be down to Lucretius, but to the author of the text Lucretius used as source.}

It strikes me as unlikely that Lucretius depended \textit{directly} on a doxographical text on element-theories composed in a philosophical school other than his own. His procedure throughout \textit{DRN} was, as far as one can tell, to use Epicurean texts for his philosophical material (above page 30). I take it that Lucretius derived the philosophical arguments of the \textit{critique} from an Epicurean source-text.

Three considerations suggest that Lucretius was following an Epicurean source:

(1.2.1) Lucretius' use of \textit{homoeomeria}, (1.2.2) Lucretius' choice of Heraclitus as
representative for the category of Ionian monism, \textsuperscript{111} (1.2.3) Lucretius’ inclusion, in his
confutation of Empedocles, of arguments which are not aimed at the views of
Empedocles but try to dispel every comparable theory without naming the proponents
of such theories, \textsuperscript{112} and (1.2.4) the Epicurean angle apparent in Lucretius’ philosophical
discussion: only that information is reported about earlier δόξα which an atomist can
attack, only those points are raised which involve a conflict with the atomistic theory.

1.2.1 \textit{Homoeomeria}

Lucretius uses \textit{homoeomeria} to refer to Anaxagoras’ theory. Supposing that Lucretius
followed some Greek authority for using the noun in this way seems more plausible than
thinking that such a use of a Greek word was Lucretius’ innovation. Epicurus himself
used the adjective and the noun from the root ὄμοιομερ-, and we shall come back to
the relation between Epicurus’ use of ὀμοιομέρεια in chapter 2, and to the relation of
Lucretius’ use to Epicurus’ in chapter 3. What concerns us here is whether Lucretius’

\textsuperscript{111} The arguments against Anaxagoras could not as easily be extended to a category of unlimited
pluralists. The only other unlimited pluralist among ancient Greek philosophers, excluding the atomists
(Aristotle, \textit{Physics} 1.2 184b20; Theophrastus FHS&G 229), was Anaxagoras’ pupil Archelaus (FHS&G
228A). Moreover McDiarmid (1953: 115) suggests that the similarity between Archelaus and Anaxagoras
regards \textit{Noûς} rather than the material principles.

\textsuperscript{112} Taking a single example as representative for a category of many, is well represented within the
tradition of the Epicurean school (below page 86).
use of homoeomeria is paralleled in the doxographical tradition.

Aristotle never uses the noun ὁμοιομερεῖα, 113 although he probably coined the adjective ὁμοιομερής and used it in contexts dealing with Anaxagoras’ theory of matter. Schrijvers (1999: 50) argues that Aristotle transferred “l’emploi technique, c’est-à-dire biologique du terme à son explication de la doctrine d’Anaxagore”. This is true, although Aristotle did not use the term in the contexts that dealt with Anaxagoras any differently from elsewhere in his works. Aristotle used the term in his own sense to identify Anaxagoras’ principles: 114 ὁμοιομερή was a convenient label for the idea of ‘stuffs’, i.e. things which are as a matter of fact, on the level observable to humans anyway, made up of parts like themselves. Aristotle makes the point that Anaxagoras

113 It is generally agreed that Anaxagoras himself did not use ὁμοιομερ- forms, in spite of three texts which apparently claim that he used the noun ὁμοιομέρεια: Aetius I. 3. 5, Lucretius DRN I 834 and Simplicius In phys. (C.A.G.: 1123, line 23, where ὁμοιομερεῖα is applied to τὰ εἴδη). Cherniss (1964: 2-3) points out that although Aristotle constantly calls Anaxagoras’ seeds ὁμοιομερῆ, his language shows that he did not imply Anaxagoras used the word (De caelo Γ. 3. 302a28, 302b5). I follow the general scholarly consensus (e.g. Mathewson 1958: 77-81, Rösler 1973: 58-59, and, more tentatively, Guthrie 1965: 325-326) on this, although it is not proved that Anaxagoras did not use either of the words. Guthrie (1965: 326) is not able to rule out Bailey’s theory (1947: 745) that Anaxagoras used both the noun and the adjective, in different meanings.

114 Aristotle gives a definition and catalogue of his own ‘homoemorous stuffs’ at Meteorologica Δ. 10. 388a13-388a20. The catalogue of ὁμοιομερῆ here is made up of metallic substances and animal and vegetable tissues only (Schofield 1975: 153-154, note 39). This is presumably because elements themselves are even more fundamental. In Historia Animalium A. 1. 486a5-486a9 Aristotle separates homoemorous from anhomoemorous substances in animals.
regards as basic *all*, or almost all, ‘stuffs’. In *Metaphysics* A. 3. 984a11-984a16 τὰ ὀμοιομερή is used to refer to Anaxagoras’ elements, with the implication that for Anaxagoras homoemorous stuffs only\(^{115}\) could be everlasting. In *Physics* A. 4. 187a22-187a26 Aristotle uses τὰ ὀμοιομερή to refer to the substances which Anaxagoras considered fundamental. And in *De caelo* Γ. 3.302a28-302b2 (quoted above page 46) Aristotle, while again setting Anaxagoras’ theory against Empedocles’, writes that Anaxagoras says that τὰ ὀμοιομερή are στοιχεῖα.

Aristotle’s use of τὰ ὀμοιομερή in reference to Anaxagoras’ στοιχεῖα meant that the step to the adjective becoming a noun was only small. The association of ὀμοιομερή and στοιχεῖα probably encouraged the later doxographical tradition to use the plural ὀμοιομέρειαι, in connection with Anaxagoras’ theory,\(^{116}\) to refer to Anaxagoras’ σπέρματα. Two different senses are attested: (a) to describe portions which have portions of everything in them (and are therefore similar to everything) and (b) portions which are like the thing they make (i.e. bone for Anaxagoras is made up of bone, rather than say atoms, or earth, fire and water). Meaning (b) is better attested.

Meaning (a) is exemplified by Aetius I. 3. 5: . . . ἀπὸ τοῦ οὖν ὀμοία τὰ μέρη

\(^{115}\) Anaxagoras almost certainly considered the opposites eternal and indestructible as well, but since he may not have distinguished between hot as a quality and hot as a stuff, the distinction between opposites and stuffs may be anachronistic.

\(^{116}\) Whether this idea was actually part of Anaxagoras’ theory or not. Schofield (1980: 123-132) argues that Anaxagoras’ σπέρματα actually meant physical ‘seeds’ and was not technical jargon to refer to particles of substances. But from Aristotle onwards the σπέρματα were taken to be particles.
Aētius is explaining that are portions (μέρη) of flesh etc. (δόμοι) in bread and water. This is to my knowledge the only text (with the exception of Simplicius, below note 124) that links the term ὀμοιομέρεια with ‘in everything a portion of everything’. The implication of the context here is that the particles have a portion of everything in them, while in Lucretius, and other

117 KRS (378, note 1) point out that Aētius in this passage seems uncertain of the meaning of the word. There seems indeed to be confusion regarding the term in the doxographical tradition. Aētius V. 26. 4, lines 14-18, is a puzzling piece of evidence: ['Εµπεδοκλῆς] τὰς δὲ διαφορὰς τῶν χυμῶν + παραλλαγάς τῆς πολυμερείας καὶ τῶν φυτῶν γίνεσθαι διαφοράς ἐχόντων τὰς ἀπὸ τοῦ τρέφοντος ὀμοιομερείας ὀσπερ ἐπὶ τῶν ἀμπέλων. Diels suggests correcting the text to τῶν χυμῶν παραλλαγάς γίνεσθαι τῆς πολυμερείας καὶ τῶν φυτῶν διαφόρως ἐλκόντων τὰς ἀπὸ τοῦ τρέφοντος ὀμοιομερείας. Here ὀμοιομέρειαι seem to mean the particles in the nourishment which are “like” the plants, i.e. are absorbed by and nourish them. If it refers to Empedocles it must mean something like “contain a similar blend of the four elements”, but it does sound more like Anaxagoras’ theory. Aētius also uses the noun in I. 13. 1 Περὶ ἐλαχίστων: 'Εµπεδοκλῆς ἐφη πρὸ τῶν τεταράων στοιχείων θραύσιμα ἐλαχίστα, οἰονείς στοιχεία πρὸ τῶν στοιχείων, ὀμοιομερή. This is perhaps a confused reference to Empedocles’ view that in the Sphere the elements are so perfectly mixed that they cannot be distinguished. Diels (D.G.: 223) considers the information about Empedocles false, and suggests this may be due to a misunderstanding of Theophrastus De sensibus § 11 (D.G.: 502). It looks as though Aētius was confused in his use of ὀμοιομέρεια, possibly because his work incorporates the thoughts of thinkers, or reporters, who used the term in different ways.

118 Guthrie 1965: 326. He points out how use is “an accurate description of the material ἄρχαι of Anaxagoras”.

58
doxographical authors use the term in its meaning (b) particles make up a substance which is like themselves. Meaning (b) is exemplified by Epiphanius (D.G.: 589) and pseudo-Galen (D.G.: 611), who call όμοιομερεία Anaxagoras’ ἄρχαι. Alexander of Aphrodisias De anima libri mantissa 125. 28-30 also seems to use the word to refer to Anaxagoras’ portions, which produce things like themselves: τοῖς γὰρ οὕτως λέγουσιν συμβῆσαι κατὰ τὰς όμοιομερείας τὰς Ἄναξαγόρου τὴν γένεσιν κατὰ σύγκρισιν καὶ ἐκκρίσιν τῶν στοιχείων λέγειν οὐ κατὰ μεταβολὴν. Both (a) and (b) involve using an abstract term in a concrete sense; Lucretius’ use is closer to the idea in (b) but differs from (b) because it does not apply the term to Anaxagoras’ ‘seeds’ but to Anaxagoras’ theory itself.

Given that the doxographical tradition depends heavily on Theophrastus, it is conceivable that the use of όμοιομερεία to refer to Anaxagoras’ seeds, in either sense (a) or (b) was due to Theophrastus. Whether Theophrastus used όμοιομερεία to describe Anaxagoras’ portions hinges on how far Simplicius reproduced,119 in FHS&G

119 There is little to suggest that Theophrastus used the singular to refer to Anaxagoras’ theory, since there is no evidence for use in the singular in later texts, except Lucretius, Simplicius (below note 124) and Philo Judaeus in Περὶ προνοίας 1. 22 (D.G.: 279); Hadas-Lebel 1973:146. This is the part of Philo’s treatise which only survives through the Armenian tradition . . . Anaxagoras Clazomenius homoiomeriam (portes similes) . . .

120 There seems to be a problem with the fact that the first paragraph of 228A associates Anaxagoras with Anaximenes whereas in the second paragraph of 228A, and in 228B, Simplicius explicitly cites Theophrastus for the association of Anaxagoras and Anaximander (Aristotle himself was not clear whether Anaximander was a monist or a pluralist (KRS: 111)). This raises questions as to whether the first paragraph
228A, the Theophrastean text he had at hand. FHS&G 228A has ὀμοιομέρη in the Aristotelian sense of stuffs of which the part is like the whole: water, fire (as in Aristotle's *Metaphysics* above) and the metal gold are given as examples. Simplicius concludes by saying that Anaxagoras, and his pupil Archelaos of Athens, posit ὀμοιομερείας as ἀρχάς.

Schofield (1975: 4-7) suggests, developing a proposal by Lanza, that Aëtius I.3.5 derives not directly from Theophrastus, but from an Epicurean source, on the grounds that (1) Epicurus is the first author to use the noun ὀμοιομέρεια (although he uses it in a sense different from that in Aëtius),121 (2) ὀμοιομέρεια is found in Lucretius and ὀμοιομέρεια in Diogenes of Oenoanda,122 (3) λόγων θεωρητά has an Epicurean ring,123 and (4) the attempt in Aëtius to assimilate Empedocles' and Anaxagoras' theories of elements to Democritus' and Epicurus' theories is probably by an Epicurean. There are not enough grounds to be certain that the ὀμοιομέρ-reading of Anaxagoras originated with Theophrastus.

Lucretius uses *homoeomeria rerum*, in the singular, in an abstract sense to refer

of 228A, where the connection with Anaximenes occurs, is from Theophrastus.

121 Schofield (1975: 5, note 17) points out that Epicurus uses the term to mean more or less "the attribute of being homoeomerous with" and it is applied (it would seem) to parts, referring to *Ad Herodotum* 52. On Epicurus' use of the noun and the adjective, below pages 130-147 and 177-179.

122 Below.

123 Schofield (1975: 7) argues that Aëtius' paragraph on Anaxagoras is made up of Theophrastean material contaminated with material of Epicurean origin.
to Anaxagoras’ theory — as mistakenly attributed to him — that everything is made up
of particles like itself.\textsuperscript{124} Lucretius’ usage is closer to meaning (b) than to meaning (a),
but is not parallel to either of the attested meanings. It is striking that Lucretius appears
at odds with the doxographical tradition even where it might be influenced by
Epicureanism.

The use of the term in the Epicurean Diogenes of Oenoanda is closest to
Lucretius’ usage: ‘Αναξαγόρας δ’ ὁ Κλαξομένιος [εἶναι στοιχεῖον εἶπεν] τὰς
όμοιομερείας ἐκάστου πράγματος. Lanza (1966: 71) suggests that Diogenes
misunderstood a formulation of the kind Όμοιομέρεια ἐκάστου πράγματος, and
incorrectly used the plural, as perhaps familiar to him through the doxographical
tradition, to refer to particles, so that the original meaning is lost. If Lanza is right, the
conjectured formulation Όμοιομέρεια ἐκάστου πράγματος would certainly be
comparable to Lucretius’ rerum . . . homoeomeria.

Lucretius’ use of homoeomeria to refer to Anaxagoras’ theory does not suggest
that he was drawing directly from the doxographical tradition, but that he is detached

\textsuperscript{124} Guthrie (1965: 326) criticises Bailey (1926: 555) for thinking that Lucretius’ usage in the singular
is “quite unique”, pointing to Simplicius In Phys. (C.A.G.: 162, line 31) ἐνεστὶν ἄρα ἐν τῇ Όμοιομερείᾳ
καὶ σφέξ καὶ ὄστον καὶ αἴμα κτλ. The word in the singular is found in a similar meaning in In Phys.,
C.A.G.: 172, line 24. But these do not look like parallels for Lucretius’ use in anything other than that the word
is used in the singular. Simplicius seems to understand the word in a sense closer to meaning (a) than to
meaning (b), just as he does when using the plural in In Phys. C.A.G.: 27 line 27. In In De caelo (C.A.G.: 532,
line 24, and 535, line 15) Simplicius uses the singular in a meaning similar to ἴσορροπία.
from such a tradition at one remove at least (unless one wishes to assume that Lucretius decided to alter the meaning he found in his source). It seems likely that the singular ὁμοιομέρεια, perhaps in the formulation ὁμοιομέρεια ἐκάστου πράγματος, was at some stage before Lucretius used in an abstract sense to conveniently refer to Anaxagoras' theory. Lucretius' formulation may be a development of meaning (b) which led to use of the noun to refer to Anaxagoras' theory itself. One cannot rule out that Lucretius' usage derives from a root different from Peripatetic doxography.

1.2.2 The choice of Heraclitus as representative monist

Lucretius presents Heraclitus as the leader of all the Ionian monists: by attacking Heraclitus he attacks the entire category.125 Lines 635 and 638 make clear that the refutation extends to other fire monists, and lines 707-711 that it extends to other forms of monism too.126 This may be reflected in the fact that all the arguments in the refutation of Heraclitus, except perhaps the argument in lines 690-700, could apply mutatis

125 The decision of naming just one exemplary representative could be down to Lucretius, who would be working from a text which listed earlier δόξα more comprehensively. But one would perhaps expect Lucretius to draw the distinction between the different theories considered more clearly, or at least make clear when the theories did not apply to the named three, if he was himself selecting the theories from more comprehensive list of δόξα.

126 Note how neatly the final argument against Heraclitus introduces the possibility, and inconsistency, of other forms of monism.
mutandis to other forms of physical monism.

The choice of Heraclitus as the exemplary Ionian monist is surprising. It cannot, as far as I can see, be down to the doxographical tradition, although such a tradition determined the inclusion of Heraclitus among the Ionian monists in the first place. Hippasus and Heraclitus are considered after Thales in Theophrastus FHS&G 225, by virtue of the fact that their principle is single and limited. In Aëtius, however, Heraclitus comes last of all the monists (above page 42).

The only surviving text which is, to some extent, comparable to Lucretius in this respect is the inscription by — once again — Diogenes of Oenoanda.¹²⁷ Diogenes criticised Heraclitus first among the monists, although he did, as far as we can tell, go on to refute in detail other monists too.¹²⁸ The most economical explanation of the parallel

¹²⁷ Mansfeld (1990:3156-3157) notes that Diogenes does not mention earth-monism and that he adds the Stoics and Democritus, who comes last because his view is most similar to Epicurus'. A further remarkable coincidence between Lucretius and Diogenes is that they both omit Plato (below pages 78-79). A further noticeable difference, as we have seen above (note 97) is that Diogenes has a 'preliminary' listing of all the targets and their views, and then a (now lost) confutation of (presumably) each opponent. Diogenes certainly shares in the doxographical tradition, whether directly or through an Epicurean intermediary. Mansfeld highlights (a) the implicit sequence of the Presocratics, cogently arguing that the Stoic dualists have been appended last to maintain some sort of chronological order, (b) the appearance of the name of the city of origin of the Presocratics which also links Diogenes with the doxographic tradition (and Theophrastus), and (c) the theory which Diogenes attributes to the Stoics, which is the one which attributed to Zeno in Aëtius I. 3. 25.

¹²⁸ Unfortunately Diogenes' counter-arguments do not survive, except small fragments of the arguments against Heraclitus and the Stoics.
between Diogenes and Lucretius is to suppose that there was a text about views on the elements produced within the Epicurean school, a text which made Heraclitus the primary representative of monism. This seems preferable to supposing that both Lucretius and Diogenes of Oenoanda each independently formed the idea of making Heraclitus, in the one case the only representative of monism, in the other the primary representative, or that Lucretius influenced Diogenes.  

It seems likely that either Lucretius or Diogenes is (or both are) separated from their common Epicurean source by at least one intermediary source. To suppose that Diogenes and Lucretius both directly used the same source text would involve a considerable amount of editing and reworking on Lucretius’ part. It may be that the 

129 Capasso (1987: 100) notes how both Lucretius and Diogenes of Oenoanda open with Heraclitus and underline the fact that he was the first to enter the battle against the Epicureans. According to Capasso the choice of Heraclitus as first anti-Epicurean goes back to the Epicurean school, and perhaps to Epicurus himself. On whether the choice of Heraclitus is a clue that Lucretius’ source was a later than Epicurus, below pages 264-266.  

130 Bailey (1947: 711) finds two reasons behind Lucretius’ choice of Heraclitus as representative: (1) Heraclitus “was the last of the Ionian Monists and his theory was in many respects the culmination of their views”; (2) “…the theory of Heraclitus had been adopted by the Stoics, the natural enemies of the Epicureans, as the foundation of their physical theory”. That Heraclitus’ στοιχεῖον-theory was the “culmination” of the views of the Ionian monists is far from certain, although the Peripatetic tradition presented it as such (above pages 36-37). Bailey seems to assume that the decision to single out Heraclitus was Lucretius’ own; but Lucretius may well have been following his source.  

131 It seems less likely that Lucretius followed the same source as Diogenes, and worked out a list of arguments against quadruplism which would include criticism of the ‘transformationists’ (below pages 72-77).
person who elaborated the arguments singled out Heraclitus because the Stoics considered him their forerunner,\textsuperscript{132} whether or not the author of the arguments explicitly referred to the Stoics.\textsuperscript{133}

I am not convinced, however, that the arguments we find in \textit{Lucretius'} confutation of Heraclitus and fire monism are aimed at the Stoic theories. The case for of an attack against the philosophical ideas of the Stoics here is built by Munro,\textsuperscript{134} Giussani, Ernout-Robin, Bailey, Kleve and Pizzani. In the other camp Furley and Sedley, following occasional remarks by Bignone, argue that the Stoics are not referred to here or in \textit{DRN} generally (for the most contentious case, \textit{Lucretius'} refutation of geocentric cosmology, see above pages 27-30). The arguments \textit{in the critique} can, and should, be read as confutation of Heraclitus, as he was presented by the doxographical tradition, and of fire monism generally. Less certain is whether the Stoics should be seen as part of the fire monists who follow Heraclitus.

\textsuperscript{132} See \textit{S.V.F.} I. 11, I. 98 (quoted below page 66) and I. 141. For Chrysippus following Heraclitus (or at least agreeing with Heraclitus) see e.g. \textit{S.V.F.} II. 446, II 576 and II 764.

\textsuperscript{133} See above (page 49 and note 95) on how the Epicureans at times criticised the authorities contemporary thinkers relied on rather than their contemporary opponents.

\textsuperscript{134} Munro (1886b: 83) thought that with the plurals from line 645 to 689 \textit{Lucretius} refers to the Stoics. He points to lines 465 ff. as a parallel.
1.2.2.1 The Stoics as fire monists?

In post-Chrysippus doxography fire was not the Stoics’ *materies rerum*: god and matter were the Stoics’ two ἀρχαί (principles), and the four Empedoclean elements were their στοιχεῖα (physical elements). Fire however had special importance for the early Stoics, who distinguished between πῦρ τεχνικὸν, fire as the eternal active principle, and πῦρ ἀτεχνικὸν, one of the four elements generated by the creative fire in its association with the eternal passive principle, ὄλη. The importance of πῦρ τεχνικὸν is well exemplified by *S.V.F.* II. 1027 (Aëtius I. 7. 33).

It seems unlikely that Lucretius, or his source, confused “having as its matter” (στοιχεῖον) with “having its origin in” (ἀρχή), and had in mind the Stoics’ πῦρ τεχνικὸν (active principle). All the arguments in the *critique* focus on the material element, none on the formal cause. Moreover a reference to the Stoics’ πῦρ τεχνικὸν would naturally bring with a reference to the phenomenon of conflagration, which is strikingly absent from the *critique*, and *DRN* as a whole (Furley 1966: 16).

But reports about Zeno and Cleanthes seem to suggest that they called fire

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135 This is a familiar problem in (mis-)interpretation of the Presocratics, going back at least to Aristotle (see Stokes 1971). The idea is that from which things come originally is to be equated with their persistent matter.

136 The Stoics attributed a theory of conflagration to Heraclitus (*S.V.F.* II. 421 and *S.V.F.* II. 603). Again, this seems mistaken; see KRS: 200, note 1.
στοιχείων, rather than adopting, like Chrysippus, four στοιχεία. Aristocles of Messene (S.V.F. I. 98) reports that Zeno στοιχείων εἶναι φασὶ τῶν ὄντων τὸ πῦρ, καθάπερ Ἡράκλειτος, τούτου δ’ ἀρχὰς ὄλην καὶ θεόν, ὡς Πλάτων . . . This might indicate that from the time of Zeno and Cleanthes down to the time of Chrysippus, there was a tendency to identify the στοιχείων in fire rather than in the four Empedoclean elements.137 And in S.V.F. II. 413 (Stobaeus) it is said that Chrysippus used στοιχείων in three senses, in one sense it is fire, in another the four elements. The third sense is apparently lost in a lacuna.

In spite of these testimonies I am not convinced that the person who elaborated arguments thought he was attacking the Stoics by attacking fire-monism. Diogenes of Oenoanda is good evidence that matter and god were the Stoics’ elements according to ‘Epicurean doxography’,138 as they were in doxography generally. The Stoic emphasis on two principles speaks against thinking that the qui and the quorum refer specifically to the Stoics.

It is very hard to disprove altogether that the Stoics may be included in the

137 Stobaeus in S.V.F. II. 413 speaks of four στοιχεία, but then of πῦρ καὶ ἔξοχὴν στοιχεῖον, Simplicius in S.V.F. II. 603 reports that the Stoics follow Heraclitus in thinking that all things derive ἐκ πυρὸς πεπερασμένου and are dissolved back into fire.

138 Fragment 6. II, lines 7-9 (Smith 1992b: 156). Smith (2000: 135 and 2003: 118) also reconstructs convincingly fragment 100 (from the part of the inscription reporting maxims), which also seems to deal with the Stoics’ theory of matter: οὔτ’ ἐστι τὰ στοιχεῖα· | ἀ τῶν πηλάντων θεός καὶ δίλη | ν (καὶ κώς γάρ | οἱ Στοικοὶ τάδ’ ἦγοῦντι· . . .
reference. Even if they are there can be little doubt that the reference in the *qui* and the *quorum* is wider; it extends to all who believed in fire as primary element. That Lucretius’ source may be attacking the Stoics by attacking their precursor is entirely possible, but there is no compelling reason to hold that whoever elaborated the arguments idiosyncratically interpreted the Stoics as fire-monists. That *Lucretius* thought that the arguments actually dispelled Stoic theories is certainly conceivable (see further below page 70).

1.2.2.2 The Stoic denial of void in the world?

I doubt that the argument in lines 655-664 is aimed at the Stoic theory of void. The expressions *admixtum rebus inane* in line 655, *in rebus relinquere inane purum* in line 658 and *exempto rebus inani* in 660 have been taken to refer to the fact that the Stoics allowed for void *extra res*, for which see e.g. *S.V.F*. I. 95 and I. 96. The fact that Diogenes of Oenoanda, in his ‘doxographical’ review, attacked the Stoics for their ideas on void may appear to support this suggestion. Smith (1992b: 444) points out how the precise argument of the first column of fragment 7, which deals with the Stoics, is uncertain, but it is clear that void is mentioned. Lines 3-14 of column I read (Smith 1992b: 157):

\[\text{ενα προσ} \]
\[\zeta \tau\sigma\tau\epsilon \tau\omicron \]

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It seems very likely that the target here are the Stoics. But even assuming that Diogenes was criticising the Stoics on void, one cannot be sure that by repeating res in lines 655, 658 and 560 Lucretius was implying that “they actually recognise void, but in the wrong place for the argument”. Lucretius, or perhaps rather Lucretius’ source, is concerned here with the fact that the denial of void would hamper the theory of condensation and rarefaction, and it seems quite natural that he

139 Fragment 7 of Diogenes’ inscription has not been rediscovered, but there are French and Austrian squeezes of it. The argument in column I cannot be directed against Democritus, as is shown by καὶ Δημόκριτος in II.4. Smith convincingly argues that the criticism of Democritus begins in II.2 and that opponents in column I are the Stoics, who come immediately ahead of Democritus in Diogenes’ initial list.
should emphasise the absence of void “from things”.

Pizzani (1983: 465-466), in his attempt at showing that the target are the Stoics, notes that Lucretius in lines 661 and 662 echoes the theory of world as *continuum*. But, although Lucretius occasionally presents an opponent’s theory as his own objection, would it not be strange to say *nec cernunt* (line 659) of what was in fact a fundamental and distinctive Stoic theory? One gets the impression the argument was elaborated before the Stoics. We have seen above (page 43) how Heraclitus, like other Presocratic monists did not assert or require void, and how doxography reported that they denied the existence of void. When one considers that the existence of void is one of the main claims that sets atomism apart from other theories, it is not at all surprising that the Epicureans should attack *Heraclitus* on this point.

None of the arguments in the critique of Heraclitus are aimed specifically at Stoic theories. Whether *Lucretius* thought the Stoics were included when writing *qui* in line 635 and *quorum* in line 638 cannot be determined. He could perhaps have had in mind Hippasus of Metapontum, a name often associated with Heraclitus in the doxographical tradition, and to the followers of Heraclitus mentioned by Plato in *Theaetetus* 179D and in Diogenes Laertius IX. 6 (Rösler 1973: 53, note 5), or indeed generally to anyone who believed in fire monism. I will argue in chapter 4, however, that the Stoics should be identified with the *inanes Graii* of line 640 and *stolidi* of 641. It is perhaps not inconceivable that the *qui* and *quorum* are a different group of people from the *inanes Graii* and *stolidi*, but it is more natural to think that the latter group is included in the former. If the *stolidi* are among the fire monists of lines 635 and 638, Lucretius thought
it fit to include the Stoics as fire monists, but yet reflected closely the arguments of a source unconcerned with Stoic theories.

1.2.3 Lucretius' arguments against the limited pluralists

Just as he takes Heraclitus as the representative of monism, so Lucretius takes Empedocles as the representative of finite pluralism, and explicitly says so in lines 714-716 and 734. Not all the arguments in the section are aimed at Empedocles: the argument in lines 782-802, as we shall see, is specifically not against Empedocles. Scholars have thought that other arguments are not aimed at Empedocles, or show misunderstanding of Empedocles' theories, but this seems unwarranted by the evidence.

1.2.3.1 Lines 753-781

The third argument against Empedocles, in lines 753-758, according to Bailey (1947: 729),\(^{140}\) shows misunderstanding of Empedocles, who thought that the elements were imperishable, exactly as the atomists did.\(^ {141}\) But Lucretius', or rather Lucretius' source's, point is rather that the four elements cannot be imperishable, because the senses tell us

\(^{140}\) Bailey is followed by Lenaghan (1967: 232, note 37).

\(^{141}\) Bailey also points out that Empedocles would probably have denied that subdivision without a minimum meant the reduction of things to nothing. Indeed it seems a typically Epicurean approach to equate atoms with the only alternative to infinite divisibility.
that they are *mortali cum corpore funditus*.

I also doubt that lines 763-781 show Lucretius, or his source, misunderstanding Empedocles' theory. Commentators find an inconsistency in the fact that 763-768 attack a theory which involves an alteration in the nature of the four elements, because Empedocles did not hold such a theory. This is easily explained when one takes into account the fact that the argument is aimed at quadruple pluralism generally, rather than Empedocles specifically. Lines 763-781 are a dilemma, which is meant to rule out every form of quadruple pluralism.\(^{142}\) Either the elements change their nature (lines 763-769), in which case they cannot be elements,\(^{143}\) or they do not (lines 770-781), as Empedocles actually thought, in which case the elements would reveal their unchangeable nature in compounds.

The way of proceeding in lines 763 is directly comparable to that in the *critique* of Heraclitus, where both condensation-rarefaction and other means of transformation are considered. The *sin ita forte putas* of 770 has a similar function to *quod si forte* of 665: no form of either monism or limited pluralism can be satisfactory. Whoever elaborated the arguments found in Lucretius' *critique* constructed hypotheses so as to leave his opponents no escape-route, by considering every variant form of the theory.

\(^{142}\) The dilemma arises naturally from the argument in lines 759-762 where the point is that the four elements do not mix.

\(^{143}\) It cannot be settled with certainty whether lines 763-769 envisage spontaneous change of the elements, or change as a result of *concilium*. Change resulting from combination is perhaps more likely in view of line 773.
The line of argument represents a philosopher’s actual theory as his attempt to escape from a difficulty.\textsuperscript{144}

1.2.3.2 Lines 782-802

Under scrutiny in lines 782-802 is a theory according to which fire cyclically turns into air,\textsuperscript{145} air into water, and water into earth, and then back again in exactly the reverse order, never ceasing to do so. This is often referred to as a ‘transformationist’ theory, which seems distinct from that of Empedocles, according to which the elements never changed their nature.\textsuperscript{146} Lines 782-802 are puzzling.\textsuperscript{147}

\textsuperscript{144} Similarly in the refutation of Anaxagoras, his own theory of \textit{éν παντὶ παντὸς μοῖρα} is presented as an unsuccessful attempt to sidestep a difficulty in line 875, only after having appeared in a previous dilemma (below pages 82-83). We shall see in chapter 4 (pages 341-342) how Lucretius’ presentation emphasises this aspect especially in the case of Anaxagoras.

\textsuperscript{145} Hippolytos, who to some extent shares in the doxographical tradition, reports in DK B31 (= D.G. 558) that Empedocles \textit{τῆν τοῦ παντὸς ἀρχὴν νεῖκος καὶ φιλιαν ἔφη καὶ τὸ τῆς μονάδος νοερὸν πῦρ τὸν θεόν καὶ συνεστάναι ἐκ πυρὸς τὰ πάντα καὶ εἰς πῦρ ἀναλυθησεθαί. In spite of this testimony I doubt that the person who elaborated the arguments thought that he was refuting Empedocles with the argument reflected in lines 782-802.

\textsuperscript{146} Giussani (1896: 87) remarks that lines 782-802 are aimed at “i trasformisti più radicali e più logici; quelli che estendevano il trasformismo anche nel campo dei quattro elementi tra loro”.

\textsuperscript{147} I adopt, as editors invariably do, Marullus’ reconstruction of the text. This involves the scribe, or scribes, misreading \textit{imber} as \textit{ignis} twice (with one possibly being corrected to match the other) and altering \textit{in terram} to \textit{a terra} in the space of two lines.
The first point to note is that the argument in 782-802 has a cosmogonical ring. Although Empedocles spoke of a cycle of the elements which started from fire,\(^{148}\) it seems unlikely that a distorted version of his theory is being reported in lines 782-802. The terms \textit{se vertere} and \textit{mutare} involve a change of nature, assuming that Lucretius was not being careless with his terminology here. It seems reasonable to gather that Lucretius, or rather his source, was criticising a theory different from Empedocles', although it may have been derived from it.

Lucretius is not explicit about the fact that the argument in lines 782-802 is not aimed at Empedocles. The \textit{repetunt} in line 782, and \textit{faciunt} in 783, are not a clear indication, seeing how loosely Lucretius seems to have used plurals both in this section (lines 742, 747 and 755) and in the confutation of Heraclitus (lines 656 and 665). Moreover the expression \textit{quin etiam} suggests something like "but they". This is somewhat surprising since the argument in 782-802 is aimed at the thinkers which are included in the first horn of the dilemma of 763-781, that is those in lines 763-769, rather

\(^{148}\) Empedocles certainly envisaged a progressive separation of the four elements in his cosmogony, starting from the sun, and therefore presumably fire. In DK B38, which looks like the introduction of Empedocles' cosmogony of the present world, \(\gamma\lambda\iota\nu\omicron\zeta\), and other heavenly bodies, are said to come first, then \(\gamma\alpha\iota\alpha\) is mentioned, then \(\pi\omicron\tau\omicron\omicron\omicron\), then \(\acute{\alpha}\tau\iota\omicron\lambda\rho\), and finally \(\alpha\iota\theta\iota\omicron\rho\), \(\pi\omicron\nu\rho\), \(\gamma\eta\), \(\delta\omicron\omega\rho\), \(\acute{\alpha}\tau\iota\), and \(\sigma\omicron\rho\alpha\nu\omicron\delta\omicron\) from \(\alpha\iota\theta\iota\omicron\rho\), \(\gamma\lambda\iota\omicron\zeta\) from \(\pi\omicron\nu\rho\). Earth certainly does not seem to come last in Empedocles' cosmogony. The Strasbourg papyrus provides fresh evidence for Empedocles' cosmogonical theory. Trépanier (2004: 255) re-edits the text of \textit{ensemble} a of the Strasbourg papyrus of Empedocles (Martin-Primavesi 1998: 130-140). But we have no evidence for the sequence in Empedocles being the same as in Lucretius.

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than those in lines 770-781.

The inclusion of the transformationist theory suggests that Lucretius was following a source which set out to attack the category of quadruple pluralists, and is at odds with supposing that Lucretius was following a doxographical report of Empedocles' view. It may be that Lucretius' source placed less emphasis on Empedocles himself than Lucretius does. Lucretius' praise of Empedocles and description of Sicily sets the attention firmly on Empedocles, despite Lucretius' explicit statement that the criticism extends to other quadruplists as well.

The argument in lines 782-802 could be aimed at the Stoics' elaboration of Heraclitus' μεταβολή (ἐνω καὶ κάτω ὅδος). The report about Heraclitus in Diogenes Laertius IX. 9 speaks, like Heraclitus DK B31, of three elements only (fire, water and earth), but Maximus of Tyre mentions a version with 4 elements: ...ζῆι πῦρ τὸν γῆς θάνατον, καὶ ἄηρ ζῆι τὸν πυρὸς θάνατον, ὄξωρ ζῆι τὸν ἀέρος θάνατον γῆ τὸν ὀδατος. The Stoics are connected with a similar theory in Cicero De natura deorum II. 84 (nam ex terra aqua ex aqua oritur aer ex aere aether, deinde retrorsum vicissim ex aethere aer, inde aqua, ex aqua terra infima) and III. 31, Plutarch De Stoic. rep. 41. 1053A, Diogenes Laertius VII. 142, and S.V.F. II. 579, 580 and 581 (Chrysippus). Aëtius I. 3. 11 speaks of transformation of fire into earth, into water, into air in connection with Heraclitus (quoted above page 39). The existence of such a theory, which the Stoics seem to have extracted, probably unduly, from Heraclitus complicates...
the issue. One cannot rule out that Lucretius’ source (or Lucretius himself) introduced an argument against the Stoics in its refutation of quadruple pluralism.

Furley (1966: 78) notes that Aristotle “has surely at least as good a claim as” the Stoics to be the target of lines 782-802. Giussani (1898: 88, note 1) had already suggested Aristotle as a possible target here. And the mutual interchange of the elements appears in Theophrastus’ argument for the eternity of the world (184 FHS&G, §144, line 166). According to Sedley (1998: 174) Lucretius takes over the sequence earth - water - air - fire, which described the layered structure of the world, from Theophrastus.

It may be that Lucretius’ source criticised the transformationists *en passant* while performing a confutation of Empedocles’ theory, but the relative emphasis and space the argument against the transformationists receives in *DRN* suggests that the argument against the transformationists featured prominently in Lucretius’ source, rather than being an *en passant* mention. If the criticism is aimed — as is perhaps likely — at Aristotle, this rules out that Lucretius depended on a Peripatetic source for his arguments.153

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151 “Oppure . . . Lucrezio (cioè il suo fonte epicureo) pensa ad Aristotele, che faceva minerali piante e animali composti dei quattro elementi, e insieme faceva questi trasformabili l’uno nell’altro per rarefazione e condensazione . . .”.

152 We shall see (below pages 122-126) that Epicurus mentioning *en passant* other quadruple pluralists while criticising Plato in column XXXIV of ΠΦ XIV.

153 It seems very un-economical to suppose that Lucretius drew the confutation of the three Presocratics from more than one source, and that the information for his criticism of finite pluralism (only) did not come to him through Peripatetic sources.
I doubt that Lucretius himself formulated the idea of structuring his account by referring to the three categories. Supposing that Lucretius did this is at odds with the fact that he does not mention that Anaxagoras is the representative of infinite pluralism (above page 42). It is easier to suppose that an Epicurean source took the threefold structure according to the number of principles from its (Peripatetic) source, but had perhaps removed the references to and separate consideration of individuals by name. Alternatively it was Lucretius who removed the doxographical material. The arguments in the critique are aimed to dispel the possibility of any form of finite pluralism, just as the arguments against Heraclitus dispel any form of fire-monism, and monism more generally.

1.2.4 The Epicurean angle

The counter-arguments in the critique come from a distinctly Epicurean standpoint. Lucretius often deals with the Presocratics in Epicurean terms, which makes the

\[\text{154} \text{ It may well be that the division into categories was more complex in the source of Lucretius' source (cf. the subdivisions in Aristotle's } \text{Physics} \text{ A. 2. 184b15 - A. 7. 191a22), and that Lucretius' source reduced all theories to the three categories without further separations.} \]

\[\text{155} \text{ It is also possible that Lucretius' source started the process of removing the doxographical elements, and Lucretius took it further. Tatum (1984: 178) writes "our poet's innovations in this rather standard feature of Epicurean writing [Epicurean doxography] help explain the loose connection between the Presocratics he names and the criticisms he presents".} \]
argument seem unfair.\textsuperscript{156} The Epicurean standpoint is apparent in the fact that only the material \( \sigma \tau \omega \iota \chi \varepsilon \iota \omicron \nu \) is considered. Theophrastus in FHS\&G 227A, influenced by Aristotle \textit{Metaphysics} A 3 984a8, says that love and strife should be added to the four bodily elements, so Empedocles' elements were in fact six,\textsuperscript{157} and Aëtius I. 3. 20 similarly mentions the two power-principles for Empedocles. \textit{DRN} however only mentions the four elements. Similarly in FHS\&G 228 Theophrastus considered the possibility of reading Anaxagoras as a dualist, but this is ignored in Lucretius' \textit{critique} (and in Aëtius). No mention is made in the \textit{critique} of Anaxagoras' \( \kappa \nu \omicron \omicron \omicron \omicron \), but only of his material theory.\textsuperscript{158} Concentrating exclusively on the material element is a typically Epicurean approach, since for the Epicureans no other principle existed but the material one.

Such an exclusive concern with the physical \( \sigma \tau \omega \iota \chi \varepsilon \iota \omicron \nu \) may explain the puzzling fact that Plato's theory is omitted in Lucretius' account. The omission is surprising when one considers that Epicurus attacked that theory at length in book XIV of \( \Pi \Phi \) (columns XXXIV- XXXIX Leone). It is perhaps conceivable that Lucretius omitted Plato's theory because of the difficulty in adapting the terminology to hexameters, but the fact that Diogenes of Oenoanda's list also omits Plato (above note 127) suggests perhaps that

\textsuperscript{156} Lenaghan 1967: 227.

\textsuperscript{157} See further McDiarmid (1953: 107-108) on how Aristotle and Theophratus emphasised Love and Strife in discussing Empedocles' elements and discussed whether they were material elements for him.

\textsuperscript{158} Giussani 1898: 85.
Lucretius' source left Plato out, and Lucretius followed suit.\textsuperscript{159}

There is no evidence for the distinction between Presocratics and thinkers later than Socrates in antiquity, but Aristotle (in \textit{Metaphysics} A. 4. 985b23 and A. 5. 987a29) sees the Pythagoreans, Socrates and Plato as concentrating on the formal cause whereas the Presocratics — as we call them — concentrated on the material cause, with Empedocles anticipating the formal cause. Both Aristotle and Theophrastus discuss nonetheless Plato's physical theories in specific contexts. It may be that the author of Lucretius' source (or, less probably, Lucretius himself) considered Plato's theory not to be a form of quadruple pluralism, because he followed Theophrastus in ascribing to Plato the 'god and matter' theory considered in Simplicius, which is also itself based on the \textit{Timaeus}.\textsuperscript{160}

It is striking that the statements of Epicurean doctrine in the \textit{critique} lay considerable emphasis on the movements and combination of atoms. Since Lucretius has not explained such atomic phenomena so far in the poem, the references to atomic combinations and motions in lines 677, 685, 800-801, 819-822 and 909-910 are beyond the reader, if he is new to Epicureanism.\textsuperscript{161}

\begin{footnotesize}
\begin{enumerate}
\item It is also possible that Plato was treated separately from the Presocratics in Lucretius' source-text, and this induced Lucretius to leave Plato out.

\item The fact that Epicurus criticised Plato's theory of shapes may involve that he considered Plato a quadruple pluralist, but this cannot perhaps be taken as granted. There is no specific remark to that effect in \textit{ΠΦ XIV}.

\item One should perhaps note that \textit{concilium} is mentioned in line 484 and lines 515-516.
\end{enumerate}
\end{footnotesize}
This remarkable anticipation led Giussani to postulate a lacuna ahead of line 635,\textsuperscript{162} where Lucretius would have introduced such phenomena. This is unnecessary. The anticipation can be explained in two ways: either Lucretius got carried away in elaborating his own Epicurean argument and made an anticipation, or the anticipation is due to Lucretius' source. We may note however that if the references to combinations and movements of the atoms go back to Lucretius' source,\textsuperscript{163} this is a certain clue that he was following an Epicurean text.

Let us now turn to the argument in lines 690-700, the second argument against Heraclitus,\textsuperscript{164} which Bailey (1947: 713) describes as coming from a "characteristically wonder whether Asmis' (1989: 61-62) suggestion that Lucretius uses a rhetorical strategy of "anticipation" elsewhere in his poem can explain these anticipations in the critique. Asmis seems to overlook the anticipation of the motus in the critique.

\textsuperscript{163} Below pages 236-238.

\textsuperscript{164} I would argue that the arguments against Heraclitus are only three. The first, in lines 645-689, is physical: creation of things from fire is impossible either by condensation and rarefaction — which is at any rate excluded by denial of void — or by other means. The second argument, in lines 690-700, is the epistemological. As for the third argument (lines 701-704), Munro (1886b: 88) remarks that it is usual for Lucretius "to finish by some short argument appealing simply to the common sense of men, or to what they see going on before their eyes: see 759-762; 915-920; 984 (998)-987 (1001)". Bailey (1947: 713) goes further: "the last argument . . . seems scarcely serious: 'why choose fire; anything else will do'. Perhaps he wished to call attention to the variety of ultimate substances selected by the different Monists". But the last argument, as suggested to me by Professor Sharples, is (whether or not Lucretius realised it) important: it stresses that it is arbitrary to select just one sensible substance, and we will see that it is arbitrary to select just four (Empedocles). What is distinctive about the atomists is that they select none (below note 175).
Epicurean point of view.\textsuperscript{165} Heraclitus is criticised for saying that the senses recognise fire truly, but they do not recognise all other things which are in truth fire.\textsuperscript{166} It is clear that the arguments come from a standpoint which takes the senses as the ultimate guide for judgement.

Edwards (1989: 115) thinks that the criticism is unfair, given Heraclitus’ words in DK B55 (δοσόν δης ἀκοῇ μάθησις, ταύτα ἐγώ προτιμέω), and that the caricature of Heraclitus may derive from a misreading of DK B107 (κακοὶ μάρτυρες ἀνθρώποισιν ὀφθαλμοί καὶ ὃτα βαρβάρους ψυχάς ἐξόντων). But DK B55 and DK B107 taken together suggest that Heraclitus distinguished ‘mere sensation’ from ‘intelligent interpretation’,\textsuperscript{167} which is itself derived from the senses. KRS (188, note 2) point out that observation must be checked by νοῦς or φρόνησις, and compare

\begin{itemize}
\item\textsuperscript{165} It seems significant that the idea of movement of particles is applied to Heraclitus’ own theory in lines 680 and 681.
\item\textsuperscript{166} Bailey 1947: 721.
\item\textsuperscript{167} The fact that Colotes does not include Heraclitus among his targets perhaps indicates that the Epicureans did not disagree with him on the issue of how the evidence from senses should be used. It certainly suggests that he did not discredit the senses altogether. Munro (1886b: 87-88) refers to Aristotle\textit{Metaphysics} A. 6. 987a32 . . . ταῖς Ἡρακλείτειοις δόξαις, ὡς ἀπάντων τῶν αἰσθητῶν ἀεὶ περὶ ἑκόνων καὶ ἐπιστήμης περὶ αὐτῶν ὡς ὁδός . . . to show that Heraclitus thought that the senses could not truly discern things. But this does not necessarily imply that the senses had no value for Heraclitus. Aristotle by “relying on the senses” sometimes means no more than “not doing Platonic-style metaphysics”.
\end{itemize}
There is no need to think that the argument in Lucretius derives from misunderstanding of statements regarding the senses specifically, or that it is a reaction against an “empiricist” reading of Heraclitus, as Robin suggests. The argument exploits an apparent inconsistency in Heraclitus’ theory, apparent because Heraclitus would probably not have subscribed to the statement that *sensus ignem cognoscere vere* without qualification. Heraclitus thought that anyone who did not realise that fire was also its opposite did not know what fire was (KRS: 190). If one assumes that the person who elaborated this argument knew of Heraclitus’ view on sensation, the presentation is tendentious.

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168 Democritus, Epicurus’ precursor, similarly to Heraclitus had reservations about how far evidence from the senses should be accepted (KRS: 413).

169 Emout-Robin 1924: 136. Robin suggests that the idea that Heraclitus ‘started from the senses’ is due to a Stoic (empiricist) interpretation of Heraclitus who in fact distrusted sensation, that Lucretius speaks of Heraclitus “à travers la doxographie péripatéticienne et surtout stotciennne”. Even assuming that Heraclitus is interpreted as an empiricist in Lucretius, I doubt that there are grounds to suppose this is due to the influence of a Stoic reading.

170 In line 699 Lucretius refers to the fact that judgement should be based on the senses. The principle has already been expressed *en passant* in lines 422-425. It is interesting that there is in *DRN* I a double anticipation of what is explained in book IV, see especially *DRN* IV 478-499 (although in these lines the argument is aimed at the Sceptics, rather than against someone whose reliance on the senses is selective). These anticipations are probably due to the fact that Lucretius’ source had explained knowledge through senses at the outset (or took it for granted).
Anaxagoras' views too are presented tendentiously in the *critique*. Lines 859, 860 and the lost line(s) ahead of 861 introduce ἐν παντὶ παντὸς μοῖρα as one horn of a dilemma with which Anaxagoras is confronted, and therefore as Anaxagoras' only way out of the difficulties his *homoeomeria* encounters. It is only in line 875 that Anaxagoras is credited with ἐν παντὶ παντὸς μοῖρα and the predominance rule, as a response to Lucretius' objection. But ἐν παντὶ παντὸς μοῖρα was an integral part of Anaxagoras' doctrine. Claiming one's opponent's argument as one's own helpful suggestion, before demolishing it, is not untypical. One may wonder whether Lucretius himself would have taken the liberty of modifying the doxographical information so drastically, had he been directly dependent on it.¹⁷²

The argument in lines 859-874 is also unfair, in that Lucretius presents the problem of nutrition as an independent objection, while Anaxagoras had addressed precisely that problem, as is shown by *De generatione animalium* A. 18. 723a11.¹⁷³ Aristotle's and Theophrastus' reports emphasised the importance of observations from nutrition in Anaxagoras' system. These reports influenced the commentators on Aristotle, and may have led Aëtius (I. 3. 5) to derive ἐν παντὶ παντὸς μοῖρα from considerations

¹⁷¹ Lucretius' *critique* ignores the no creation-no destruction aspect of Anaxagoras. The reason is that Anaxagoras' principles are "weak", and so perishable according to Lucretius.

¹⁷² It is clear from Aëtius I. 3. 5 that ἐν παντὶ παντὸς μοῖρα was an important part of Anaxagoras' doctrine.

¹⁷³ Brown 1983: 156.
concerning nutrition. 174

Given that Peripatetic and doxographical sources emphasised nutrition as an issue prompting Anaxagoras' theory of matter, it is remarkable that Lucretius presents nutrition as an independent objection in lines 859-866. One perhaps cannot rule out that Lucretius himself, working directly from a doxographical source himself, turned into an argument against Anaxagoras what the source text presented as Anaxagoras' starting point. But it may well be that an Epicurean author decided to confront Anaxagoras on what was thought to be his starting point, perhaps acknowledging that Anaxagoras had discussed it (and Lucretius obscured that element).

The argument relating to infinite divisibility in lines 746-752 against the quadruple pluralists and in line 844 against Anaxagoras — assuming that Lucretius did not introduce it himself — is likely to derive from an Epicurean and not from a Peripatetic source, or any other philosophical source. Aristotle's view was that matter and space are infinitely divisible in potentiality, meaning that actual divisions can be made anywhere, not that the infinite can be realised by making divisions everywhere. The arguments against infinite divisibility in the critique cannot derive from a Peripatetic source.

It also seems worth pointing out in this context that, although both Aristotle and the Epicureans are opposed to Anaxagoras, Lucretius' arguments against Anaxagoras show no similarity to Aristotle's. Cherniss (1964: 3-4) points out that Aristotle's

174 Whether, as Jaeger thought, Anaxagoras derived his theory of matter from biological phenomena of growth and nourishment is perhaps open to question (Schofield 1975: 1-2 and 24), but Anaxagoras was certainly particularly interested in nutrition (KRS: 375).
objections to Anaxagoras’ theory are that (a) an elemental component must be a simple body irresolvable into specifically different parts; (b) it is an error to make components unlimited in number, when we can achieve the same result by having a limited number of elements; (c) since a material body is said to be other than another in consequence of its proper differentiae and these are limited in number, it is evident that the elements are limited (De caelo Γ. 4. 302b30-303a3). There is no trace of criticism on any of these points in Lucretius.

Lucretius’ arguments place little emphasis on the theory of juxtaposition of immutable elements, a distinctive aspect of Empedocles’ theory. Aristotle, on the other hand, attacks Empedocles on that point in De generatione et corruptione A. 8. 325b20-25 (where Aristotle distinguishes between Empedocles and the Atomists, whereas previously he has been assimilating them). It seems likely that there is no criticism of Empedocles’ specific theory of mixtures in the critique because Lucretius’ Epicurean source accepted the importance of mixtures to create things in our experience.175

175 An Epicurean (or any atomist) could however have argued that since atoms are unlike any sensible substance in our experience, their juxtaposition can explain all sensible substances — something Aristotle would not himself accept —, whereas putting together bits of familiar stuffs such as fire and earth will just give one something which is partly fire and partly earth (Mourelatos 1973: 16-48). Why Lucretius, or his source, did not go down that route is unclear.
Conclusion

Assuming that an Epicurean text reviewing and criticising earlier theories of matter, comparable to the text on which Cicero based the list of δόξα of the gods in De natura deorum, was available, is it more reasonable to suppose that Lucretius (a) chose himself the representatives for each category and picked the arguments which served the purpose of ruling out any form of monism, limited pluralism and unlimited pluralism from such a source, or to suppose that (b) some earlier Epicurean had done so?

Artistic constraints would have encouraged Lucretius to avoid a ‘doxographical list’, but the idea that Lucretius picked the three representatives from a source listing (and presumably criticising) many other δόξα seems at odds with the kind of arguments we find in the section on Empedocles. It would require Lucretius to look up the δόξα of a ‘transformationist’ (lines 782-802) — which was presumably attached to a name label other than Empedocles’ — and include such a view in his confutation without making it clear that this argument did not touch Empedocles at all.

I consider it more likely, therefore, that an Epicurean author earlier than Lucretius had composed a text which refuted fire monism (and with it monism generally), limited pluralism and unlimited pluralism. The word ὑπόμνημα, as Obbink (1996: 81) remarks, can be used to describe the discussion of a philosophical topic under various heads and by way of discursive paraphrase of the work or thought of one or more thinkers: “thus the author follows a characteristic method of composition by compilation enumerating
as many exempla as possible, while elaborating only a select few". 176

I am not sure one has to think, with Rösler (1973: 62), of a “doxographische Zusammenstellung” as Lucretius’ source. This depends on how loosely Rösler intended that expression. I doubt that an Epicurean text listing ‘all’ (or at least many of) the views on the fundamental nature of matter is more likely to have been the source than an Epicurean ‘polemical’ text which criticised the views of the categories of monism, finite pluralism, and infinite pluralism (which would save going into details of the δόξα of each thinker). It is perhaps likely, although it cannot be proved, that the source named Heraclitus and Empedocles within those categories, 177 although it may have named other thinkers too. Even if Lucretius’ source text did single out and name just the three Presocratics, it seem likely that the source would have distinguished the criticism of Empedocles from that of other forms of limited pluralism more clearly than Lucretius does. 178 The author of the source certainly drew at least some of his information, either directly or indirectly, from Peripatetic doxography. The next question, which I consider in chapter 2, is whether books XIV and XV of Epicurus’ ΠΦ were Lucretius’ source.

176 Obbink (1996: 81, note 3) notes that “the method of suggesting the many while elaborating only one or two instances” is found in Cicero’s philosophical prose.

177 Anaxagoras is clearly the focus of the section on unlimited pluralism; there can be little doubt that he was named in the source.

178 It is unlikely that such a text would have been a whole, dedicated work. It seems easier to think in terms of a section of a work the aim of which was to succinctly yet comprehensively rule out earlier physical theories on the fundamental nature of matter, presumably while expounding atomism.
Chapter 2. Books XIV and XV of Epicurus' ΠΦ.

Sedley argues that Lucretius used books XIV and XV of ΠΦ specifically\textsuperscript{179} as the source for his critique of earlier theories of matter.\textsuperscript{180} He maintains (1984: 384) that books XIV and XV contained "the original systematic refutation of rival theories of the elements" on which Lucretius drew and (1998: 125) that "our assumption of thematic unity for books XIV-XV suggests that the surviving sections formed part of a more extended critique, filling most of the book (albeit, no doubt, after some methodological preliminaries)."\textsuperscript{181} Sedley's theory is attractive because it implies that Lucretius used Epicurus' ΠΦ as his source throughout his poem, but it requires that Lucretius drastically altered the order of topics he would have found in Epicurus's ΠΦ, an alteration which Sedley explains as the result of the supposed wholesale 'second-phase

\textsuperscript{179} Giussani, who also thought that ΠΦ was Lucretius' source, did not speculate on which book, below page 220.

\textsuperscript{180} Philippson (1937: 473) had already suggested that book XIV was Lucretius' source, either directly (as Sedley thinks) or indirectly: "Dannach ist es wahrscheinlich, daß Lukrez für diese Elementenkritik unmittelbar oder mittelbar die unsres Buches benutzt hat". Leone (1984: 34) refers to Philippson's article, and it is surprising that he is not mentioned in Sedley 1998.

\textsuperscript{181} Leone (1984: 35) endorses Sedley's theory that the criticism of Plato is part of a systematic criticism of all rival theories.
revision' of DRN.\textsuperscript{182} In this chapter I shall give my reasons for thinking that books XIV and XV of the ΠΦ were not Lucretius' source.\textsuperscript{183}

2.1 The content of Books XIV and XV

Analysis of the remains of ΠΦ XIV and XV suggests that: (2.1.1) ΠΦ XIV was not dedicated to 'systematic polemic'; (2.1.2) Epicurus did not choose Heraclitus as the only representative of physical monist theories in ΠΦ XIV, and perhaps did not consider him at all; (2.1.3) Epicurus did not confute Empedocles in book XIV, instead he criticised Plato, who does not appear in Lucretius' critique, at length; (2.1.4) ΠΦ XV was not dedicated to criticism of Anaxagoras' theory of matter: the use of ὀμοιομέρεια and the adjective ὀμοιομερής — proves little, because Epicurus used the word to refer to concepts relating to his own theory. Even if Anaxagoras' theory is referred to (which seems possible in only one of the occurrences), this was to set Anaxagoras' use of ὀμοιομέρεια against Epicurus' own use. These four points indicate that Lucretius did not use ΠΦ XIV and XV as direct source for his critique.

\textsuperscript{182} Below Appendix (a), pages 389-391.

\textsuperscript{183} On the characteristics of Lucretius' source text, see above pages 78-79. ΠΦ XIV and XV, according to Sedley, contained a longer and more comprehensive list of thinkers, although he does not stress how selective and cavalier in the use of his Greek source Lucretius would have been had that been the case.
2.1.1 Book XIV was not dedicated to polemic.

It is not inconceivable that Epicurus, who had a polemical attitude, dedicated two books of his physical treatise to systematic refutation of earlier thinkers’ theories of matter. He may have followed Aristotle’s and Theophrastus’ example by emphasising consideration of earlier thinkers’ views. But there is no certain evidence that Epicurus was in the habit of composing systematic reviews of opponents’ δόξαι on particular topics. The titles Περί παθών δόξαι πρός Τιμοκράτην and Περί νόσων δόξαι πρός Μίθρην (Diogenes Laertius X. 28) may well have been collections of Epicurus’ own δόξαι, just like the Κύριαι δόξαι (Diogenes Laertius X.27), assuming these are the Κύριαι δόξαι which Diogenes lists in X. 139-154. Epicurus’ lost Ἐπιτομή τῶν πρὸς τοὺς φυσικούς may have contained systematic criticism in a list such as Sedley envisages for books XIV and XV. The evidence from the rolls suggests that books XIV and XV were not dedicated to systematic refutation of theories of matter.

2.1.1.1 Evidence from the format of PHerc. 1148

The remains of PHerc. 1148, the roll ‘preserving’ ΠΦ book XIV, are kept in 11 frames.

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184 Above pages 48-49.

185 On whether Epicurus’ lost Ἐπιτομή τῶν πρὸς τοὺς φυσικούς was a summary of ΠΦ XIV and XV, below page 194. On whether it was the source of Lucretius’ critique, below page 254.
All the fragments come from the upper part of the *midollo* ('marrow'), that is, the innermost layers of the papyrus roll. The fragments come from the concluding columns of book XIV. Of these columns only the top lines are preserved. In some of these columns Epicurus refutes the monist theory according to which all things can derive from a single *φύσις* through process of condensation and rarefaction. Epicurus then proceeds to refute Plato's *σχήματα*-theory, according to which a particular regular polyhedra (composed of triangular planes) corresponds to each of the elements.

Columns XXIV- XL\(^{185}\) of Leone's edition all either introduce polemic or actually attack other thinkers' theories. Since these make up the overwhelming majority of those columns the content of which can be determined with reasonable confidence, the evidence seems *prima facie* to speak in favour of Sedley's thesis. But 27 columns constitute only a very limited portion of the whole roll. It seems clear that the whole of book XIV occupied between 175-214 columns, as is argued in Appendix (b).

The 27 columns attacking opponents, including, as we shall see, a lengthy introduction and justification of such polemic, and re-statements of Epicurus' own doctrine, made up at the very most about a sixth of the whole book. It seems dangerous to make assumptions about the overall content of the book judging from such a small section of it.

\(^{185}\) Columns XXXIX(end)-XLIII are also in some sense polemical, but are 'defensive'. Epicurus is defending himself from a charge of being unoriginal (probably on the grounds that he used terms, such as perhaps *στοιχείον*, borrowed from other thinkers; below note 245).
A striking feature of *PHerc.* 1148 is the frequency with which the terms σύγκρισις and σχήμα occur in the extremely fragmentary columns I-XXII, the earliest columns of those preserved. The two words are used in conjunction with terms such as ἀδέξης παράλλαγμα (column II), διάθεσις (fragment 19, and probably to be restored to column XVI), περιφερεία and περιπλοκή (column a), διαφόρους φύσεις (fragment 18), μεταβάσεις (column III and VIII), ζευγνωσθαι (column XI), ἀναλύσεις (fragments 21 and 43), περιλήψεις (fragment 19) and ἄθροισμα (fragment 52). This evidence, taken in conjunction with the scholium to *Ad Herodotum* 40, suggests that the ‘main’ topic of books XIV and XV is how atoms came together to produce aggregates.

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186 See columns VI, XIII, XV, XXII; fragments 16, 19, 30, 39 and 52; τὰς συγκρίσεις should also perhaps be restored to line 3 of column XX. I doubt that the appearance of the verb διαφέρει in line 2 of fragment 37 is an indication that Epicurus was considering Heraclitus’ fire monism here. Epicurus may well have explained how flames came about according to his theory of aggregates, anticipating his discussion of flames when dealing with Plato’s theory (below pages 139-141). More suggestive are perhaps στοιχεῖα[ι in fragment 24 and ἄρχῃ in column XIX, but these are isolated words, without context.

187 Καὶ μὴν καὶ τῶν [τούτο καὶ ἐν τῇ πρωτῇ Περὶ φύσεως <φην> καὶ τῇ ἰδ’ καὶ ἰε’ καὶ ἐν τῇ Μεγάλῃ ἐπιτομῇ] σωμάτων τὰ μὲν ἐστὶν συγκρίσεις, τὰ δ’ ἐξ ὅν αἱ συγκρίσεις πεποίηται. It is reasonable to suppose that Diogenes Laertius, or, perhaps, his copyist, reproduced the scholia he found in the text of Epicurus he was copying, rather than these being annotations on Diogenes.
Sedley (1998: 123), on the contrary, proposes that the συγκρίσεις were introduced as a part of the systematic confutation of earlier thinkers which the book allegedly contained. Epicurus, while criticizing others on how matter was formed, would have decided to show how his theory is superior to rival ones, as Lucretius does a number of times in his *critique*. Presumably this incidental discussion of aggregates would have arisen out of his confutation of other monists, which preceded the confutation of monism we read in the fragments of *cornici* 7 and 8.

It is unlikely, however, that Epicurus embarked on an extended and detailed digression about his own theory of aggregates in two successive books, just to show where others went astray and that his theory was superior to theirs. It seems improbable that it is just by chance that fragments of such digressions survive. One may also wonder whether Epicurus would have introduced two extensive digressions on aggregates if, as Sedley argues, he had already given a full account of aggregates in the early books of ΠΦ. Sedley's reading of the evidence is by no means more probable or economical than the alternative reading, according to which books XIV and XV contained the main account of atomic aggregation, and of how such a process of aggregation could explain

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188 This is on the basis of text [36. 24] Arrighetti, where Epicurus refers back to his treatment of τῶ[ς] πρὸς[ς] ἀλλήλας κρούσεις in book I. One might also wonder whether there would have been enough space in ΠΦ I for a *full* account of aggregates since many topics are attributed to that book (below pages 222-227). In ΠΦ I Epicurus presumably presented only preliminary remarks on aggregates, and came back to the topic in far greater detail in books XIV and XV.
Probably what happened in ΠΙΦ XIV is that when explaining how atoms combine to produce things in our experience, Epicurus decided to make clear, first, that the monist theory according to which air produces all things through condensation and rarefaction was unacceptable and, second, that another alternative to his theory of aggregates, Plato's regular polyhedra, could not satisfactorily explain how things are formed either. Epicurus was not set upon producing a 'comprehensive' refutation of earlier theories on the στοιχείον proper. I will now consider the columns in cornice 6 of PHerc. 1148, which provide evidence for the structure of the book and support, in my view, the suggestion that the attack against the monists and Plato was incidental.

189 One may wonder whether the συγκρόσεις could have been the only topic of both XIV and XV. Presumably an account of aggregates could have filled both books, if a number of digressions were included.

190 Longo Auricchio (1992: 110) remarks: "Epicurus' polemic against Plato's doctrine of the elements in the Timaeus outlines the discussion of a basic subject, viz. the shape of aggregates resulting from the inconceivably large number of atomic shapes of which they are composed". I would suggest that the theme of the latter part of the book ran roughly as follows: 'look at how easily aggregates of atoms can produce all the different shapes of objects in our experience! And compare this with condensation and rarefaction as used by the monists, or Plato's triangular shapes!'

191 This would explain very well why Epicurus deals only with the part of Plato's theory which considers the triangles.

192 Philippson (1937: 469) and Leone (1984: 32) hold that in book XIV a theoretical section was followed by a polemical section. Arrighetti (1975: 49) argues that book II, book XI and PHerc. 1420 (which as Laursen (1995) has established is part of IIΦ XXV). did the same. Indeed in the case of the latter we can follow the transition from the theoretical section (20 B and 20 C (1) in Long-Sedley) to the polemical section
2.1.1.3 Columns XXIII and XXIV

Leone rediscovered column XXIV, believed lost by Vogliano, Philipsson and Arrighetti, in pezzo II of cornice VI. This fragment reads:

\[\begin{align*}
\text{ἀ-[]} & \\
\gammaαπητ[\dot{o}]γ καὶ τοῦτ[ο], τὸ & 1 \\
\deltaὴ πάντα τὸν συνε[χό]μενον [ταῖς] τοιαύτας περι- & \\
εργ[ε]ίας ἓχειν οἰονι φάρ- & \\
μα[κ]ον, δι' οὐ καταστάσεις & 5 \\
ἀπλ[.]γ[.]ν ἐν τῇ περὶ φύ- & \\
σε[ως θεωρίαι] ἀπαλλαγή- & \\
σει[ασθαί τῆς ᾿αμφύτου' ε' αὐ- & \\
τα[ῖς ταραχ]ῆς ἦ καὶ ὅστε- & \\
ρον [. . . . ] . η ποτ' [ἐ]γ τῇ & 10 \\
\end{align*}\]

(20 C (2) - 20 C (14)). Similarly columns V- XXI of ΠΦ XXXIV (PHerc. 1431) are polemic (see especially column XIV; Leone 2002: 58); unfortunately we do not know what came ahead of them. It is interesting that XXII-XXV seem to have had, with a pattern very similar to that of book XIV, discussion of methodological issues and a formal close (Leone 2002: 38-39). For polemic in other books ΠΦ, above note 92.

But this does not, in my view, guarantee that it came immediately after column XXIII.
It looks as though Epicurus was introducing his polemic in this column, by pointing out that his theory was the φάρμακον which cured the anxiety produced by philosophical speculation on how matter was formed, although it is not immediately evident how air-monism and Plato’s theory of σπηματα should produce anxiety.194 Epicurus’ agenda is, explicitly, to provide a remedy against theories by others which may cause ταραχή in his pupils.

The introduction of the polemic, however, had started earlier than column XXIV. The mention of ἱατρεία in line 3 and εὖ ῥετήρας in line 7 of column XXIII should most probably also be explained in relation to Epicurus’ theory of aggregates as a remedy for false views, views which may disturb our tranquillity. Column XXI appears to be the start of a new topic:

δὲ [μ]έχρι δὲ πα[. . . . . . .
τ]ῶν οὐ προσδ[εόμεθα τῶν πα-
ρὰ τοῦ πέλας [δοξαζόμενων:}

194 Perhaps the fact that Anaximenes thought air was divine, and the role of the Demiurge in Plato is what Epicurus had in mind.
Even if one wishes to be sceptical about Leone's restorations, the term βαδιστέον suggests that we have a transition here from one section to another.

One would be tempted to conclude that XXI introduced the polemical section of the book, but columns XI and XII, which come from *cornice* 3, may suggest Epicurus was already considering other thinkers' views. Column XI reads:

.. Ἰομένην ὑπ' αὐτῆς φα[ντα-
σί]ὰν ἵχυρώς .. [•] καὶ λε[••]·
.. ἰν' οὐ πρὸς ἐπιδείξιν [••]

195 Where columns XI and XII came on the roll is uncertain. The way in which they appear in the *cornice* suggests they were not successive columns. It is at least conceivable that the two columns come from two different layers of the roll.
There are traces consistent with a large π in the upper margin. η is inserted above the line in the gap just before καί. λαχεῖν the traces would allow, slightly less comfortably, for καλεῖν.

If we restore, as seems possible, δικόν in place of Leone's εἰδικόν in line 5, Epicurus would seem to be already introducing polemic in this column. The verb λαχεῖν in line 4 would support such a suggestion. The reading however is not certain, see appartus. Assuming that λαχεῖν is right ὃ πρὸς in line 3 indicates that Epicurus was not proceeding to (or aiming at) an ἐπιθετίς . . . τοῦ λαχεῖν, but to another topic (ἀλλὰ πρὸς of line 6).

Column XII may also have mentioned criticism of the views of others:
ης τι οὖ πρὸ [ . ]
.
.
.
αὐτῶι ης αἱ μ.
.
.
.
. ἵζηται ἀλ-
λ . . . . . ]των ἐκθεσιν
καὶ ἐπιτΔε[ξιν ἀν πρᾶ-
.
.
.
.
. ]ταιων καθε[
.
.
.
.

The remains in *cornice 3* are so full of *sottoposti* and *sovraposti*, and the *sezioni* are so unclear, that one cannot be certain what layer of the roll we are reading at this point. Probably they belong four or five columns before column XXI, where, as we have seen, Epicurus moved on to treat a fresh topic.

It is uncertain however precisely how Epicurus used ἐπιφορά. Proposed translations are “riferimento” or “conclusione” (Arrighetti), “proposition” (Millot), “conclusione di un ragionamento” or “modo di ragionare” (Leone). Epicurus uses ἐπιφορά later on in the book in connection with other thinkers. In column XLI Epicurus uses ἐπιφορά thus: “whenever someone praises τὸ τοῦδε τινὸς ἐπιφοράς ὀρθῆς εἴδος (the appearance of someone else’s correct proposal) and then that made by someone else, . . .”. And in column XLIı Epicurus writes . . . λευκαμεμένους καὶ τὸ ἀπὸ τῆς τύχης τῆς φύσεως αὐτῶν ὀρθῶν ἐπιφοράς εἴδος . . .197 He may have been thinking in terms of other thinkers’ δόξαι by ἐκαστὰς τῶν ἐπιφορῶν in column XII, but we have no clue as to what topic such ἐπιφορά regarded.198

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196 The *sezioni* are the vertical marks (grooves) which were made on both sides of the rolls by the compression under ashes/lava. Measuring the *sezioni* enables us to establish the order of the fragments and to determine whether columns are lost between one frame and another.

197 On Epicurus’ use of ἐπιφορά see further below, pages 179-181.

198 Making the polemical section start as early as column XII does not seem satisfactory, since the evidence suggests that the preceding and following columns dealt with aggregates (Leone 1984: 72-73). It may be that Epicurus did start a section dedicated to polemic in column XXI. It is also possible that something has again gone wrong with the disposition of the fragments in the frames.
2.1.1.4 Evidence from the sezioni

The size of the sezioni on PHerc. 1148 indicates that the fragments conserved in cornice 8, that is, columns XXX to XXXIII in Leone’s edition, originally came ahead of those in cornice 7, namely columns XXVII to XXIX.\(^{199}\) Thus the original order of the columns was XXVI, XXX, XXXI, “XXXIII”, “XXXII”, XXVII, XXVIII, XXIX, XXXIV. Column XXX, which was previously thought, because of its position, to be part of the criticism of air monism, is in fact part of the previous section, in which Epicurus introduced his polemic against earlier thinkers.\(^{200}\)

And it looks as though the section introducing the polemic spread throughout columns XXIII - XXIV-XXVI-XXX. Column XXX reads:

\[\text{νες ἀνδρές πράττουσιν, ἀλ-}\]
\[\lambda\alpha\ καὶ τῶν προσαγορευομ[έ-}\]

\(^{199}\) The first sezione of cornice 8 is 37.00 mm and it looks as though the second was just as wide, although the sezione-break cannot be seen clearly. The following circumference (two sezioni) is circa 72 mm wide. The next circumference comes after 81.50 mm., which does not make sense, but fragments are only joined by a thin layer of pelle (so the way in which they were glued down might explain the oddity). The final stretch of fabric in cornice 8 measures circa 66 mm but this may not be a complete circumference. The sezioni in cornice 7 are even less clear. No sezione mark can be seen in the first 55.00 mm, but the following two circumferences measure 70 mm. and circa 68.00 mm.

\(^{200}\) On this section see below 2.1.3.
νων ἡμεῖς, οὐς, ναὶ μᾶ τῷ ν ἔλπίσαι, εἰ δεῖ, καὶ Δημόκριτος,

δος ονομάσαι ἄρ' ἄν ἐπιστεύον μὲν πρὸς πᾶσι τ[αίς] ἐν το[ίς]

μετεώροις καὶ ψ[...] ἔσιν ἐπινοίαις καὶ θ[...] του-

tὸ [κ]ατὰ λεξ[]

αν ἀπολαβεῖν τ[]

dὲ τῆς ἀδ[υ]νά[της]

μὲν οὐδ' αὐτῶν []

3 'φιλοσόφων' is added above the line, seemingly by the same hand; one cannot perhaps be certain it was part of the original text. 5 the traces of the sigma of ονομάσαι are not clear, ονομά<σ>αι may be the correct reading; ἔστε[π]οιᾳ: τι rather than τ, but τ gives no sense

0-1 τι|νες Hayter: βελτίο|νες Gigante 1-4 Leone 5-6 ἐπ[ν]ησταὶ-μὲν Leone 6 dubitanter supplevi μὲν πρὸς πᾶσο... τ[...] ἐν το[ίς] Leone; το[ίς] πᾶσιν...[.] ἐν το[ίς] Arrighetti 7 μετεώροις κα[...] ἔσιν Leone 8 ἐπινοίαις κα[...] τ[...] οὐ- Leone 9 τὸ [κ]ατὰ [...]. ἐξ [... - - Leone 11 legi; δὲ τῆς... να Leone [- - 12 legi; μὲνου [... . αὐτῶι[ - - Leone

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This column seems best understood as part of an introduction of the philosophical opponents Epicurus is about to attack, rather than as coming in the middle of the confutation of air-monism. Epicurus thus dedicated more space to his justification of polemic than to his criticism of air-monism. It is unlikely that, if the whole of book XIV were dedicated to ‘systematic polemic’, Epicurus would include such an extended introductory section on why other thinkers’ views should be dispelled, and how his theory could dispel them, so late in the book.

Leone’s translation “ma anche dei cosiddetti filosofi, che per il dio, io spero che anche Democrito abbia denominato così, se proprio è necessario dare loro un nome” gives a rather awkward sense. It is not clear who Democritus meant by “philosophers” (Plato being later than him), and why Epicurus should have hoped that he had called them thus. Perhaps the sense of the fragment was something like: “I am not sure whether one should call [not only these thinkers but] even Democritus a philosopher”. But such a meaning, and construction, is not attested for ἐλπίζω / ἐλπισμα.201

In column XXXI, which immediately followed column XXX, Epicurus seems to have gone back to an aspect of his own theory, perhaps to explain some phenomenon in our experience. He then introduced the theory according to which a single φύσις undergoes changes of nature:

---

201 This problem is so puzzling that I would not rule out that some of the letters come from a different layer of the roll.
κατὰ μι-]
κρόν πολλούς ὑγκ[ους δε - 1
ξομένης· καὶ ἄλλ[ων συγ-
kρίσεων· εἰς το [ . . . ]αι
τῶν τὸ καθό[ου . . . συνισ-
tαμένων κ[ . . . . . . . οὐ]ρα-
νοῦ[ ε] γε [ . . . . . . ]αν
τα . α . [ . . . . . . . κ]αὶ
ἀρα[ underworld [ . ] ε μία[ des-
δὲ ἄρχῃν ποιεῖ[ metα-
ἐπιφέροι το [ . . . . . . μετα-
βολάς δεχομέν[ . . . . . . -
ρισε . [
ὁ γὰ[ . . . . . . ] καὶ [
. κοι· το . [ 15
δύνα[ τὴν αἰσ[θησιν
καὶ ση[μει
οιοντ . [
tου ἀέρ[ος [ 20
. ατ
104
Epicurus was talking about compounds here. The idea seems to be that one compound gradually takes in many δγκοι. It looks as though Epicurus used δγκοι to refer to groups of atoms which preserved the characteristics of the whole compound, although he also used it to refer to “physical parts” generally.²⁰² It is used for minimal parts (Ad Herodotum 54, 56 and 57), and for parts of earth which move in earthquakes (Ad Pythoclem 105). The occurrence in ΠΦ XXV Laursen 3.2.1 (1995: 104) is indecisive,

²⁰² According to Furley (1967: 12) δγκος refers to anything with three dimensions (“quantities” or “quanta”), although he translates “parts” for convenience.
although it could refer to *nuclei* of atoms.\textsuperscript{203} In *Ad Herodotum* 69 δγκοι is used to refer to parts of a compound, parts which can vary in size from the smallest parts to parts just inferior to the whole compound. Epicurus similarly uses δγκοι for parts of a “stream” which are presumably groupings of atoms (*Ad Herodotum* 52 and 53; below page 142). And in Arrighetti text [21] [3] we read that Epicurus προστίθησι δε δτι πολλάκις ουδ’ ἠλθὲν εἰς τὸ σῶμα θερμαντικῆν ἐπιφέρων ἢ ψυκτικῆν δύναμιν ὁ σίνος,\textsuperscript{204} ἀλλὰ κινηθέντος τοῦ δγκου καὶ γενομένης τῶν σωμάτων μεταστάσεως αἱ ποιοῦσαι τὸ θερμὸν άτομοι νῦν μὲν συνήλθον εἰς τὸ αὐτὸ καὶ παρέσχον ὑπὸ πλήθους θερμότητα καὶ πύρωσιν τῶι σώματι, νῦν δ’ ἐκπεσοῦσαι κατέψυχαν. It seems likely that by δγκοι in column XXXI Lucretius was referring to a compound taking in molecules.\textsuperscript{205} Giussani (1896: 78-84) argues that


\textsuperscript{204} Note how Epicurus seems to have *Timaeus* 60A in mind, and to be correcting Plato.

\textsuperscript{205} Further evidence may come from *Ad Pythoclem* 109: κρόσισταλλός συντελεῖται καὶ κατ’ ἐκθλίψιν μὲν τοῦ περιφεροῦσα σχηματισμοῦ ἐκ τοῦ ἰδιατος, σύνωσιν δὲ τῶν σκαληνῶν καὶ ὀξυγωνίων τῶν ἐν τῇ ἰδιατι ὑπαρχόντων, καὶ κατὰ ἔξωθεν δὲ τῶν τοιούτων πρόσκρισιν, καὶ συνελασθέντα πῆζιν τῶι ἰδιατι παρασκεύασε, ποσὰ τῶν περιφερῶν ἐκθλίψαντα. It may be that
Epicurus' δγκοι (Lucretius' cacumina) are the minimal parts of a substance which still have the properties of that substance, and that therefore Epicurus had a theory of molecules.

Giussani argues that (a) in the argument which DRN II 391-397 reproduce Epicurus' point was not that the foramina of a column are too small for atoms, but that they are too small for the molecules,\textsuperscript{206} that (b) in lines 451-455 — where he (unnecessarily) places line 454 before 453 — the glomeramina are δγκοι of the liquids (referring also to DRN II 686), that (c) that in DRN IV 108-124 Lucretius' use of primordia in line 118 is careless, since the reference in the source could not have been to atoms, but to molecules (1896: 82). The problem with (a) is that both the size of the molecules of oil, and the fineness of the images themselves may depend on the size of the atoms which made up the compound (as well as, presumably, the number of atoms in the compound). It is not inconceivable that Epicurus was commenting on the size and shape of the atoms in the passages Lucretius reproduces, but in the context of the difference the size and shape of the atoms makes when they are joined in a molecule. In passage (b) the expression nec retinentur enim inter se glomeramina quaeque of line

Lucretius is referring to atoms here by τοῦ περιφεροῦς σχηματισμοῦ and τῶν σκαληνῶν καὶ δεργώνων. But it is certainly possible that he is referring to molecules which had that shape. One may indeed wonder whether Epicurus would have wanted to be so specific about the shape the atoms had. Ad Pythoclem 110 similarly suggests as a possible explanation of the rainbow that the aggregate of atoms assumes a round shape (περιφερεία). This seems to suggest specific shapes for a compound, although it is referred to in a possible (rather than certain) explanation, and the rainbow may be a very special case.

\textsuperscript{206} Bailey (1947: 866) agrees with Giussani that in (a) Lucretius is misunderstanding Epicurus.
454 is interesting. Bailey (1947: 876-878) agrees with Giussani that *glomeramina* here refers to the round *nuclei* of water, although he is not happy with giving *glomeramen* the technical sense of molecule. Even if *glomeramina* does not refer to molecules but to atoms, a point is still being made about the way in which the atoms come together (*inter se*) as a result of their qualities rather than to the qualities of the atoms themselves. As far as (e) is concerned in *Ad Herodotum* 48 Epicurus comments on the fineness of the images themselves, not of their component atoms, which seems to support Giussani. The evidence from *DRN* is perhaps not enough by itself to attribute a theory of molecules to Epicurus, but when one adds the references which Epicurus makes to molecules, or at least the importance of the shape of the aggregates, it is tempting to credit him with such a theory.

There is one piece of evidence that seems to suggest that the difference of the atoms themselves, and not of the compounds, is important for determining whether a thought is taken in by the πόροι, presumably of our mind. ΠΦ ΧΧV *P*Herc. 1191 fragment 6.2.2.3 and *P*Herc. 1420 fragment 2.2.1 join at this point (Laursen 1995: 91):

-τοῖς μέμα μᾶλ-

λον, τοῖς δ’

ήττον, τοῖς δ’ ο̄λως ἐπὶ βρα[χύ]

ti kai oūk enτυπων πάλιν

tinων kai prōs tēn diāνο-
ητικὴν σύγκρισιν (όμοιοσχημοσύνη) παρεμπιπτόντων των ἐκ τοῦ ἑκατέρου προσθετόντων ἑρμηνείας θεωρεῖ τὰ γε δὴ πολλαπλασιάς ἐξοικείωσις μὲν καὶ αὐτῆς τῆς συστάσεως τῆς διὰ τῶν στοιχείων αἰτίας παρὰ τὴν τῶν ἀτόμων διαφοράν καὶ τῶν προϋπαρχόντων πόρων. ** οὐ μήν ἀλλὰ καὶ τοῦ ἀπογεγενήμενου νοηθέντος

Arrighetti (1973: 640) though that Epicurus was talking about the composition of the soul here and that he used στοιχεῖα "nell' accezione presocratica di elementi (aria e fuoco)" which we know from DRN III 231-257 made up the soul. Laursen (1995: 52-53) stresses that ἐντυπών in line 2 is the text of the papyrus, but one cannot exclude a scribal error, since the scribe of PHerc. 1420 was very careless. If one reads, with
Arrighetti, ἐϰ[κ] τῷ̲πον in line 2 the syntax of the sentence is much clearer.\textsuperscript{207} However this may be the reference in lines 12-15 seems to suggest that whether the πόροι take in the compounds depends on the differences of the single atoms, rather than molecules of atoms.

Epicurus, in column XXXI of ΠΦ XIV, mentioned how a compound could gradually take in many parts, which were themselves presumably molecules. He went on to describe the formation of other compounds, presumably of a similar nature, in lines 3-5. If, as is possible, οὐ̲πάρξειν should be restored in lines 5-6 he was speaking here of compounds which formed in the sky. The reference could have been to the formation of clouds, in the context of how a substance can be produced out of another. In lines 8 and following Epicurus apparently sets against his own theory one according to which a single primary substance — assuming μίαί of line 8 and ἄρχειν of line 9 should be taken together — can undergo (δἐχεται) changes in nature. It is worth noting that the verb used to introduce such a theory is a third person singular in the optative, ἐπιφεροι, in line 10. The subject may have been a generic τις.\textsuperscript{208} It looks as though Epicurus introduced here the monists who used condensation and rarefaction as means of transformation of one substance into another. The mention of air in line 19 perhaps indicates that he had proponents of air monism in mind.

\textsuperscript{207} Laursen toys with the idea of reading αἷς τάκα in lines 11-12; but if one needs to alter the text, a change of τῆς of line 10 into τάς seems preferable. Arrighetti reads ἐχοῦσης in line 9.

\textsuperscript{208} Compare fragment 5 of PHerc. 1151, below pages 149-151.
In the following column, numbered "XXXIII" by Leone, Epicurus is pointing out how condensation and rarefaction cannot explain our world:

\[
\begin{align*}
\text{oú γὰρ} & \quad 0 \\
\text{παρὰ [τούτων πῦκνωσιν} & \\
\text{ἡ ἀρε[ί]ωσιν τὰ πράγματα} & \\
\text{γεννάται ἀλλὰ παρὰ σχῆ-} & \\
\text{ματ[ων διαφορὰς τὸ ἵσχυ-} & \\
\text{ρὸν [τῶν παραλ[λ]αγῶν} & \quad 5 \\
\text{[ἐκγίνεται τὸ δὲ [ἀντιλ[ε} & \\
\text{... ... ...] τουτ[ ... ... ...] } & \\
\text{... ... ...] α[ ...]α[ ... ... ...] } & \\
\text{ονως ἁ[ ...]αυτη[ } & - \\
\text{σα πα[ρὰ τῇ]ν πῦκν[ωσιν} & \quad 10 \\
\text{ον [ } & \\
\text{]α[ ...]κ ἐστὶ[ν ἴσχυ[ρ ... } & \\
\text{οὑ τοῦ π ... ] } & \\
\text{τ ... } & \\
\end{align*}
\]

\[208\] It is not clear to me why Leone (1984: 59 and 85) thinks this column is a sottoposto, and inverts the order and the numbering of the columns accordingly at this point. She is following Arrighetti, who argues (1973: 605) or rather states that the column comes from a different layer, although he edits the fragments in the order in which they appear in II, the correct order (see Plate on page 447).
It is interesting that, although their target is completely different, Epicurus and Lucretius criticise monism in a similar way, by showing that condensation and rarefaction are inadequate explanatory principles. A striking difference, however, is that while Epicurus explains the differences in things we experience by referring exclusively to the differences in \( \sigma\chi\mu\mu\alpha\tau\alpha \), Lucretius emphasises the \textit{motus}. Leone's translation assumes that...
σχήματα refers to the shape of the atoms. This is possible, but given the content of column XXXI, it is at least possible that it refers instead to the shape of the compounds (below pages 133-140). It is perhaps less likely that it is a generic reference to both.

Column “XXII”, the final column of cornice 8, reads:

\[\text{ta}\varepsilon\alpha\ldots\]
\[\epsilonν\text{ tēi φύ[σ]ει} \ldots \kappa-\]
\[\tau\alpha\ \text{tēn} \epsilonν\ \tauω[ι] \]
\[\chiουσαν\ \nu\tauε \ldots \ldots \]
\[\ldots \cdot ζ\ \alphaτμ\zetaειν\ldots \delta-\]
\[\deltaωρ\ \gammaε[\gamma]ο[ν]ω[ς \ldots \]
\[\alphaυτων\ \απαυ[\ldots \ldots \]
\[\tauων\ \chiου[δρων]\ldots \ldots \]
\[\deltaικε[\ldots \ldots \]

1/2 paragraphs 6/7 perhaps paragraphs, but it may be displaced ink 8 according to Leone the two letters after τῶν are a sovraposto, I disagree

\[1\ \text{legi} 2 \phi[\delta]\xi \text{Arrighetti} \phi[\delta]\xi \text{Leone}\ 2-3 \kappa[\alpha]-\tau\alpha \text{Arrighetti Leone}\ 3-4 \piερι[-]\chiουσαν\]
\[\text{Arrighetti Leone} 5-6 \delta[-]\deltaωρ \text{Leone}\ 7 \alphaυτων\ \alphaπαυ[\text{Leone}}

113
It is unclear whether Epicurus is refuting an argument by the air- or water-monists. The evaporation of water, producing vapour and smoke, would be an argument presented in favour of one substance becoming another. And if the reference in τῶν χόν[δρόν is to grains of salt, this was further proof that a φύσις, presumably water, can turn into something else when it evaporates. It is perhaps possible, though, that τῶν χόν[δρόν is a reference to particles of water forming through condensation. Epicurus presumably went on to give his own explanation of such phenomena.

The argument could also have been used by air-monists, if they were presenting an argument for the reverse process of water tuning back into air, considered as the primary substance. But perhaps Epicurus was not targeting earth-monists or water-monists exclusively or specifically, but rather showing more generally that one substance cannot, or does not really, become another substance by condensation and rarefaction, and therefore one φύσις cannot explain the variety of things that we experience.

My conclusion is that Epicurus' criticism of monist theories based on condensation and rarefaction started in column XXXI, where it was set against Epicurus' own theory, and continued in columns XXXIII, XXXII, and XXVII, the first column of cornice 7. Column XXVII confutes the monists' additional argument that rain comes from clouds:

πρὸς τ[ο]β[ς ἐ[κ] τῶν νεφῶν
φ]ασκόντας πυκνομέ-
ν]ων τὴν τοῦ ὀδατος φύ-
σιν ἀποτελείσθαι, καὶ νο-
μίζοντας καὶ τούτο σημεῖ-
ον εἴ]ναι ὡς ἐ[κ] μιᾶς φύσε-
ως ἀ]παντα γίνεται πυ-
κνώσει καὶ ἀ[ρ]αιωσει παρ-
αλλα]ττούσης τ[ . . ]ερα
. . ] . γα[ . . . . . . . . ] . μεν
. . οὐ]κ ἐκόντε[ζ . . . . . . . ]

The καὶ in line 5 is easy to understand if it follows a consideration of a previous argument by the monists (or even if he was summing up his response to their using argument). It seems harder to explain the καὶ if column XXVII is taken to be the first one attacking monistic theories.

In column XXVIII Epicurus introduces the concept of shapes, presumably to explain how, according to his own theory, rain is formed out of clouds:
καγ [. . . . . .]αι τοῦτων

τῶ[ν . . . . . . δδ]ωρ συν[στά-]

ταύ κ[. . . . . . .] σχημά-

tων [. . . . . . .]εν κα-
tαλαμβανομ[ένων] . . . 5

tο περι [ ] εξ ὧν τό-
δ[ω]ρ. [ 

δατο[ς] ο[ 

ἀποτ[ε]λείο[θα]ι οὐθ . . . -

ρω[ν] η δθεν[ 

μεν . εθη . [ 

ν . . γάρ πρ[ 

3 the letters ις which Leone reads in this line are probably from a different layer 4 the letters -στητος

tῶ[ν] are probably from a different layer 5/6 in left intercolumnium sign made up of three dots placed
as to form a triangle


116
In column XXIX, a column so full of *sovrapposti* and *sottoposti* that it defied transcription before Leone supplied an edition, we read:

\[ \delta \ . \ \alpha [ \ldots \ldots \ldots \ldots ] \nu \kappa [ \alpha \tau \alpha ] \]

\[ \tau \alpha \varsigma \ \delta \mu \omicron \iota \varsigma \ [ \phi \alpha \nu \tau \iota \sigma [ i ] \alpha [ \alpha \nu - ] \]

\[ \tau \omicron \upsilon \varsigma \ \pi \alpha \rho \alpha \lambda \omega [ \gamma \iota ] \zeta \omicron \nu \tau \alpha \iota \]

\[ [ \ldots ] \varsigma \delta \iota \delta [ i ] \varepsilon [ \epsilon \iota \nu \nu ] \upsilon \tau \omicron [ \iota ] \]

\[ [ \ldots ] \kappa \tau \theta [ \ldots \ldots ] \]

\[ \eta \ \alpha i \sigma \theta \omicron \omicron \varsigma \ \tau \omicron \upsilon \tau \iota [ \ldots \ldots ] \]

\[ \ldots \] \mu \alpha \rho \tau \nu \rho \iota \epsilon i [ \ldots ] \]

\[ \ldots \] \lambda \iota \rho \epsilon i \varepsilon [ \cdot \cdot \cdot ] \upsilon [ \cdot ] \]

\[ \ldots \] \delta \iota \nu [ \cdot \cdot \cdot ]

\[ \ldots \] \omicron \mu \epsilon \nu \alpha [ \ldots ] \]

\[ \ldots \] \gamma \delta \rho \rho \nu \rho \varsigma \ \omicron [ \ldots ] \tau \cdot \mu \alpha [ \ldots ]

\[ \ldots \] \tau \omicron \epsilon \xi [ \cdot \cdot ]

\[ \ldots \] \phi \omicron [ \cdot ]

\[ \zeta \eta [ \tau ] e i \nu \tau \iota [ \cdot ] \]

\[ \eta [ \alpha i \sigma \theta ] \eta \omicron \omicron \epsilon i \varsigma \phi [ \cdot \cdot \cdot ] \epsilon \nu \omicron \ \theta \epsilon \iota [ \cdot \cdot \cdot ] \]

\[ \pi \alpha \rho \alpha \lambda \omicron [ i ] \zeta \omicron \nu [ \tau ] \]

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I think that in this column Epicurus was introducing Plato's view. The expression τὰς ὀμοίας, if that is the correct reading, may indicate mental representations similar to those of the monists who believe that condensation and rarefaction explain the differences between things. Although φαντασία is usually a technical term in Epicurus (in a number of various meanings), Leone (1984: 82) aptly quotes column XXXVII of book XIV where Epicurus says, in reference to Plato's theory, ἀλλὰ γὰρ καὶ τούτῳ γελοίως ἐκ τῆς φαντασίας ἀναλελογισται. We shall see how Epicurus concedes in IΙΙΟ XIV that the πάθη produced by the στοιχεῖα do correspond to the shapes Plato attributed to them. Epicurus seems to be saying here that sensation, far from supporting other theories such as Plato's, in fact supports Epicurus' theory that it is the shape of the συγκρίσεις, rather than the shape of the elements themselves, that produces the diversity of things we experience with our senses. It is Epicurus' own theory, not Plato's that is supported by sensation.

Epicurus' criticism of the monists' system of condensation and rarefaction, and of the examples given to support such a theory, seemingly occupied, then, at most five columns (XXXI, XXXII, XXXIII, XXVII, XXVIII) of our roll. To these should be
added six or seven columns of polemic against Plato (XXXIV, XXXV, XXXVI, XXXVII, XXXVIII and the column or columns lost ahead of column XXXIV, below note 219). The columns actually attacking earlier thinkers’ δόξα amounted to approximately 11 or 12 columns, a very small proportion of the whole book. These columns were not, in my view, part of (a) a systematic and comprehensive elimination of earlier views, as found in Lucretius, and presumably his source, but rather (b) polemic against opponents which was incidental to Epicurus’ own exposition.

2.1.2 Epicurus did not discuss Heraclitus’ theory in detail in ΠΦ XIV

We have seen above that, although it is possible that Lucretius singled out Heraclitus as a typical physical monist, it seems more likely that Lucretius’ source had already singled out Heraclitus’ fire monism as the monist theory to be attacked.215

Epicurus did not single out fire monism as the exemplary form of monism to attack in detail. He attacks the monist use of condensation and rarefaction, but the examples he uses suggest that he has in mind thinkers who proposed water or air as their primary substances. There is no mention of Heraclitus’ theory in Epicurus’ confutation of monism in ΠΦ XIV.216

215 Above pages 63-65.

216 Anaximenes is not mentioned by name in the text. It is perhaps more likely that Epicurus had Anaximenes in mind here rather than Diogenes of Apollonia. It is conceivable that he was thinking of both, and perhaps others.
A further point seems worth making in this context. Lucretius’ arguments against Heraclitus do not resemble at all Aristotle’s arguments against fire-monism in De caelo Γ. 5. 305b28 - Γ. 8. 307b24,\(^{217}\) but Epicurus’ refutation of Plato in IIΦ XIV makes extensive use of the arguments in Aristotle’s De caelo (below pages 208-212). It would be strange for Epicurus to disregard the remarks on fire-monism in De caelo and then borrow extensively from the remarks against Plato, which immediately follow the refutation of fire-monism.

It is unlikely that Heraclitus’ theory had been discussed earlier in the book, before Epicurus’ introduction, or justification, of his polemic.\(^{218}\) It is also unlikely that Epicurus would have attacked Heraclitus on condensation and rarefaction, as Lucretius does in DRN 645-664, and then the general theory of condensation and rarefaction in monism, in the very same book.

2.1.3 Epicurus did not confute Empedocles’ theory in IIΦ XIV

It implausible, in my view, that Epicurus confuted Empedocles in book XIV. Measurement of the sezioni indicates that there was no space for a full discussion of Empedocles’ theory between the columns dealing with air-monism and those dealing

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\(^{217}\) The situation is similar with Aristotle’s arguments against Empedocles in De caelo, which are not paralleled in Lucretius.

\(^{218}\) Capasso (1987: 68) seems inclined to think Heraclitus was criticised in book XIV, although his “a partire dal libro XIV” is not very clear and could imply the criticism came in any book later than XIV.
with Plato. It looks as though one column of the ‘preserved’ section of *PHerc*. 1148 is lost between column XXIX and column XXXIV, the first column dealing with Plato.\(^{219}\) In the lost column Epicurus probably introduced his criticism of Plato’s doctrine. Even if the lost column did introduce Empedocles, there was certainly not enough space to contain a refutation of Empedocles comparable in scale to Epicurus’ refutation of monism and Plato, or indeed to Lucretius’ confutation of Empedocles in *DRN*.

Sedley’s argument (1984: 385, note 12) that in IIΦ XIV Epicurus *ended* his criticism of the limited pluralists with Plato is suspect. Plato’s theory was the *only* form of limited pluralism refuted by Epicurus — although others were alluded to — in IIΦ XIV, unless we are to suppose that Epicurus criticised other limited pluralists before he dealt with the monists. That Epicurus criticised Empedocles after Plato is highly unlikely, given that Plato was chronologically later and held a theory which was an elaboration of Empedocles’. Any sources that Epicurus might have consulted, and particularly Theophrastus,\(^{220}\) would have considered Plato after Empedocles.

In column XXXIV Epicurus makes reference to, and criticises *en passant*, other limited pluralists. Arrighetti argues that Empedocles is Epicurus’ target here, and finds

\(^{219}\) Probably one column is lost, possibly two. The first clear *sezione*-break in *cornice* 9 comes after *circa* 28.50 mm (but there is a stretch of fabric ahead of it, so that the first *sezione* of the *cornice* may have been wider), while the last *sezione* in *cornice* 7 measures *circa* 33.5 mm. Column XXVIII in *cornice* 7 is unsurprisingly covered by a big *sovrapposto*. This is almost certainly from the lost column (or one of the lost columns).

\(^{220}\) See below 2.3.
a verbal parallel between Epicurus’ text and Lucretius’ critique at this point:

tοὺς]

ὀρίζοντας σχῆμα π[υρ]ός ἵ-

διον ἢ γῆς ἢ ὑδατος ἢ ἀέρος,

ὅτι γελοιότεροι εἰσὶ τῶν οὐκ ὀ-

ριζόντων μέν, κατὰ δὲ τὰς

παραθέσεις ὁμολογησάν-

τ[ων] ἂν ἢ ἐκουσίως ἢ ἀκου-

σίως γινεσθαί τινα σχημά-

τ[ων] ἰδία εἶδη καθ’ ἐκάστην

οὐ̣[υ]σιώδη ρηθείσαν ἂν σύγ-

κρ[ισιν]. οἱ μὲν γὰρ τοῖς μὲν

στ[οιχείο[ι]ς ἀμαρτάνουσιν,

ἀ]κόλουθον δὲ τι τούτοις

μ[ᾶλλον, οὐ]τω λέγοντες,

λέ[γοιεν ἂν καὶ ὅλως δὲ τήν

tα[ῖς με[ξεσι[ν] παραλλαγῆν

ο[ὐ]δὲ πρὸς τ[ [...] τι [...] δι-

[ään σχημ[μέτων ἦ[ [...]
Epicurus criticises heavily those who attribute an ἴδιον σχῆμα to the four elements, i.e. Plato, and at the same time, but to a lesser extent, those “who allow whether intentionally or not, that there are in mechanical mixtures certain specific kinds of forms corresponding to each compound that would be called essential. For ὅλ μὲν get it wrong about the elements, but by saying this [that there are specific shapes for such compounds] they would be saying something which is in line with the elements”. The sense is clear up to this point: ὅλ μὲν of line 10 refers to the second group of thinkers. The interpretation of what follows is difficult, especially if one takes, as editors do, [λέγοιν as governing ὑν [τὰ]ίς μεῖξεσι[ν] παράλλαγην, with the meaning “would be endorsing the difference according to mixture”. I doubt that one should have

221 This seems preferable to taking the two occurrences of κατά and accusative as explaining one another: “... there are certain specific kinds of forms for juxtapositions (παραθέσεις), for each compound that would be called essential (οὐσιώδης σύγκρισις)”.

123
a full stop at the end of line 15. It seems more likely that the verb governing παραλλαγὴν came in the remainder of the column, after line 16.

It makes a considerable difference whether one restores [οὔ]δὲ, with Hayter and Gomperz, or [οί] δὲ, with Arrighetti and Leone, to line 16. If one reads [οί] δὲ a stop should probably be placed after ἄν in line 14, and with [οί] δὲ in line 16 Epicurus would be returning those who “assign a shape to fire or earth or water or air”. But if one reads [οὔ]δὲ, as the space on the papyrus perhaps suggests, the remainder of the sentence still dealt with those who think that there are shapes for each [οὔ]σωματικὸς ὁμοθετείος ἄν σύγκρισις. Perhaps the meaning was something like “and they would endorse the difference [in shape] because of mixture and would not try to explain the world through the shapes [of the four στοιχεῖα].” The point Epicurus is making against Plato is perhaps that it is ridiculous to assign shapes only to the four elements (as shown by the fact that these take up different shapes under different conditions); other quadruple pluralists saw the advantages of giving a specific shape to compounds (presumably of the four elements) which are ‘elemental’

The term παράθεσις in line 5 of column XXXIV suggests a mechanical mixture of elements in which they do not lose their peculiar characteristics, although they mingle together (Arrighetti 1973: 605). Arrighetti refers to Empedocles DK B8, and DK A28, A34, A43, A44 for Empedocles’ view that the elements do not change when coming together, and notes that DRN I 740 “ricalca pari pari” lines 10 and 11 of column

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222 Schmid (1936: 18) proposes that Epicurus had Aristotle in mind, on the grounds that οὕσῃ σύνθετος σύγκρισις is the same as Aristotle’s οὕσῃ σύνθετος. This suggestion is unconvincing because there is no
It would helpful for determining whether Empedocles was Epicurus' target in this part of column XXXIV to establish the meaning of ὀὐσιώδης σύγκρισις here. Long (1977: 78) suggests that Epicurus uses ὀὐσιώδης σύγκρισις to refer specifically to a class of compounds which are "elemental", and that such compounds are the same as the 'cosmic seeds' which make up the world and as the συστροφαί of Ad Herodotum 73, with which he compares DRN II 154. Long thinks that the basic material from which the world grows are atomic nuclei, referring to DRN V 429-431 as showing that the exordia are aggregates (convenient convecta in 429), and not atoms. That Epicurus adopted a theory of molecules seems likely, but I wonder whether the term ὀὐσιώδης σύγκρισις could have been a technical term to refer to a specific class of elemental compounds in his own theory. The expression ὑθείσα ἄν does not point in this direction.

It is not clear what ὀὐσιώδης σύγκρισις could denote in Empedocles' own hint that it is the combination of form and matter that is at issue here.

223 It is also worth noting that in column XL of book XIV Epicurus mentions Empedocles in the context of a thinker aspects of whose theory one might borrow (Leone 1984: 63). See further below pages 331-337.


225 Above pages 105-110.

226 Fragment 18 of ΠΦ XV (below pages 169-170), where the same expression should probably be restored, also suggests that Epicurus is reproducing the terminology of other thinkers.
theory. And there seems to be a problem with attributing a theory involving specific shapes to Empedocles.\textsuperscript{227} There is no evidence to show that \(\chi\eta\mu\alpha\tau\alpha\) had a role to play in Empedocles’ theory, although Epicurus’ \(\eta\ \epsilon\kappa\omicron\upsilon\sigma\iota\varsigma\ \eta\ \epsilon\kappa\omicron\upsilon\sigma\iota\varsigma\omega\varsigma\) may mean that he is inferring.\textsuperscript{228} The basis for seeing Empedocles as Epicurus’ target (along with Plato) in column XXXIV is not altogether solid.

Even assuming that in column XXXIV Epicurus is referring to Empedocles, the verbal similarity between Epicurus and Lucretius does not extend to the wider context,\textsuperscript{229} since the former is emphasising that such thinkers had a positive contribution to make to the problem of how matter is formed, while the latter praises Empedocles, as we shall see in chapter 4.4 below, for completely different reasons.

To return to the order of opponents in Epicurus’ treatment, the fact that Plato is considered almost immediately after air-momism, comes close to ruling out the possibility that Epicurus had, or intended to have, a comprehensive list of theories on the \(\sigma\tau\omicron\iota\chi\epsilon\iota\alpha\), arranged according to the number of principles. It also comes very close to

\textsuperscript{227} Arrighetti tries to solve the difficulty by taking \(\iota\delta\iota\nu\varepsilon\iota\delta\varsigma\) as “carattere particolare” rather than form, but, as Professor Sharples points out to me, since they are \(\chi\eta\mu\alpha\tau\omega\nu\iota\delta\iota\alpha\varepsilon\iota\delta\varsigma\), that does not really help.

\textsuperscript{228} Aëtius I. 13 (quoted above, note 117) speaks of \(\theta\rho\alpha\omega\omicron\mu\alpha\tau\alpha\) “fragments” in relation to Empedocles, but still there is no suggestions he assigned specific shapes to elements or mixtures. There is also DK B73 (quoted below, note 644), where Kypris/Aphrodite is presented as \(\varepsilon\iota\delta\iota\alpha\\pi\omicron\pi\nu\upsilon\omicron\upsilon\sigma\alpha\) but this does not seem enough to assume that Empedocles had a theory of specific shapes.

\textsuperscript{229} If this expression by Epicurus, or a similar one elsewhere in his works, inspired Lucretius’ line, it is interesting to note how he rendered \(\acute{a}m\alpha\tau\acute{a}n\omicron\nu\omicron\upsilon\upsilon\nu\) with \textit{facere ruinas}.
ruling out that Epicurus set out a category of limited pluralists. Even admitting that
Epicurus singled out Plato as representative for the limited pluralists category, the
space dedicated to limited pluralism would be disproportionately small, not much more
than 8 columns, if we assume that criticism occupied the whole of book XIV. It is
conceivable that Epicurus attacked Plato in book XIV simply because of the popularity
of the account of the elements in *Timaeus*, without referring to the limited pluralists
as a specific category. The fact that Epicurus did not set out a category of limited

230 This would be problematic in that it would make Plato a representative physicist, which he clearly
was not (above pages 78-79).

231 Simplicius’ list in *In Phys.* is worth comparing, although it is not clear how closely he reproduced
Theophrastus. In *C.A.G.* pages 24-29, excluding the clearly non-Theophrastean material, the monists occupy
about 25 lines, the limited pluralists 22 lines of which however 6 are quotation of Empedocles, and therefore
considerably shorter (excluding Plato and the Pythagoreans who take up 26 lines and bring the total up to 48),
the unlimited pluralists receive 32 lines (excluding the atomists who take up 28 lines and make the total for
the category 60 lines).

232 Plato in *Timaeus* 55A-56C assigns shapes to the four elements. Epicurus was entering a debate
with Plato. Sedley (1998: 106, note 38) thinks Epicurus’ criticism in column XXXVII of book XIV is more
likely to be of *Timaeus* 31B-31C, than (as Leone thinks following Schmid) of 56E on “elemental
intertransformation”. Schmid’s interpretation seems preferable. *Timaeus* 60A is interesting ἀ νδό το ν εἶ δη
με μει γι μέ να ἀ λλή λοις — σύ μπαν μὲ ν ὁ γέ νος, διὰ τῶν ἐ κ ἡ γῆς ὑ πό ρων ἡ θεμέ να, χυμοί λεγόμενοι — διὰ δὲ
tὰς μειξείς ἀ νομοιότητα ἐ κα στοι σχόντες τὰ μὲ ν ἄ λλα πολλά ἀ νώνυμα γέ νη παρέ ṣχοντο, τέ τταρα δὲ, δος ἐ δυμπ ρα εἴ δη . . . Epicurus would have argued instead
that the molecules had a specific shape.

127
pluralists makes it unlikely that Epicurus reproduced the ‘standard’ Aristotelian\textsuperscript{233}–Theophrastean division into three categories (monism, limited pluralism, unlimited pluralism), the division adopted in Theophrastus’ ΦΔ and in Lucretius’ critique.

2.1.4. Book XV was not dedicated to criticism of Anaxagoras

Sedley suggests that ΠΦ XV was dedicated chiefly, if not completely, to Anaxagoras’ theory. A preliminary objection to this suggestion, one which Sedley mentions, is that the amount of space reserved for criticism of Anaxagoras’ theory seems disproportionate. We have seen above how in book XIV Epicurus’ criticism of Plato’s theory only took up six or seven columns of book XIV, and criticism of the (air-)monists approximately five columns.\textsuperscript{234}

Let us now consider the format of \textit{PHerc}. 1151, which contains the remains of ΠΦ XV. The total number of columns for this roll would have been between 150 and 190.\textsuperscript{235} It is very difficult to determine the exact number of columns of the ‘preserved’ portion of \textit{PHerc}. 1151, because of the uncertainty concerning the layers we are reading from. Letters, and groups of letters, from the same column are often attached to a layer

\textsuperscript{233} Although Aristotle does not set Empedocles (limited pluralist) and Anaxagoras (unlimited pluralist) sharply apart in the \textit{Physics} he does recognise a category of unlimited pluralists with principles differing in kind (184b21-22) and it is hard to imagine that these are not Anaxagoras and Archelaus.

\textsuperscript{234} Above pages 118-119.

\textsuperscript{235} See Appendix (b), pages 403-404.
of the roll different from the one they belong to. A reasonable guess, judging from the decline in size of the *sezioni* in *PHerc.* 1151, is that we are reading the remains of 34-38 columns.

Sedley (1998: 126) gives the two following alternative topics to fill up the preceding, lost, parts of ΠΦ XV, which occupied well over 100 columns of text: (a) continuation of the ‘methodological issues’ with which ΠΦ XIV concludes; and (b) discussion of Pythagorean physics, which was taken to be a species of infinite pluralism. Suggestion (a) is unlikely because it seems natural to read the conclusion of book XIV (column XLIII . . . παντελῶς ήσουχίαν ἐχέτωσαν) as the last word on the matter. As for (b), it is improbable that the Pythagoreans’ theory would have been considered a species of unlimited pluralism. Simplicius in his commentary on Aristotle’s *Physics* lists the Pythagoreans as limited pluralists.

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236 Circumferences can be measured in *cornice* 2 at roughly 118 mm and 116 mm. In *PHerc.* 1148 (ΠΦ XV) a circumference of 98 mm can be seen in *cornice* 4: 27 columns of text followed. Leone (2002: 12, note 36) reports that in *PHerc.* 1431 25 columns fitted in a decline in *sezioni* of 27.5 mm. However one should take into consideration that the width of the columns in *PHerc.* 1431 is only 4 cm, one of the lowest in papyri from Herculaneum (Leone 2002: 22).

237 Sedley (1998: 126, note 87) cites Sextus Πυρρώνειον Ττοτυπώσεις III.32. The position of the Pythagoreans in Sextus’ list suggests that he took them to be unlimited pluralists. Assuming that Epicurus would have considered the Pythagoreans limited and not unlimited pluralists, they could still have occupied the earlier part of book XV (since they postulated more elements than Plato), but the division between book XIV and book XV would not then have corresponded to a major division in the classification between limited and unlimited pluralists. On whether the Pythagoreans would be considered ‘physicists’ at all, below page 207.
The fragments suggest that ΠΦ XV, or at least the final part of it, treated atomic compounds, and in particular the creation of animate beings. In this context Epicurus seems to have ruled out divine intervention. He seems then to have proceeded in the closing section of the book (cornici 7-8) specific aspects of human behaviour, some of which related to their understanding of the soul and of the gods. It cannot be positively ruled out, given the nature of the evidence, that Epicurus brought in Anaxagoras in book XV, but there seems to be a more likely reading of at least some of the fragments which have been interpreted as references to Anaxagoras.

2.1.4.1 Cornice 2

Fragments 5-9, which are preserved in cornice 2, are as far as one can tell, the ‘readable’ fragments which came earliest in PHerc. 1151. Let us start from fragment 7, which has been read as a report of Anaxagoras’ theory because it contains a form from the ὅμοιομερ- root.

Words from the same root appear again in book XV, in fragments 23 and 25. Sedley (1998: 124) seems certain that all the occurrences of such forms in our book refer to Anaxagoras. Rösler, on the other hand, thought that Epicurus used the word without

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238 This confirms the report in the scholiwm to Ad Herodotum 40; above note 187.

connection to Anaxagoras; and Schrijvers (1999: 49-50) takes a similar line. Neither Rösler nor Schrijvers give reasons for their inference, but they may be right that Epicurus did not use the ὀμοιομερή-forms in connection with Anaxagoras. Epicurus certainly employed the terms ὀμοιομερής/ἀμοιομέρεια in his own theory, as part of his theory of aggregates.

My reading of fragment 7 is as follows:

. . . ἐκ τῶν περὶ τὰς . . .
. . . Ἰσις ὑπαρχόντων σχημάτων αἱ διάφοροι συγκρίσεις γίνονται: τὸ δὴ μὴ . . . . ἐν ὀμοιομερεῖς δικοῦς λὴγειν εἰς ἐκλ.-


241 An objection to this suggestion is that if Epicurus used ὀμοιομερεῖα of his own theory and Lucretius knew that he had, it seems odd that he would have presented the term as an outlandish one in line 830. It seems unlikely that Lucretius, assuming he knew IIΦ, did not know of Epicurus’ usage. And the same would probably hold true for Lucretius’ source. It is conceivable, however, that Lucretius was aware that Epicurus used the term of his own theory, but did not consider this an obstacle to treating the term as outlandish in the context of Anaxagoras. It is possible, as we shall see, that Epicurus used the term also in connection with Anaxagoras in fragment 25, where he seems to be distinguishing two kinds of ὀμοιομερεῖα (below pages 177-179).
1 it is impossible to decide between π and γ because only the left part of the letter survives; there may be traces of ink following μη, if that is the case one should probably read μηδ[ενους 5] . v. εινv with the lower part of the letters rubbed off; traces may suggest ο but are inconsistent with ω because ω is never written higher up in space than v, the vertical of the supposed ω would slope to the right and too little space is left for the following v.

Arrighetti (1973: 279 and 611) tentatively suggests ποικίλων | σχημάτων at the start of the fragment — in line 1 and the line ahead of it, which came in the previous column — as subject of υπαρχόντων. He is probably right to restore “shapes” to the passage, and his κατ εξ 6 πων in line 3 is possible, but it is perhaps easier to restore σχημάτων to line 3.

Arrighetti (1973: 611) thought that Epicurus mentioned the shapes of the atoms (rather than of compounds) as one of the reasons which made the aggregates different,
referring to four passages in support of his interpretation: (1) *Ad Herodotum* 42, (2) Aëtius I. 3. 18, (3) Cicero *De natura deorum* I. 66,\(^{242}\) and (4) and *DRN* II 333-477. Passage (1) certainly says that there could not be such a great difference in compounds as there is, were the atoms not different from one another in shapes (in a language not dissimilar to that of fragment 7 of book XV). In (4) Lucretius refers, it would seem, to only four shapes (*hamata, levia et rotunda, angellis paulo prostrantibus* and *acuta*), although he seems to allow for variation in degree between these. The shapes referred are probably just by way of example, since the number of shapes is beyond reckoning. Lucretius (and presumably Epicurus) did not set out to give a full account of the shapes of the atoms, since the atoms are beyond the kernel of the senses. The discussion is driven by phenomena.\(^{243}\) The shape of the atoms themselves clearly goes some way in

\(^{242}\) *Ista enim flagitia Democriti sive etiam ante Leucippi, esse corpuscula quaedam levia, alia aspera, rutunda alia, partim autem angulata et hamata, curvata quaedam et quasi a dunca, ex his effectum esse caelum atque terram nulla cogente natura sed concursu quodam fortuito — hanc tu opinionem, C. Vellei, usque ad hanc aetatem perduxisti, priusque te quis de omni vitae statu quam de ista autoritate deiecerit* (Plasberg 1933: 25). Plasberg prints “et hamata”, which is his own conjecture, following Marsus 1507 “hamata” and Diels “vel hamata”. A G\(^1\) P\(^1\) read “firamata”; D G\(^2\) H “foramata” Pc “firmata”; N “ipiramta”; O “piramata”; *om.* B. It is also noteworthy that A C N and P omit “curvata”. Mayor prints *partim autem angulata <et> pyr<am idata>, hamata quaedam et quasi a dunca . . .* 

\(^{243}\) From *DRN* II 398-407 it appears that different fluids are made up of different atoms: fluids which taste pleasant are made up of *levia* and *rutunda*, those which taste rough *magis hamatis inter se nexa teneri* (405). It looks as though the shape of the atoms is here connected to the way they are joined to one another (*inter se*). It seems clear, however, the shape of the atoms is connected to the sensation they produce in us.
explaining the nature of compounds. Text (3) only helps in that it is a parallel for the shapes given in Lucretius, it does not link the differences in atomic shapes to the characteristics of the compound. I find text (2) puzzling: εἰναι δὲ τὰ σχήματα τῶν ἄτομων ἀπερίληπτα, οὐκ ἀπειρα. μὴ γὰρ εἶναι μὴ ἁγκιστορεἰδεῖς, μήτε τριαινοεἰδεῖς, μήτε κρικοεἰδεῖς. ταῦτα γὰρ τὰ σχήματα εὕθραυστὰ ἐστίν, αἱ δὲ ἄτομοι ἀπαθεῖς, ἢδη δὲ ἔχειν σχήματα λόγωι θεωρητά. This, if correct, would rule out that Epicurus was referring to the shape of the atoms in e.g. Ad Pythoclem 109,244 indeed it would show that Cicero’s and to some extent Lucretius’ account are inaccurate.

It is possible that Epicurus was thinking of the shape of atoms rather than of that of compounds in fragment 7, and that πρῶτας φύσεις should be supplied in lines 1 and 2. Support comes from μὲ]χρι τῶ[ν πρ]ῶτων φῶ[θων] . . . (Arrighetti [34] [22] lines 11-12), and especially Arrighetti [26] [24] lines 2-5: ἀλλὰ τῆς καὶ περὶ τὰς πρῶτας φύσεις δυναμένης ἂν ὑπάρχειν . . .245 But one cannot rule out altogether that Epicurus wrote something else, conceivably πάσας φύσεις or πάσας

Lines 408-443 similarly indicate that as far as sound, smell and colour are concerned, round atoms please the senses, hooked ones cause pain (there are also atoms which are neither hooked nor round, but have projecting angles (angellis paulo prostrantibus)). In lines 444-477 Lucretius reports things which exhibit a hard texture are made up of hamata et quasi ramosa, while things which are liquid of levibus atque rutundis, and all things which you see disappear in an instant (such as smoke, clouds and flames) are non e preplexis sed acutis elementis.

244 Above note 205.

245 From PHerc. 687-1056-1191 (ΠΦ XXV).
What seems indisputable is that Epicurus in fragment 7 used ὀμοιομέρεια in the context of what determined different compounds. The δὴ in line 4 suggests that the sentence starting in that line confirmed what was said in the previous sentence. As for the next word in the line, it seems unlikely that this could be μὴ[ν] since it has a similar meaning to δὴ.

According to Arrighetti Epicurus used ὀμοιομέρεια to refer specifically to ‘similarity of parts’, i.e. similarity in shape, between atoms and compounds. I think Millot is probably right to reject this. It seems unlikely that Epicurus would want to emphasise the similarity between shape of the atoms and shape of the compound, although, assuming Lucretius represents him accurately, he certainly allowed for a relation between the shape of the atoms, and the effect produced on the senses by the compound (above note 243). There seems to be no evidence for Epicurus, or Lucretius, expressly stating “similar parts” for the visible compounds and atoms that go up to make it. Visible compounds do not always have the same shape as their constituent atoms: fluids are not always round in shape (DRN II 398–407), though their drops sometimes are.

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247 It is uncertain, as Millot (1977: 27, note 17) notes, whether the word ὀμοιομέρεια in line 5 was a plural or a singular.
Arrighetti based his interpretation of ὀμοιομέρεια in fragment 7 of ΠΦ XV on column XXXIX of ΠΦ XIV:

. . . . οὐ πάντως ἄλλοτρι-]

ον τ[οίς] πάθεσιν ἔστιν τοῖς

ὑπὸ τῶν τεττάρων τοῦ-

tων στοιχείων γινομέ-

νοις ὁ ἀποδίδωσιν σχῆμα,

μάλιστα μὲν καὶ τὸ πρῶτον

ἐκάτερον, ἐι δὲ μὴ, τὸ γε ἦ-

δὴ τὴν ὀμοιομέρειαν τῶι

φαινομένωι κεκτημέ-

νον. ἄλλα γὰρ ταῦτα μὲν

αὐτοῦ κατεστρέφθω.

Epicurus concludes his criticism of Plato by granting that the shapes Plato attributes to the four elements do in fact correspond to the πάθη which the elements produce on
It seems correct to assume that the first word, ending -ον, was ού πάντως ἀλλάστριον, or the like, and to translate: “the shape which he [Plato] attributes to the four elements is not wholly dissimilar from the sensations produced by these elements, especially the first two, or if not, that which has already acquired similarity of parts to what appears to us”.

Epicurus thought that the correspondence between the σχῆμα Plato attributed to the elements and the πάθος the elements produced was particularly evident in the case of pyramid (fire) and cube (earth). According to Arrighetti (1973:609) πρῶτον ἐκάτερον in lines 5-6 refers to the first two elements in the list of four in column XXXIV, a list which reproduced the one in Timaeus 55D. It is perhaps more natural to take τὸ πρῶτον as part of a pleonastic “μάλιστα . . . καὶ τὸ πρῶτον”. The meaning “each of the first two” can be extracted from ἐκάτερον alone. This is forced, 

248 This supports Sedley’s suggestion that Epicurus’ attitude to his predecessors was not as negative as later sources lead us to believe (above page 49).

249 The term στοιχεῖον is important in this section of the book. Wigodsky is probably right in suggesting that in the following section Epicurus is ‘justifying’ his borrowing of the term στοιχεῖον from Plato. The different way of using στοιχεῖον provides a neat connection to columns XXXIX(end)-XLIII (where Epicurus to discuss his borrowing of terms used by earlier thinkers).

250 This might help in the reconstruction of Epicurus’ discussion of the earth and the cube, of which only the beginning is preserved, and in a very fragmentary state.

251 This is the order in Plato’s initial list, although Plato changes the order in the subsequent discussion. It may also show that Epicurus had in mind 31b-32c where Plato makes Timaeus argue that fire and earth must exist, and then produce an argument that if these exist the other two ‘elements’ must do so as well (see FHS&G 161 A-C).
but none more so than taking πρῶτον ἑκάτερον together.

It looks as though Epicurus was thinking in terms of a σχήμα, γε ἡδή τὴν ὁμοιομέρειαν τῶι φαινομένωι κεκτημένον. According to Arrighetti this is the pyramidal shape, which possesses “similarity of parts” to fire as it presents itself to us (τῶι φαινομένωι). He (1973: 609) points out that in column XXXVI Epicurus had already implied that a pyramidal shape is the shape fire assumes under certain conditions (although it can take up different shapes under different conditions):

σ]χημάτων[v] τ[οίς] λοιποῖς
στοιχείοις κατὰ τὰ φαινό-
μενα αὐτῶν εἶδη ταυτεί· ἀλ-
λ'. οὐχὶ μόνον, εἰ ἄρα, ἐπὶ τοῦ πυ-
ρῶς ἄν τοιαύτην τις φαντα-
σία σχήματος οἰαν ἐκεῖνος
ἀποδιδωσίν ποτὲ δόξαι
γίνεσθαι, οὔδε αὕτη αἰεῖ,
οὔδὲ περὶ πάσαν φύσιν πυρός,
ἄλλα περὶ τὴν αὐτῆς [ϕ]λ[ο]-
γός, κα[λ] ταύτην ἐμ ποιαῖ τ[ι]-
νι τοῦ [π]εριε[χοντο]ς κατα-
στάσει. ἐπὶ [δ'] ἢ[δη ταυτ[ι]]
φερόμενος, [ἐν]ίστε δοικ[ε][v]

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There seems to be no indication that atoms that go to make up fire are themselves pyramidal in shape: this does not appear to be what Epicurus had in mind, since it seems likely that the atoms making up fire would have the same shape whether fire was a flame or not. Epicurus would not want to emphasise similarity in shape between atom and compound, so that the appearance of one could resemble that of the other. The whole emphasis of the atomic theory is on the fact that atoms do not themselves have all the properties that they cause compounds to have. The treatment of fire-particles in *DRN* II 381-387 suggests that they come in different sizes, but is silent about any difference in their shape.

In column XXXVI of *ΠΦ XIV* Epicurus is doing no more than granting, perhaps for the sake of argument, that flames have a triangular shape. It looks as though with the expression *φαντασία σχήματος* Epicurus is here referring to the shape of the aggregate, and not the atoms themselves. It is the arrangement of atoms which determines the pyramidal shape of the flame.
It is not easy to see how a σχήμα could have already acquired "similarity of parts" to τὸν φαίνομένον. Millot (1977: 28) rejects Arrighetti's suggestion that ὧμοιομέρεια refers to the identity between the elementary form of the atoms and that of the compound, but has "son sens habituel, conforme à son emploi aristotélicien et anaxagoréen: ce qui a déjà la même composition que ce qui apparaît c'est-à-dire ce qui est déjà la corps consité, l'aggregat, et non plus la série d'atomes". This explains adequately the presence of ἥδη, but seems to require taking the expression to be referring to στοιχείον rather than σχήμα. This only seems possible if we have an accusative of respect: "especially as far as the first two elements are concerned, or if not, at least as far as every element which has acquired τὴν ὧμοιομέρειαν τῶν φαίνομένων".

The σχήμα could be that of a molecule which has acquired the shape of the whole aggregate. Epicurus is probably referring to the level at which individual atoms turn to a compound-resembling molecule. The ἥδη seems to imply a contrast between the primary, basic, particles, and a later stage, when the atoms have acquired similarity to the element as it appears to us.

There are other occurrences of ὧμοιομέρ- words in Epicurus to be discussed at this point, before coming back to the interpretation of ὧμοιομέρ- in fragment 7 of book XV. The noun ὧμοιομέρεια occurs in ΠΠ 252 (Arrighetti [24] [33] lines 2-3). 253

252 Pherc. 1149/993.
253 Compare Ad Herodotum 56 (quoted above, page 142).
Reading αὐτήν in line 2 would give the sense “the same homoiomereia” which sounds redundant and perhaps objectionable. Alternatives are δῆτον τήν, or possibly οί τήν. Epicurus is discussing how the εἴδωλα have the same characteristics as the solid body they come from. The topic is treated elsewhere in the book, in fragments 11 and 19, and in Lucretius DRN IV 46-52. It looks as though ὁμοιομέρεια in fragment 33 explains how the εἴδωλα reproduced the qualities of the bodies they come from (“having the same parts, same structure” as those). In particular the word seems to refer here to having the same parts, meaning a shape recognisable to the eyes. It looks as though in Epicurus, contrary to what Democritus had thought, images had secondary qualities, so that they could reproduce the compound they come from; images certainly

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254 “Proprietà dei simulacri di riprodurre le stesse caratteristiche del corpo solido da cui provengono”.


256 Presumably because whereas Epicurus holds all sensation is true, Democritus based his scepticism in part on the idea that sensation was the result of an interaction between the images and our eyes (Avotins 1980: 453).
appear to have the same colour as the bodies they come from in Ad Herodotum 49.\(^{257}\)

In Ad Herodotum 52 the adjective ὀμοιομερεῖς describes the ὑγκοὶ into which sound streams dissipate: . . . . . . τὸ ῥέουμα τοῦτο (the sound-stream coming from person or object which produces hearing) εἰς ὀμοιομερεῖς ὑγκοὺς διασπέρεται, ἀμα τινὰ διασώζοντας σύμπαθειαν πρὸς ἄλληλους καὶ ἑνότητα ἰδιότροπον, διατείνοουσαν πρὸς τὸ ἀποστείλαν καὶ τὴν ἐπαίσθησιν τὴν ἐπ’ ἐκεῖνον ὡς τὰ πολλὰ ποιοῦσαν, εἰ δὲ μὴ γε, τὸ ἐξωθεῖν μόνον ἐνδήλων παρασκευάζουσαν.

. . . . The idea could be either (a) that each ὑγκός contains only one sort of atom and they are therefore internally uniform or (b) that ὑγκοὶ reproduce each other (“have same parts as”) each other, or (c) that the ὑγκοὶ have ὀμοιομέρεια, in the sense that they reproduce the characteristics of their source. Interpretation (c) is the most attractive, since it is comparable to the use in ΠΦ II, and (b) might be implied in the idea of (c). The clause starting ἀμα seems evidence of (b) and (c) together.

That Epicurus used the word ὀμοιομέρεια in his own theory is also suggested by Aetius I. 7. 34: Ἐπίκουρος ἀνθρωποειδεῖς μὲν τοὺς θεοὺς, λόγωι δὲ πάντας θεωρητοὺς διὰ τὴν λεπτομέρειαν τῆς τῶν εἰδόλων φύσεως. ὁ δ’ αὐτὸς ἄλλως τέτταρας φύσεις κατὰ γένος ἀφθάρτους τάσδε, τὰ ἅτομα τὸ κενὸν τὸ ἀπειρον τὰς ὀμοιότητας· αὐτὰ δὲ λέγονται ὀμοιομέρειαι καὶ στοιχεῖά. In the second sentence (fourth word) I tentatively read, with Gassendi, ἄλλως in place of Diels’ ἄλλας. Obbink (1996: 331), who himself reads ἄλλως, reports that the “codd.”

\(^{257}\) This seems less obvious in the case of sound than of vision, but Epicurus thinks of the senses as alike, and one can compare DRN 553-556, especially 556 (vox) servat enim formaturam servatque figuram.
have ἄλλας. But it is clear from the apparatus in Diels that ἄλλως has manuscript authority.²⁵⁸

The passage seems to indicate that Epicurus used ὀμοιότητες and ὀμοιομέρεια in the context of unperishable existences. It is not completely clear what the αὐταί in the final sentence refers to. It probably refers just to ὀμοιότητες,²⁵⁹ rather than to all four of Epicurus’ everlasting φόσεις.

Obbink (1996: 331) suggests that the final sentence is a gloss by an exegete who misunderstood the theory, and that ὀμοιότητες “may be an abbreviated expression for συγκρίσεις or ἐνότητες ἐξ ὀμοίων”, as opposed to ἐνότητες ἐκ τῶν αὐτῶν.²⁶⁰ He

²⁵⁸ See Scott 1883: 231 (misprinted “1883, 321-332” in Obbink) and Giussani 1896: 261.

²⁵⁹ The word ὀμοιότης is also attested in Ad Herodotum 51; again in the context of discussion of vision. And ὀμοιότητες also occurs in ΠΦ ΧΧV (Laursen 1995: 103):

Assuming that the text is right, it looks as though τῶν ὀμοιοτήτων καὶ ἀνομοιοτήτων. 'En pléiosoi kai diaφόροις,


Assuming that the text is right, it looks as though τῶν ὀμοιοτήτων is something which can be formed. This makes me suspicious of Vogliano’s, Attighetti’s and Laursen’s view that [τῶν καὶ ἀνομοιοτης should be read in line 3.

²⁶⁰ Such a concept is known from lines 209-219 (Obbink 1996: 120), and 347-375 (Obbink 1996: 131), where the expression refers to the gods. The distinction Obbink operates between unities made up of
thinks that Aëtius has garbled the theory since not all ὄμοιότητες are everlasting, but only some which are called gods.

There is evidence for four everlasting existences in DRN III 806-827. In these lines Lucretius describes immortal existences the atoms (Epicurus’ ἄτομα) in 806-810, void (Epicurus’ κενὸν) in 811-813, the infinite (Epicurus’ ἀπειρὸν) in 814-818. Lucretius goes on to describe a fourth possible everlasting existence. Giussani (1896: 220-225 and 239-240) plausibly suggests that the gods were referred to in this passage starting with line 819, the specific reference being lost in the lacuna after 823. It seems unlikely that the lacuna simply mentioned that the possibility of a further undefined everlasting existence: it would be a rather long-winded way of making the point. 261

The alternative suggestions for the role of Epicurus’ further everlasting existence are unconvincing. Robin (Ernout-Robin 1925: 161 and 1928: 47-49), who thinks the ἀλλὰ ὡς shows that the redactor (perhaps Posidonius) was trying to expose an inconsistency in the Epicurean theory, reckons that the last item in the passage means “l’immutabilité spécifique, en un nombre infini d’exemplaires, de chaque figure

similar, and unities made up of the same particles seems to depend on his restorations in lines 210-219: ἀλλὰ καὶ τὰ συντελεῖαν | ἡν ἐκ τῶν συν] | ἐκ ὑπάρχον καθ’ ὅ | μειλίαν ἐνοτήτας | προσαγορεύεσθαι | τὰς μὲν ἐκ [τῶν δυντῶν] | τῶν αὐτῶν ἀποτελεῖ | λεισθαι, τὰς δ’ ἐκ τῶν | ὄμοιον . . .

261 In DRN V 351-363 (which are repeated with a few adjustments from DRN III 806-818) on the other hand Lucretius speaks only of three everlasting existences: atoms void and the infinite.

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atomique” referring to Aëtius IV. 9. 9,\textsuperscript{262} and to Epiphanius.\textsuperscript{263} But it seems very unlikely that Epicurus would think of shapes as an existence. Epicurus remarks explicitly in \textit{Ad Herodotum} 68b-69 that τὰ σχήματα are not καθ’ ἑαυτὰς φύσεις.

It is equally difficult to think that the reference is to the way in which the atoms came together and were kept together. There would be “similar parts” because the atoms tended to come together in a similar manner. This however seems dangerously close to saying that the shape of molecules is everlasting, which is open to the same objection as Ernout’s suggestion above. What is more Epicurus might not want to overemphasise the similarity between the structure of, say, every lump of earth given the constant influx and efflux of atoms, although he certainly stressed that there is sufficient similarity in compounds to give them the same overall character. And the use of στοιχεία, assuming it is not part of an erroneous gloss, hardly seems appropriate to refer to the way in which atoms combine.

All one can say is that the Aëtius passage shows that Epicurus used ὁμοιότητες, and perhaps ὁμοιομέρειαι, in his own theory, perhaps in the context of his fourth

\textsuperscript{262} D.G.: 397, lines 19-25: οἱ τὰ ἄτομα καὶ τὰ ὁμοιομερή καὶ οἱ τὰ ἁμερῆ καὶ τὰ ἐλάχιστα πάντ’ ἐν πάσι τὰ αἰσθητὰ ἀναμεμίχθαι καὶ μηδὲν αὐτῶν εἰλικρινὲς ὑπάρχειν, παρὰ δὲ τὰς ἐπικρατεῖας ὀνομάζεοθαι τοῖν ἡ τοῖν καὶ παρὰ τὴν πολυαύγειαν. This passage is confusing: it is unclear whether Aëtius is here referring to the atomists, or to Anaxagoras, or to both.

\textsuperscript{263} D.G.: 588, lines 1-3. Epiphanius (sometimes an unreliable source) writes: Ἐπικούρειοι ἄτομα καὶ ἁμερῆ οὐματα ὁμοιομερὴ τε καὶ ἀπειρα τὴν ἀρχὴν εἶναι τῶν πάντων ὑπεστήσαντο, καὶ τέλος εἶναι εὐδαιμονίας τὴν ἡδονὴν ἐδογμάτισαν, καὶ μήτε θεὸν μήτε πρόνοιαν τὰ πράγματα διοικεῖν.
everlasting existence, the gods, which were themselves compounds of a special kind (Giussani 1896: 240-241).

Let us now come back to fragment 7 of ΠΦ XV, having established that Epicurus used words from the ὅμοιομέρη-root often in his works, as part of his own theory. The context in which fragment 7 does not suggest that Epicurus was criticising Anaxagoras' theory of matter. The column of fragment 6 did not intervene between columns of fragment 5 and that of fragment 7. Fragment 6 is from a different layer of

264 Wigodsky (2004: 215-216), following Giussani (1896: 245-259), argues that Epicurus' gods were everlasting physical existences, rather than mere mental images referring to De natura deorum I. 50 and 109. In Cicero the gods' eternal existence is connected with the principle of ἰσονομία. It is thanks to the παλμοὶ (i.e. motions capable of creating or maintaining particular kinds of compounds) that the gods preserve their equilibrium indefinitely. It seems at least possible that the notion of ὅμοιομέρεια had a part to play in the description of self-preservation of the gods, with the idea that the parts were never altered: having similar parts the gods did not suffer degradation.

265 Millot (1977: 28) considers the possibility that ὅμοιομέρεια is here an Epicurean term meaning that up to a point division of bodies does not modify their constitution, as in book XIV (above page 140), but prefers to explain this occurrence by supposing that the column was part of a criticism "de la doctrine des homéomères d'Anaxagoras: la très grande diversité des corps sensibles interdit de penser que tous puissent avoir la même composition". It looks as though Millot envisages Epicurus to have criticised Anaxagoras on the claim (a) everything is made up of portions of the same thing (all things, or at least all stuffs, are equally fundamental), disregarding the claim that (b) ἐν παντὶ παντὸς μοῖρα. Anaxagoras' theory was as successful as any other in explaining different natures, given its ἐν παντὶ παντὸς μοῖρα aspect.

266 Numbered as fragment 4 of the papyrus in the cornice. I shall use the word 'section' to refer to the physical stretches of fabric in the cornici. This section of PHerc. 1151 measures 25 x 7 cm circa.
the roll. It is perhaps a (single) *sottoposto*, and therefore came from one circumference earlier in the roll than its present position indicates:

\[\nu\nu \n
view (and presumably explaining how atomic combinations in compounds could explain the particular behaviour or character of living beings). It is also conceivable however, that Epicurus is describing the kind of activity the gods do not partake in.

It may well be that the original position of fragment 6 was ahead of fragment 4:

\[\text{\footnotesize \begin{align*}
\text{να ἀποτελεῖ τα[ι...} \\
\text{οτροποὺς [...ν φ[...}. \\
\text{ς κεκτ[νέν]α[ς} \\
\text{— — — — — —} \\
\text{]οι πάσι[}. & \\
\text{...ούδ' ὡς ἔξ οὖν [}. & \\
\text{...]η πε...ικε...[}. & \\
\text{...]ν...η περατ...}. \\
\end{align*}\]

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1 να ἀπο Vogliano Arrighetti Millot  2 ὁμοιοτρόπους Vogliano οτρόπους Arrighetti Millot  3 κεκτ[ν Vogliano: κεκτι Arrighetti: ] κεκτη Millot  5 legi 6 ὡς ἔξ ὡν[ Millot  7...ηικει] Millot  8 νηπω Millot
The order of the fragments on the next section of the roll was 5, 7, 8 and 9. Fragment 5 reads:

ει] μὲν οὖν τις φιλοσοφῶν

πράγματα ἐ’ αυτῶι παρέχο[ι

ἀεὶ ἡς ἕτερη κα ἱδέας- πρ[ο-

ιόν]τος δὲ χρόνου εἶπερ τι τῷ[ν

ἐν]δεόντων πράττοι· λή[5

...αν [...]ο αιας ἀποθεω[ι

ινα

The expression ἐαυτῶι παρέχειν πράγματα suggests that someone is making life

267 The final two sezioni of this fragment measure 53 mm, the two previous ones circa 54.50 mm, so that not much (one column, or less?) was lost between the previous section (section 3), ending with fragment 4 (a sezione there measured circa 58 mm).
difficult for himself. Millot (1977: 27) is probably right in reading \( \varphi \iota \lambda \sigma \sigma \omega \phi \omicron \omega \nu \) as the participle of the verb, agreeing with \( \tau \iota \varsigma \), rather than as a genitive plural. Her reading is supported by the absence of the article.

Epicurus is describing, in fragment 5, different phases in someone’s philosophical development. Millot takes the first sentence to refer to a novice Epicurean ("néophyte"). It looks as though the \( \iota \delta \varepsilon \alpha \) which causes the person problems might derive from un-Epicurean beliefs (these may be down to an earlier thinker, or simply popular beliefs). It seems a safe inference that in the preceding section of the book Epicurus had been describing this troubling \( \iota \delta \varepsilon \alpha \). Millot (1977: 27) understands \( \iota \delta \varepsilon \alpha \) “\( \text{la forme, l’espèce} \), meaning life-conduct,” rejecting Arrighetti’s suggestion that \( \iota \delta \varepsilon \alpha \)

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268 Millot (1977: 26) quotes Diogenes of Oenoanda 34. I. 8 (= fragment 42 column III, lines 8-10; Smith 1992b: 223): \( \tau \iota \mu \acute{\alpha} \lambda \iota \varsigma \tau \iota \alpha \varepsilon \nu \tau \acute{\omega} \pi \alpha \rho \acute{\epsilon} \chi \epsilon i[z \pi \rho \acute{\epsilon}] \gamma \mu \mu \tau \alpha \). The context is a reproach to Empedocles and Pythagoras. To judge from Diogenes’ use, the expression seems more likely to refer to problems in philosophical argument.

269 Millot (1977: 26) is not persuaded by Arrighetti’s proposal that \( \varphi \iota \lambda \sigma \sigma \omega \phi \omicron \omega \nu \)-rooted words carry a negative connotation in Epicurus. Arrighetti refers to texts [29] [18] (line 3) and [37] [11] (line 9) as evidence, but Millot rightly remarks that in both cases it is the context that determines the negative connotation. She points to \( \text{Ad Menoeceum 122}, \) where \( \varphi \iota \lambda \sigma \sigma \omega \phi \omicron \epsilon \nu \) is applied to Epicurus’ own philosophy.

270 The expression \( \pi \rho \omega \acute{\omicron} \nu \tau \acute{\omicron} \varsigma \) \( \delta \varepsilon \chi \rho \omicron \omicron \nu \) (lines 3-4) no doubt indicates a later phase in the development of thought of the unspecified person.

271 Millot refers to a citation of Epicurus by Philodemus in Arrighetti text [81] τ\( \acute{\varsigma} \mu[\acute{\eta} \pi \rho \acute{\omicron}]\varsigma \varepsilon \iota \delta \alpha \acute{\mu} \omicron \alpha \) β\( \iota \omicron \) [\( \sigma \nu \)ντεινο\( \omicron \)\( \acute{\omicron} \) α \( \iota \delta \varepsilon \alpha \) το\( \omicron \) β\( \iota \omicron \)ν. 

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means “forme di ragionamento”. 272 “Form of reasoning” perhaps suits the tone of the fragment better, but there seems to be no need to sharply distinguish between the two, since reasoning would affect behaviour. A comparable theme comes up, as we shall see, in the fragments of cornice 8, where beliefs about the gods are discussed.

Millot is convinced that the apodosis to the initial εί came before the high stop in line 3, and adopts Bollack’s suggestion ἑστίν ἐξ to supply the apodosis. But the space on ΠI does not allow such a reading. It seems unlikely that the apodosis preceded the protasis, and it seems reasonable to think that it came after line 5. The apodosis perhaps ran “he will forget the ιδέα that has been troubling him” if λη[ in line 5 should be restored as λη[θην]. 273

Fragment 5, then, which immediately preceded fragment 7, sounds like part of a methodological discussion on how a particular ιδέα might affect a person’s life, and how the person ought to reject it, while developing his philosophical thought. Fragment 8, which comes from the column which immediately followed that of fragment 7, reads:

]
λα . νεί περιέλ[ . . . . . .

272 Arrighetti refers to the meaning in ΠΙΦ ΧΧΧΧΙΙΙ (text [31] [16], line 8). Millot adds [21] [15]. In both fragments the term seems to refer to forms of reasoning.

273 The use would be paralleled in ΠΙΦ ΧΧΧ εί μὴ ληθη τις ἐπὶ τῶν ἔργων τῆς δόξης ἐνεγείνετο, συνεχῶς δὲν ἐαυτόν ταράττοντα . . . . (Laursen 1998: 43-44). Yet one cannot rule out that Epicurus used a word such as ληρος, which would give the opposite sense.
1-5 the letters on the right hand side of the column come from a different layer. The traces are also consistent with ομ.

There is no implication here that, as Millot’s incorrect reading νομίζοντοι may have suggested, Epicurus is reporting the thought of others. It is not easy to think of a feminine subject that could have preceded the participle, but it is striking that fragment 9, which came immediately after fragment 8 on the papyrus, presents two participles in the feminine plural:

ἐμ]ψυχον θεωροῦ[σαι καὶ δη-
μιουργοῦσαι. ἐ]μ[ήν τὴν
ἐννοια]ν δεὶ τ]αυτὰς . . . . .
The two antithetical participles in lines 1 and 2 must have had a common subject. Millot (1977: 28) tentatively proposes θείαι φύσεις, referring to Ad Pythoclem 97, where Epicurus uses the expression, in the singular. She thinks the verb δημιουργεῖν here evokes "le pouvoir créateur et orgainsateur du monde du demiourge du Platon", and that Epicurus is ruling out, in the context of the discussion of the formation of bodies,

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274 The verb δημιουργεῖν could be used of skilled practical work (so Aristotle and Plato).

275 There certainly is similarity of vocabulary with Timaeus 30B 6-9: οὗτος οὖν δὴ κατὰ λόγον τὸν εἰκότα δεὶ λέγειν τόνδε τὸν κόσμον τῆς οὐκ ἐμψυχον τε τῇ ἀληθείᾳ διὰ τὴν τοῦ θεοῦ γενέσθαι πρόνοιαν.
Millot’s reading οὐ μήν in line 2 is not consistent with the traces on the papyrus. But εὖ μέν could have introduced Epicurus’s refutation: one must not think that for the creation of an animate being there must be “une idée préalable”, a meaning which does not seem to be the usual one for ἐννοία in Epicurus, but one for which Millot finds

276 There is evidence that in ΠΦ XIII Epicurus had already broached the theme of the gods (below page 195).

277 Santoro (2000: 91) restores ἐννοιχον twice, in very fragmentary contexts. Neither is absolutely certain (ἐννοιχον in column I line 5, and ἐννοιχον in column II line 3). The word is used in Plato Timaeus 30B, 38E, 74E, 91A and 91B.

278 DRN V181-186 seems comparable: exemplum porro gignundis rebus et ipsa / notities divis hominum unde est insita primum, / quid valiant facere ut scirent animoque viderent, / quove modost unquam vis cognita principiorum / quidque inter sese permutato ordine possent, / si non ipsa dedit specimen natura creandi?

279 In Ad Herodotum 69 Epicurus ἐννοια need not mean “notion that is there already” (as προλήψις does), and the same can be said about the occurrence at Ad Herodotum 57 (where it is used about τὸ ἀπειρον). In Ad Herodotum 77 the meaning of ἐννοια is close to ‘notion which is there already’: ἀλλὰ <δεῖ> πάν τὸ σέμινωμα τηρεῖν κατὰ πάντα ὀνόματα φερόμενα ἐπὶ τὰς τοιαύτας ἐννοιας, ἵνα μηδὲν ὑπενεντυνὸν εἷς αὐτῶν τῶι σεμινώματι δόξης Diogenes Laertius X. 33 may be relevant, although not a direct quotation of Epicurus: τὴν δὲ προλήψιν λέγουσιν οἶνονεὶ καταλήψιν ἢ δόξαν ὀρθὴν ἢ ἐννοιαν ἢ καθολικῆν νόημαι ἐναποκειμένην, τούτῳ μνήμην τοῦ πολλάκις ἐξωθηνος φανέρτος, οἶνον τὸ Τοιοῦτον ἐστιν ἀνθρώπος. D’Angelo (2001: 328) restores ἐννοια to column 11 of PHerc. 1413: Οὐ γὰρ τοιοῦτος τινὶ | ἐγχειρίμασι πι[ρός ἐν]| νομιαν λόγοι γίνονται | ἀλλ’ ὅταν τὸ [δε] τι | προειλημμένον δεικνύῃ τις κατὰ τὸ ἰδιον | τὸ ὅνομα, 'εἴτα' εἷς ἀποστῆ[ι][ματος | κατηγοροῦμεν δυτο[ς] | τούτα μεν[ - - - ]
a parallel in Κύριαί δόξαι 24:280 εἰ δὲ βεβαιώσεις καὶ τὸ προσμένων ἀπαν ἐν
taῖς δοξαστικαῖς ἐννοεῖς καὶ τὸ μὴ τὴν ἐπιμαρτύρησιν <ἐχον> οὐκ
ἐκλείψεις τὸ διευθευμένον, ὡς τετηρηκὼς ἐση πᾶσαν ἀμφισβήτησιν κατὰ
πᾶσαν κρίσιν τοῦ ὀρθῶς ἢ μὴ ὀρθῶς. The use of ἐννοεῖα, although not exactly the
same as Millot proposes for this fragment, seems to support the suggestion that ἐννοεῖα
can be used in the sense that is more usually that of πρόληψις. It should be noted
however that it is qualified by δοξαστικαῖς.

Millot’s general interpretation of fragment 9 is supported by the reading ζω[ωι
. . . ] in line 6. Millot reasonably suggests that μνήμην “peut être soit sur le même plan
que ἐννοεῖαν, soit d’une deuxième infinitive dépendant de δεὶ”. It seems possible
that believing in such an ἐννοεῖα καὶ μνήμην on the part of the gods is the ιδέα Epicurus
mentioned in fragment 5.281 Millot (1977: 28) suggests that ἴρος in line 4 might have
been ἀνδ[-]ρός.282 But such a word-division (as opposed to ἀν[δρός]) would be very

280 Πρόληψις is also used in Ad Herodotum 72, Κύριαί δόξαι 37 and Κύριαί δόξαι 38. Sandbach
(1971: 23-25) argues against the generally accepted identity of κοινῇ ἐννοεῖα and πρόληψις. According to
Sandbach (1971: 30-31) Epicurus invented the word πρόληψις (as Cicero reports in De naturae deorum I. 44).
He suggests that in Epicurus’ view πρόληψις was caused by memory (coincidence of several presentations
of the same object), while the Stoics allowed for other ways of forming πρόληψις (analogy etc.).

281 It is perhaps relevant that the word μνήμη, or some cognate form, appears in the earlier parts of
the roll, in fragment 2b, where μνήμη can be read in line 4.

282 Millot refers to Bollack (1976: 357), where Diogenes of Oenoanda fragment 12 Chilton (=
fragment 15. III Smith) is quoted πάντες ἀνθρωποι ἢ[λ]πιοαν [ ] [ ] [ ] φάσματα[ ] [ ]
[ἀμα][χανοι. ἀν γαρ [. . . . ] φάσματα ἑναργή τυ[γ]|χάνη, πώς δὲ γείνε|ται ταῦτα εὑρίσκειν

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odd, as Professor Römer indicates to me.

Millot’s interpretation of column 9 seems convincing, and I wonder how the fact that fragment 9, and, probably, fragment 8, ruled out divine intervention in the creation of animate beings can square with her suggestion that Epicurus criticised Anaxagoras’ elements theory in fragment 7. It seems more likely that Epicurus was considering here divine nature, and whether it was involved in the process of creation. And it seems possible that he used ὀμοιομέρεια and cognate forms while putting forward his explanation of living creatures through aggregation of atoms, and setting it against some other thinkers’ suggestion, which implied divine agency.

Anaxagoras certainly had a theory of the origin of living beings (KRS texts 505 and 506), and he might have included Νοῦς in his explanation. But Anaxagoras’ προσωπεία and cognate forms while putting forward his explanation of living creatures through aggregation of atoms, and setting it against some other thinkers’ suggestion, which implied divine agency.

Millot and Laks object to Smith’s reading of φόσματα ἐναργη as images of the gods: “comme la méconnaissance dont il est question ne porte cependant pas, dans l’hypothèse, sur un propriété des dieux (leur oisiveté, en l’occurrence), mais sur la nature du mécanisme physique lui-même (voir πώς . . . δύνονται), on ne voit pas du tout comment elle pourrait conduir à poser l’existence d’un démiourge, c’est-à-dire un dieu créateur. Le terme δημιουργός implique en effet l’idée d’une organisation de l’univers par une intelligence supérieure. Les images, quelles qu’elles soient, sont donc plutôt celles de phénomènes indiscutables, mais dont la raison d’être n’apparaît pas et auxquels on attribue une origine supernatural (voir par ex. la Lettere à Pythoïdes 86)”. I think Smith’s interpretation that we are dealing with visions of the gods (Smith 1992b: 456) is perhaps preferable. The word occurs again, in Diogenes of Oenoanda fragment 19. I lines 10-11 (Smith 1992b: 178-179), where the behaviour Homer attributes to the gods is criticised. And the verb δημιουργεῖν is used, again in a context dealing with the gods, in fragment 20 Smith, where Diogenes criticises the view that the gods created the world as an habitation for themselves (Smith 1992b: 180-181).
reference to Νοῦς was notoriously not followed up in practice, and certainly his theory was not one where divine intervention played a considerable role in creation.

Plato's theory in the *Timaeus* would provide a more suitable context for a discussion of this kind. Epicurus' point against Plato would be that the mechanical process, i.e. the shapes the atoms form in colliding is *sufficient in itself*. As Professor Sharples suggests to me there might be a connection with the principle of "like to like". Democritus (KRS text 570) and Plato (*Timaeus* 63E, in context) assert this principle and derive it from underlying mechanical reasons.

It seems at least conceivable that Epicurus criticised Plato in book XV, and that the references to those who have developed physical systems in the book are references to the system Plato elaborated in the *Timaeus*, a work which Epicurus would

---

283 If we are to believe Plato (*Phaedo* 97B) and Aristotle (*Metaphysics* A. 4. 985a18-22) that Anaxagoras' accounts were actually pretty materialistic and mechanistic, Epicurus would have been on slightly unsafe grounds in dealing with Anaxagoras' account of the origin of animate beings, since Anaxagoras' theory might seem rather like his own, and thus his own theory liable to similar difficulties to Anaxagoras' (although Anaxagoras could appeal to Νοῦς). For what it is worth, given the state of the evidence, there is no reference in Anaxagoras to any specific examples of demiurgic activity of Νοῦς, although his general statements do imply that it organises everything (KRS text 476).

284 It may be that in this context at least the δημοφιλεῖόν might be the similar particles (atoms or molecules) which tend to come together?

285 Arrighetti had suggested a relation to the *Timaeus* for the final columns of book XV (those from cornice 8), which are discussed below, but Millot failed to pick up on this.
have studied under his teacher Pamphilus.\textsuperscript{286}

To sum up regarding the use of όμοιομέρεια in fragment 7 of ΠΦ XV: lines 3 and 4, and what came ahead of them discussed, or at least mentioned, how the διάφοροι συγκρίσεις come into being. Epicurus is certainly discussing, or putting forward, a theory of atomic compounds here. I take it that the δη in line 4 is used as a particle of emphasis.\textsuperscript{287} The το δη μη in line 4 almost certainly introduced an infinitive.

\textbf{2.1.4.2 Cornice 3}

The two better preserved fragments of\emph{ cornice} 3 are 11 and 12. Epicurus' use of a word from the όμοιομερ-root in fragment 11 has lead scholars to read the fragment as a report of Anaxagoras' theory of 'predominance'. I think that fragment 11 can, and should, be explained in the context of an account of Epicurean aggregates:\textsuperscript{288}

\begin{center}
[ δια . . .

. ]ιν συνετ[a]κε [.] καθό γαρ
\end{center}

\textsuperscript{286} Criticism of Plato seems to have been a recurrent feature in this section of the ΠΦ. In column XXXVIII of ΠΦ XIV, while criticising Plato for his choice of shape, Epicurus announces further discussion of Plato's theories: ἀλλα γαρ αδη̣ις που ταύτα μηκυνθηοεται. The reference there seems to be to a discussion of infinite divisibility.

\textsuperscript{287} Denniston (1950: 203-204) gives "clearly" as its primary meaning.

\textsuperscript{288} Millot 1977: 29 and Sedley 1998: 124. 'Predominance' is explicit in the last sentence of Anaxagoras DK B12.
The verb προσαγορεύεται in line 2 seems to refer to the fact that each body reveals itself as a particular nature, to which we can apply a name; ὁ δὲ means “whichever thing” (Millot) and is the subject of προσαγορεύεται.
Millot suggests that the subject of πεποιηθεν in line 5 could be φύσις or, more probably, σύγκρισις.²⁸⁹ My restoration of lines 7-8 confirms that σύγκρισις was the subject of πεποιηθεν. This does not fit easily with thinking that we have a report of Anaxagoras' theory. Anaxagoras did not use σύγκρισις as a physical entity, but rather as a process.²⁹⁰

It looks as though ἐκ τῶν πλείστον τῶν ὁδείς τινῶν should be taken as a whole, meaning “made up, for the most part, of these”, i.e. “the greatest portion being made up of these” (Millot). The ἐκ τῶν πλείστον τῶν ὁδείς τινῶν was taken up (and explained) by ἐξ ὁμοιμε- and by οὐκ ἐκ, which presumably gave an incorrect alternative explanation.²⁹¹ According to Millot (1977: 29) Epicurus used the adjective ὁμοιμερών, referring to a noun such as σωμάτων. The traces of ink on the papyrus however do not allow for σωμάτων, or even for a shorter alternative, such as ὁγκών. Arrighetti's ὁμοιομέτρειας seems too long to fit the space. And certainly too long is the plural ὁμοιομερεῖων, which is not safely attested anywhere else in Epicurus anyway. All one can say is that the term seems to refer to what provided the name to a compound/substance, and therefore presumably provided its characteristic features.

²⁸⁹ For a parallel expression, above note 203 and perhaps line 17 of column "XXXIII" (above page 112).

²⁹⁰ Anaxagoras used σύγκρισις in the singular to refer to the process of coming together (as opposed to separation), not in the sense of agglomerates of atoms making up things in our experience, as in ΠΦ XIV and XV.

²⁹¹ One may wonder whether Epicurus would introduce an 'incorrect' explanation to emphasise the point, if he was reporting Anaxagoras' theory.
It looks as though the predominance issue figured in Epicurus’ own theory. *Ad Pythoclem* 109 (quoted above note 205), implies a principle of predominance: ice is formed when the angular shapes expel “round configuration” from the compound. *In Ad Herodotum* 63 Epicurus says that the soul is a σῶμα λεπτομερές spread all over the body very similar to πνεῦμα θερμοῦ τινα κράσιν ἔχοντι καὶ πῆ μὲν τοῦτο προσεμφερές, πῆ δὲ τοῦτο. Lucretius in *DRN* III 288-306 similarly says that souls are made up of certain ingredients, and the character of the soul is determined by which ingredient predominates, although he does not say that the fact that it is a soul rather than something else depends on predominance in this way. Aetius IV. 3. 11 similarly reports that Epicurus κράμα εκ τετάρων, ἐκ ποιοῦ πυρόδους, ἐκ ποιοῦ ἀερόδους, ἐκ ποιοῦ πνευματικοῦ, ἐκ τετάρτου τινὸς ἀκατονομάστου, δή αὐτῶι αἰσθητικῶν. One should perhaps assume that these ingredients themselves are compounds of atoms, since they display characteristics which require secondary qualities. So it may be that the principle of predominance applied to the level of molecules rather than at that of atoms.

Fragment 12, which comes from the column immediately following that of fragment 11, reads:

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292 Arrighetti though this theory was referred to in *ΠΦ* XXV, above note 203.

293 Alexander of Aphrodisias in Usener text 315 reports that according to the Epicureans the soul is a σύνθετος ἐκ πλειώνων τινῶν καὶ διαφέροντων σωμάτων. This could, presumably, refer to aggregates of atoms.
Epicurus was considering in fragment 12 “from where” the compounds acquire such or such a specific φαντασία.\textsuperscript{294} By φαντασία he presumably referred to the appearance

\textsuperscript{294} This may have been a question. Epicurus would be asking how this could be explained on any other theory, or he could be giving his own explanation: “this shows from where . . . “.
of the compound. It is perhaps possible that the reference here is more specific, and regards the configuration or shape of the compound. We have seen above (pages 138-139) Epicurus using τοιαύτη φαντασία σχήματος to refer to the compound fire, although he was reporting Plato. But while in book XIV Epicurus mentions σχήμα explicitly, he does not in fragment 11 of book XV, unless such a mention was lost in the earlier part of the sentence and just assumed in the latter parts.

This reading of fragments 11 and 12 suggests that 'aggregation of atoms explains the creation of everything that exists' was the 'unifying' theme of II Φ XIV and XV. The words from the ὁμοιομέρη root were important in this context.

Only a few letters can be seen from the column immediately following that of fragment 12, numbered inappropriately as fragment 12 A in Millot: the first word of the line is οὐδεμισθης. The evidence suggests that Epicurus had been dealing with aggregates throughout columns 11, 12 and 12A.

Fragments 12B, 12C, 13a and 13b come from different layers of the roll. It looks as though 12B and 13b are sovrapposti and therefore came from columns which belong to a later part of the roll. An interesting reading is ἴσχυροι γένει in line 1 of fragment 12 C. This is a term which Epicurus uses to refer to "the strength" in difference of the compounds (e.g. in lines 4 and 5 of column XIII of II Φ XIV). Fragment 13a has the word δεδῆλωται in line 3 and τὰς ὁμοιαίας εį in line 4, but there is not enough context to see what the similarity in question might be. The use of such vocabulary is certainly

295 On Sedley's assumption of "thematic unity" for II Φ XIV and XV, below page 193.

296 Fragment 13b is probably part of a sovrapposto.
consistent with a discussion of how the compounds exhibit a specific nature.

Let us now turn to fragment 14, which according to Sedley (1998: 124) is reminiscent of Lucretius' argument against Anaxagoras in *DRN* I 897-914, i.e. the argument that *multa semina ardoris* (i.e. atoms of the kind that mix to produce fire) when they come together create fires in trees, which counters Anaxagoras' claim that there is fire itself in wood. Fragment 14 reads:

\[\text{\textit{[Fragment 14 text]}}\]

---

1 \[\text{\textit{[Fragment 14 text]}}\] Arrighetti Millot 1-2 τὴν παραλλαγὴν τῶν ἀτόμων Millot 2 supplevi 3 supplevi; ην εἰς τῇ ἀπειρίᾳ Millot 4 fortasse διά τάττοιτο; καθάπερ Millot 5-6 legi et supplevi; \[\text{\textit{[Fragment 14 text]}}\] Arrighetti: ταύτα Millot

---

\[\text{\textit{[Fragment 14 text]}}\] 297 Fragment 14 came two, or possibly three, columns later than fragment 11.
Arrighetti (1973: 611) thought the fragment dealt with infinite divisibility, in view of 
\( \acute{a} \pi \varepsilon \iota \rho \iota \alpha \nu \) in line 4. But this does not seem necessary. The reference could be to the infinite number of compounds resulting from the coming together of Epicurus' atoms. The expression \( \pi \alpha \varrho \alpha \lambda \lambda \alpha \gamma \iota \tau \omega \nu \) \( \alpha \tau \omicron \mu \omega \nu \) in lines 2-3 may refer to the difference in shape of the atoms, or possibly to the difference brought about by changes in position of the atoms.

It seems worth mentioning that \( \pi \alpha \varrho \alpha \lambda \lambda \alpha \gamma \iota \) and \( \acute{a} \pi \varepsilon \iota \rho \iota \alpha \nu \) appear together in a column of ΠΦ ΧΙ:

\[
] \alpha \varepsilon \, \varepsilon \iota \pi \iota \, \pi [ \\
] \, \alpha \varepsilon \, \kappa \alpha \iota \, \lambda \alpha \mu [\beta \alpha - \\
... \, \nu \, \pi \alpha \varrho \alpha \lambda \lambda \alpha \gamma \iota \nu \\
\delta \iota \iota \, \acute{a} \pi \varepsilon \iota \rho \iota \alpha \nu , \, \varepsilon \iota \, \pi \rho \delta \zeta \\
\acute{e} \kappa \varepsilon \iota \nu \, \pi \varepsilon , \, \mu \nu \iota \alpha [\kappa \iota] \zeta \, \ 5 \\
...
\]

Arrighetti-Gigante (1977: 5) find a problem with connecting the fragments, which they think deal with infinity and movement of atoms within it, with the final part of the book, where the position of the earth in the cosmos and the impossibility of observations about heavenly bodies are considered. Epicurus certainly used \( \acute{a} \pi \varepsilon \iota \rho \iota \alpha \nu \) in contexts other than infinite divisibility, but since the word is used with \( \pi \alpha \varrho \alpha \lambda \lambda \alpha \gamma \iota \) it may rather refer to
There is no indication in this fragment that Epicurus in fragment 14 of book XV was explaining the phenomenon of wood-combustion specifically. Epicurus seems to be considering the possibility that someone (τις) should hold a particular view, in a tone similar to that of fragment 5 (above pages 149-150). The way of proceeding seems very different from Lucretius’ direct attacks on Anaxagoras in his critique.

2.1.4.3 Cornice 4

Fragments 15 and 16 are, it would seem, the two fragments among those preserved in cornice 4 which came earliest in the roll. It looks as though Epicurus was discussing here how to interpret the evidence from the sensation:

... ὅς δὲ λέγειν τὸ τοῦ...
... ἢ ἀνάγκην π[α]-
... σαίς] φύσεσιν προστιθέ...
... ἂλλου ἀπειργ[...-
... ἦ καὶ μὴ μὰ Δ[α

298 The word ἀπειρία seems to refer to the infinite supply of images in Arrighetti text [26] [35] lines 6-7, which is also from book XI.
2 πα- the following traces are probably from a different layer. Traces from more than one layer make this letter indistinguishable. 7 The loop of ϕ must have been considerably smaller than elsewhere.

1 ιος Millot; tot[e Millot 2-3 legi et supplevi 3-4 προστιθέναι aut προστιθε[ναι]ς προστιθέναι τες Arrighetti 4 fortasse ἀπείργων|τος; ἀπείργων|ους Arrighetti 5 supplevi; |καὶ μῆ μα[ Millot 6 supplevi; ]ταιθή[κε]ς ἀντι Millot 7 legi et supplevi

The reference in προστιθημι here is probably to the addition of atoms to a compound, and ἀπείργω, if the form in line 4 is from that verb, can be interpreted in the same context, as referring to being excluded from a compound. Fragment 16, which came in the column immediately following that of fragment 15, reads:

tεον· τί ἀντι . . . . ἐκεῖ προστιθέμενα ἐνταῦθα οὐ θεωρεῖται ύπερ· τὸ γὰρ ἐνταῦθα ἑτε. [ . . . ]ζητεῖ· κα. [ 5 e ]περμ
it is very hard to see what letter or letters followed, either the ink from more than one layer is showing, or the letter was (or letters were) deleted, and a substitute was added above the line; κα. 

[traces are consistent with κ or v]

5 Millot 2 supplevi 4 supplevi 5 legi; ]η . ει . κακ Millot 6 legi; fortasse σπερματ

A possible interpretation of this fragment is that by έκει and έντειθε Επικορος is referring to what is, and what is not apprehensible with our senses. This again would be comprehensible in the context of the process of addition of the atoms to a compound.

Επικορος refers to the senses twice in fragment 17 which reads:

αίσθησιν ἀνάγοντας ἀλλ' ἐπιβλέπει πόσας οὔτως 

ηδὲ ἡ κατηγορία περίλαμβανει τῶν ἐν ταῖς αἰσθήσιον ἀντιπροσωπεύονται

5

1 ἀνάγοντας Αρριγέττη; ἀνάγων[ν] ... ζ Vogliano Millot 2 supplevi; πόσα Vogliano Arrighetti: πόσα οὐτως Millot sed brevius spatio 4-5αιοθη[-]οσειν Vogliano αἰοθη[-]οσειν καὶ Millot sed spatio longius

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Millot translates κατηγορία as (French) "affirmation". It seems to mean "account" in Epicurus' letters. But the alternative meaning "attribute", "quality" seems possible here. It is not clear what the feminine plurals in this passage refer to, possibilities are φύσεις and συγκρίσεις.

Fragments 18, which is from the column which immediately followed that of fragment 17, reads:

. . . ]τα[ διὰ τοῦ μὴ κατ[ά] τάς
. . . δεις π[ροσα]γορευο-μέν' α' ς πρός τιν[ων]ν [ε]ύ-
θὺς ὀρθῶς ἔχειν τούτ[ο]ν [υ]-
τ[εκ]μαίρεσθαι δὴ δὴ καί 5
καθ' αὐτ[. . ] τα[. . .] . ἀλλα . [.]ν

3 μὲν 'α' ς is corrected from μένους, with ou deleted by a stroke and α added above the line; θ very uncertain, could be ν or ι.

It looks ὅρθως ἴχνειν is the infinitive introduced by διὰ τοῦ μὴ in line 1, πρὸς τινῶν presumably refers to other thinkers.

Fragments 19 and 20 confirm that Epicurus was dealing with aggregates:

ἐπισπάται καὶ τὸ τὰς ἄτομος μηδὲν ἢ τὸν μὴν
dὲν ἐλάττουσι; τὰς τοιάσον

de ἡ τοιάσον ἡ ἔγειν εἶναι. [αἱ

μὲν γὰρ ἐν ταῖς ύπὲρ ἐκείνων

ν' περιλαμβανομένων]

εἰς οὐ δικά[5]

It is perhaps likely that the verb ἐπισπάσθαι means “induce” an opinion, as it does in ΠΦ XXV. The opinion into question seems to be saying there are no less atoms (presumably in a compound), or that there are no less atoms of this or that specific kind,

299 Laursen 1998: 46 (Herc. 1056 fragment 8. 2 line 17 etc.). This seems preferable to taking it as referring to a compound incorporating new atoms.
assuming that ἐλάττους does not refer to the size of the atoms. It is perhaps likely, in view of what Epicurus said in fragment 11, that he was criticising this position. It seems likely that μηδὲν ἢττον in line 2 is adverbial (as in Arrighetti text [31] [3] line 1).

Fragment 20 mentions, it would seem, the ejection of atoms, presumably from compounds:

]δι . . . ε [. . ] προσ[. . ]ν καὶ
. . . . ]ν [. . . ]πάντα .γ

2 empty space after ποιεῖσθαι  5 the letters ἐποσ perhaps from a different layer  6 ε and the traces ahead of it probably from a different layer  7 λη and preceding traces from a different layer

1-2 ἐκβολὴν Vogliano Millot ἐνβολὴν Usener Arrighetti  3-4 supplevi; ποιεῖσθαι δ[ν] καὶ
Arrighetti Millot  4 υπήρχεν εἰ ἐνε-. Millot  5 . . ἐποδ . αἰ ἐτεραὶ τ . . . Millot  6 supplevi; νη πρὸς δ[να]γκαὶ- Arrighetti  7 supplevi; . . αντ Arrighetti: εν . . . σαν[ ] ον Millot

171
The impression that Epicurus was dealing with compounds and how they retained and lost particles is reinforced by the expression τοῖς ἰσασμοῖς which I think, following Arrighetti, should be restored to fragment 21:

μεῖν τοῖς ἰσασμοῖς ὤντοις ὑφηγεῖσθαι δὴ περὶ τῇ ἔρχης προειλόμεθα
οἴκονομεῖται [η]μῖν, φημιν, καὶ ἧτις . . . ἄλο . . . 5
[ε]ἴναι ἐτοιμοὶ . . . ]γειρον
]. . υκα]

---

2 ὑφηγεῖσθαι followed by high dot, empty space and corresponding paragraphos in the margin

---

1 ἰσασμοῖς Usener Arrighetti: ἰσασμοῖς Vogliano: ἰσ...μοὶς Millot 3 Vogliano 4 Millot
5 supplevi; μὲ καὶ η[ μοὶ . . φί Millot 6 legi; ] ν [. ]ς τὸ α[ Arrighetti

Fragment 21 carries an implication that the book had a unifying theme. The punctuation on the papyrus suggests we have here the close a of major section of the book (see
apparatus). And Epicurus’ phrasing suggests that from the start the book (ἐξ ἀρχῆς) he had set out a topic which he had discussed all the way through. When he came to fragment 21 Epicurus thought he had treated the topic adequately. Given the evidence from the previous columns it is hard not to conclude that this topic was aggregates.

Fragment 22 suggests that the new topic Epicurus turned to still involved discussion of aggregates:

\[
\piα-]
\]
\[
ρ\)αλέχ[θ]αι [ἀμ]α αὐτοῖς κ ὁχή-
σει καὶ στεγά[σ]ει αὐτά, καὶ
α]ύτ[α ὑ]π' ἐκείνων διασω-
θήσεται καθάπερ καὶ αἴ παρ
ημει[. ο]γκρίσεις. δο[α]']ι [.καβ]θο' ἐ〈αυ-
tάς μὲν οὐδ' [.]ταὶ [ε]ἶναι
\]


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Cornice 5 preserves the remains of 9 columns of text. The fragments appear in three separate sections, and are, as far as one can tell, continuous columns. Very few letters can be read in fragment 22A, but the expression μικρομερών δικων suggest aggregates were again under discussion, and seems to support the view that δικοι could refer to molecules which preserve the characteristics of the larger compound. Fragment 22B reads:

\[
\begin{array}{c}
\text{ναγκ[αίο]ν ἀπαντά συμπε-} \\
\text{ρ]ιλέχθα[ι ὁ]στ' α} & \text{. e . σακ[.]ι} \\
\text{ηηη . ου . γε[} \\
\text{αυτή[} \\
\text{σίων ἀπό γελοι[ } & \text{5} \\
\text{κε[ι] το[} \\
\text{. τήν ζά[λ]η . η} \\
\end{array}
\]

\[300\] Above pages 104-110.
Let us come to fragment 23:

1 τὸ ὅλων τῆς δόξης τῆς ἂριστην ἐκθεσιν [ei] μὲν γὰρ ἐσοικέν ὧν ταῖς κατὰ τὴν σχημάτισιν ποιώτησιν τῶν συγκρίσεων ὁμοιομέρεις 

φαίνειν...

φύνεις ἡμῶν...

The adjective is used here in the context of the configuration of the aggregates. It is
unclear whether “the qualities of the aggregates according to \( \sigmaχ\eta\mu\alphaτ\imath\iota\varsigma \)" is a reference to the shape of the compound itself or, with rather elliptical language, to the shape of the constituent atoms.\(^{3}\) We shall come back to this problem just below, when considering fragment 25, where a similar reference is found. The mention of living beings in line 7 can be compared to \( τ\iota\varsigma \phi\upsilon[\sigma\epsilon\omicron\omega\varsigma] \zeta\omicron\nu\tau\omega[\upsilon] \) in line 7 of fragment 15.

Let us first consider fragment 24, which followed fragment 23:

\[ \text{τοὺς περὶ φῦ:-} \]
\[ \text{σεως πεπραγμ[ατε]υμένους[.]} \]
\[ \text{ἀλλὰ καὶ δόξας διοράν ἀρ-} \]
\[ \text{χων ποιαὶ εἰσιν ὅρθαι ἢ ποι-} \]
\[ \text{αι οὐκ ὃ[ρ]θαὶ, ὡς γε δὴ αὐτοὶ .} \]
\[ \text{ατοῦ . \'ν ἐν τοῖς πρὸς τοῦ 5} \]
\[ \text{ ναὶ τῶν φυσικῶν} \]
\[ \text{. . . . . σε[.] κρ. . . . [ ] . οτί δὲθ .} \]

---

\(^{3}\) As Professor Sharples points out to me \( \sigmaχ\eta\mu\alphaτ\imath\iota\varsigma \) ought as far as word-form is concerned to mean not “configuration” but “configuring” and LSJ’s “configuration” may be misleading because it might imply an arrangement of several things, whereas in fact one of their examples is Plutarch on the phases of the moon, which are changes of (apparent) shape in a single thing. Montanari’s “aspetto” does not seem satisfactory either. Aristotle uses \( \sigmaχ\eta\muα \) to explain Democritus’ \( \rho\omicron\omicron\omicron\omicron\omicron\) of atoms in KRS text 555.
It is difficult to determine what Epicurus' line of thought is here. It may be that Epicurus wrote: “not only criticise those who have developed physical systems, but also to tell apart the δόξαι ἄρχων which are right and which are wrong”. It seems probable that book XV contained evaluation of earlier views on ἄρχαί, although it is not clear how many such δόξαι were taken into account, and whether they were considered earlier in the book or this column introduced the evaluation of such δόξαι. The way in which evaluation of δόξαι is mentioned here is very different from the angle which Epicurus gives to his polemic in column XXIV book XIV (above pages 95-96).

In fragment 25 Epicurus writes:

ταύτ[η]ν τὴν δόξαν. ἢ
μὲν [γ]άρ κατὰ τὰς ποιότητας καὶ τὰ καὶ μορφ[ήν]
όμ[οιο]μέρεια προάγετ[α]ι

302 I am not completely satisfied that this adequately explains the “but also”.

303 But one cannot exclude that the remark was more general, referring to Epicurus’ method, rather than to book XV specifically.
It is not certain whether the δόξα mentioned in line 1 is (a) Epicurus' own view, which fits in better with fragment 23 where Epicurus was apparently looking for the best exposition of (presumably) his own theory or (b) a δόξα held by someone else, as fragment 24 may suggest. Option (b) is perhaps more likely. Epicurus in fragment 25 is describing a ὁμοιομέρεια "regarding the qualities" and not "regarding shape". He seems to be referring to ὁμοιομέρεια in the Aristotelian sense, i.e. that smaller parts

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3 καὶ. ye perhaps better, but seems to give no sense 5 σουε., χ or κ

2 μὴ γι legi; etc. [γ]ὰρ Millot 3 τα[ς κα]ὶ μὴ Arrighetti: τα[ς τᾶς] μὴ Millot sed cum II non congruit

4-5 supplevi  6 legi

---

304 Millot (1977: 35) thought that the difference between the two kinds of qualities referred to in fragments 23 and 25 is reflected in the use of the two different terms σχημάτισις (referring to the shape of the atoms) and μορφή (referring to the shape of compound bodies (such as is preserved by the images). In Ad Herodotum 42 Epicurus uses σχημάτισις to refer to the shape of the atoms. Such a distinction was suggested to Millot by her reading τὰς ποιότητα[ς τᾶς κα]ὶ κατὰ μορφήν, which is not allowed by the traces in II. That σχημάτισις was Epicurus’ way of referring to the shape of individual atoms is possible, but the evidence seems far from conclusive. See above note 205 on how Epicurus may have used σχηματισμός in reference to compounds rather than atoms.

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of a substance preserved the same qualities as the substance itself. The kind of ὀμοιομέρεια described may apply to Anaxagoras' theory, and it may be that Epicurus is here distinguishing the ὀμοιομέρεια regarding the qualities in Anaxagoras' theory from his own use of ὀμοιομέρεια. But given how fragmentary the context is, it is difficult to give an exact explanation.

Fragments 26 and 27 seem to deal with processes of mental apprehension. Fragment 26 reads:

κα-]
θό ἐκάστη ἐπιφορά ἐφ' ὅ τι 1
δήποτε γί[ν]εται, τὸ ἐν τῷ
λόγωι ἐκ τῆς καταφορᾶς συμ-
περιλαμβα[ν]όμενον, καὶ
ἐπ[είδ]ῇ ταῖς μ[ὲν] ἐπιφοραῖς 5
. κια πρ[ὸς ἂ]λλῃ .
νον θ. μεν[α] τῷ .

305 Millot (1977: 35) that ὀμοιομέρεια occurs in this fragment, and a form from the same root in fragment 23, because Epicurus is considering "dans la theorie d' Anaxagore, le case des qualites qui ne sont pas liées à la forme".
And fragment 27 reads:

τῆς καταφοράς ἐμπεριει-
λημμένον ἐνδ[ε]ικνύ[σα-
σθαι [τῷ]ν οὐκ οἰκ[ε]ίων[ἐν τῇ]
πρώτη ἐπιφορ[ά] π[ναμ[...

---


Arrighetti (1973: 612) dismisses LSJ “impact” (“urto”) for ἐπιφορά here, and translates it as “riferimento” (1973: 288). He thinks καταφορά cannot mean “motion downwards” (LSJ), and translates it as “deduzione”. Millot (1977: 36) similarly takes the terms to refer to logic: “proposition” for ἐπιφορά (movement forwards), and “deduction” for καταφορά. It looks as though in these two columns Epicurus introduced some remarks on logic and processes of mental apprehension specifically.
Since we are here roughly nine columns from the end of the book, I assume that Epicurus' remarks on logic introduced the concluding section of the book.

Fragment 28 reads:

. των ἡμῖν τοῖς δόγμασιν.
ἀναγκαῖον [δ]ὲ τοῦτ' ἐστ[ι]ν
πράττειν δι[ά π]ολλὰ[ς] αἰτί-
ας ἄς πολλάχοι εἰρήκα-
μεν[ 5
πε[ ]εια
το βα[ ]οιγ[ ]κα[

It seems certain that in this section of the work Epicurus is taking up a point he had already made repeatedly in his work. The reference could be to our understanding of the divine, since books XII and XIII of ΠΦ considered the gods, and their conception by humans (below page 195).

The column of fragment 29 followed immediately after that of fragment 28:
The use of the verb πίπτειν seems surprising here in reference to λόγοι; perhaps Ad Herodotum 78 can be compared.\textsuperscript{306} It may be that Epicurus was describing here popular beliefs on the gods, which would explain the plurals in the passage.

\textsuperscript{306} Καὶ μὴν καὶ τὴν ὑπὲρ τῶν κυρίωτατων αἰτίαν ἐξακριβώθαι φυσιολογίας εργὸν εἶναι δεῖ νομίζειν, καί τὸ μακαρίον ἐν τῇ περὶ μετεώρων γνώσει πεπτωκέναι.
2.1.4.4 Cornici 6 and 7

The best preserved fragment of those in *cornice* 6 is fragment 30:

\[\text{\begin{verbatim}
ναντων δ' ἐκ τούτου
τοῦ μέρος[υς] οὐ μὴν ἄλλα[ὰ]
καὶ με[. . .]ανα[.]υμεν [ . . . -
πος καὶ ἐπ[ι] τὴν ἑξά[ . . . ]
ἐ]τιβολήν οὔτως ἐκ τ[. . . ] 5
. το[ν] δ[η]μαγωγ[ . . . -
. . . ]αν ἀκράτου κ[ . . .
\end{verbatim}}\]

1-3 the letters seen at the right margin of these lines are probably from a different layer of the roll 2 empty space after μέρος[υς] 6 there are traces of ink underneath the [η] and α, I assume these come from a different layer.

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It looks as though ἐπιβολὴ in line 5 does not refer to the movement of the atoms towards the compound, 307 but to a process of mental apprehension. In Ad Herodotum 35 and 36 ἐπιβολὴ means "apprehension", "act of understanding". The word ἀκράτου in line 7, which seems certain, 308 means "unmixed" but could be used rather in its transferred meaning "untempered, violent". The idea of "pleasing the people" in δημαγωγ- is perhaps better interpreted as a reference to the human world, than as a description of the kind of activity the gods do not partake in. Epicurus may well be describing, with δημαγωγ-, the behaviour of someone who is striving to achieve political status.

The fragment from the next column, 30 A offers very few letters, the longest sequence of which is πολ[λο] ἑφερον[. ] ν in line 2.

Fragment 30 B 309 reads:

γὰρ ἐκαστας νομ[. . . .] α [.]
τ ν[. . ὁρον[. . . .] δυσ-
χερὼ [. . .] ο τινα [. . .] γη.
το ἀεικε[ς] δ τι διε . κη[.]

307 Compare fragment 20 above, lines 1-2 τῶν ἀτόμων ἐκβο[λη]ν ποιεῖσθαι.

308 Epicurus is not known to have used ἄνα. G.E. (sub voce): "nusquam legi in Epicureis neque Epicureorum reliquis".

309 Again Millot's numbering seems misleading here. Fragments 30, 30A and 30B are from separate (and continuous) columns.
Unfortunately the context is, once again, hard to determine. The term έμφασις (εἰ) of line 5 may suggest that Epicurus was still describing the person who was acting as a demagogue in fragment 30. The use of φιλ[ο]δοξίας fits well such a context.

The fragments of comice 7, which are probably from four continuous columns of text (30C, 31, 31A, 32), are in a very poor condition.310 The few words surviving in fragment 31 are:

310 It is unclear whether fragments J, K, L, and M are from the lower part of the same columns. Millot (1977: 11) has it that the upper and lower section of fabric in comice 7 are not the same length “et il est impossible de faire coïncider à la fois les plisures du papyrus et le marges des colonnes”. Even if the top and bottom sections do not match exactly, it seems reasonable to assume that the lower section came roughly from the same part of the roll. It is interesting that in fragment M Epicurus seems to have used the expressions περὶ φύσις (εὐς μυθματονευτα) (lines 1-2) and μάλιστα [. . ] συμφέρον (line 5). This suggests that Epicurus was putting forward an important principle (which could be connected with the theme of fragment 28).
The vocabulary is very similar to that of fragment 29 (pages 181-182): it seems likely that Epicurus, in the columns of cornci 6 and 7, was discussing views which either regarded the human soul, or human understanding and way of life.

Fragment 32 reads:

... το τούτο ἐκ μέρ[... ]

του φυσικοῦ χα[κ]

υφ[η]το[]

λαός ως . α . ν αυτ[η]

ἐτρέφετο[η] διὰ φιλο[δοτο-] 5
Epicurus seems to have been dealing with aspects of human life in this column too, and it is interesting that the theme of φιλοδοξία is continued here.

2.1.4.5 Cornice 8

Let us now turn to the ‘final’ cornice of P Herc. 1151,\textsuperscript{[311]} cornice 8. It looks as though

\textsuperscript{[311]} The two sezioni coming about 120 mm from the end of the fabric measure circa 13 mm (circumference 26 mm circa). Judging from the size of the sezioni this pezzo came immediately ahead of the fragment bearing the end-title, which is conserved in the first (?) cornice. It seems likely that this was the last or penultimate column of the book.
this *cornice* preserves the top and the central part of 4 columns: 312 32A (and N), 313 32B (and O), 33 (and P), 34 (and Q).

The expression in lines 4 and 5 of fragment 32B recalls the terminology of the fragments of *cornice* 7:

\[
\kappa \alpha . \tau \tau . \ [ \omega[ \tau \iota[ \\
\kappa[ \omega . \sigma[ \epsilon [\alpha k \rho ] \iota \beta o[ \zeta \\
\mu o\delta e\varepsilon \nu \epsilon \nu \lambda \gamma o[ \iota \varsigma \\
oi . \alpha[ \omega[ \\
5
\]

---

1 Millot 2 \(\epsilon [\alpha k \rho ] \iota \beta o[ \zeta\) supplevi 3-5 Millot

The verb \(\mu \eta \mu o\nu \epsilon \nu \iota \nu\) in this context may suggest that Epicurus is giving instructions to his pupils on what \(\delta \delta \varepsilon \varepsilon\) they should keep in mind, and which they should forget to

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312 This is Arrighetti’s view, disputed by Millot (1977: 37). The shape of the fabric strongly suggests that the lower fragments are the continuation of the top ones. The Neapolitan draftsman draws fragment 33 as physically joined to \(\Pi\) (which would be the lower part of the column) and fragment 34 as physically joined to \(Q\), although the fragments are no longer joined in the *cornice*. This makes it very likely that \(N\) is the lower part of 32 A and \(O\) the lower part of 32 B.

313 Very little survives from these two fragments.
avoid running into trouble.

Let us now turn to fragments 33 and P:

\[ \text{ou...onti. } \alpha...\text{logovn} \]
\[ \text{polla ge ou...etkou.} \]
\[ \text{pir...eilan. o...evo...} \]
\[ \text{diasagewv [ ]sunyte[\(\omega\)]nv} \]
\[ \text{tovn posov[v ]rho[} \]
\[ \text{]tov[} \]

* * *

\[ \text{lour[} \]
\[ \text{kei[vou[} \]
\[ \text{thn apote[lesin hnv] e\(\delta\)i-} \]
\[ \text{tei poi[w[i]sathai xro[w[...ke...ou-} \]
\[ \text{si[v o...evo te[} \]
\[ \text{pito...neis\(\iota\)...odia...ma...} \]
\[ \text{autovs kathst[\(\epsilon\)nai...o...de} \]
\[ \text{...os...\(\tau\mu...n...ostwv-} \]
\[ \text{...itou[} \]

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The word *διαγωγών* in line 4 suggests Epicurus was referring to somebody’s way of spending his time. It looks as though *συντελείων* in the same line is the participle of the verb (“carrying out”). The third person singular *εξήτει* in lines 9-10 indicates that Epicurus is describing somebody’s conduct. It seems likely that Epicurus has taken someone (perhaps *τίς* as elsewhere) as example for his pupil. Epicurus was probably describing the conduct of life. There is nothing in these fragments which recalls specifically Anaxagoras.\(^{314}\)

Fragment 34, and its continuation Q, read:

\[
\text{υπὸ ἀλόγου ὑπο-]
\lambdaῆψεως π[ε]ρὶ τῆς τοῦ [δα]ϊ-
[μ]ονίου φύσεως γινόμενοι
\]

\(^{314}\) I doubt that the reference in *χρω* of line 10 is to colour, in connection with Anaxagoras. *D.G.:* 314 (περὶ χρωμάτων) indicates that Anaxagoras thought that his particles had secondary qualities: οἱ μὲν ἄλλοι τὰ στοιχεῖα κεχρώσθαι φυσικῶς, οἱ δὲ τὰ ὁμοιομερή ποιότητος μετέχειν τὰ πρῶτα, οἱ δὲ τὰ ἅτομα πάντα συλληπθῆναι ἄχροα, ἐξ ἀποίων δὲ τῶν λόγων θεωρητῶν τὰς αἰσθητὰς ἀποφαίνονται γίνεσθαι ποιότητας. Presumably the second clause refers to Anaxagoras, although he is not mentioned elsewhere in this chapter. It may well be that the word we are dealing with is a subjunctive form of *χράομαι* or perhaps *χρόνου*.
περ[ι]αρεθησεθαι ἡμελ-
λον [ ... μ]ηδὲ ἀ ἰμίαντος πε-
ρὶ τῶν ὁσ[ι]ωτάτων ἐπινο-
[ὅ]σεθα[i]  ]έπι

* * *

ηκο[  ]φα[  

τα[ ...... ]ε[ πρ]ός τούς πε-
ρὶ φύ[σε]ως πραγματ[ε]νομέ-

νοὺς οὐ τόδε τὸ δὲν οὐδὲ 10

tόδε [έ]ξετάζοντας ἀλ-
[.. ] λα [το]ύς τὸ δὲν τινὶ κο[ι-
νότη]τι ... ἐ ... η ... μ[  

τη ... τῆς κ[ατηγ]ορία[ς
 [. ]τα[ ...... ἐ]φ ἐ’αυ[τ-

ο]β[ς

φάντα[σια]ν κεκ[τη]μέ-
[ν]ο[υς

0-1 supplevi; ὑπὸ]λήψεως Gomperz Arrighetti 1-11 Millot 12 [ ... ] λα [το]ύς τὸ δὲν τινὶ κο[ι-
Millot 14 κ[ατηγ]ορία[ς supplevi 17-18 Gomperz

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Sedley tentatively suggests that this is an allusion to the charge of impiety brought against Anaxagoras for denying that the sun was a god.\textsuperscript{315} This suggestion requires Epicurus to have been confident enough about his own piety that he could refer to the prosecution of Anaxagoras for impiety. This does no seem a foregone conclusion. Moreover Epicurus agreed with Anaxagoras that the sun was not a god, and it is perhaps unlikely that he would criticise Anaxagoras for this view.

The topic of fragments 34 and Q is certainly comparable to that of fragments 33 and N. Epicurus is now considering how one should behave as far as the gods, and religious rites are concerned. This fits in nicely with the idea that Epicurus in the immediately preceding part of II\(\Phi\) XV had excluded divine activity from the creation of the various natures of compounds we experience. Divine nature could not be concerned with the human world if it were to be everlasting. Those who are about to free themselves of the wrong idea about the gods, by disregarding the demiurgic implications in Plato's \textit{Timaeus}, are able to have a true conception of the gods, and thus be truly pious.

\textbf{2.2 Other considerations intrinsic to Epicurus’ work}

Sedley presents three further considerations to support the claim that II\(\Phi\) XIV and XV

\textsuperscript{315} Sedley 1998: 124, note 81. My restoration τής κ[ατηγ]ορίας to line 14 may \textit{prima facie} seem to support this, but Epicurus seems to use the word customarily to mean either “predicate” or “account”, rather than “charge”.
were dedicated to criticism: (a) Epicurus’ 'Επιτομή τῶν πρὸς τοὺς φυσικούς was presumably based on books XIV and XV (Sedley 1984: 384);316 (b) systematic polemic was the ‘unifying theme’ of books XIV and XV (1998: 125); and (c) it was “entirely proper for Epicurus to test the explanatory power of his own atomistic theory over the entire range of natural phenomena” in ΠΦ I-XIII before favourable comparison with other theories (1984: 384).

It may well be that (b) the two books treated a common, or at least related, topic. But the only external indication that the two books had a common theme comes from the scholium to Ad Herodotum 40,317 which suggests that both books considered, or at least mentioned, aggregates.318 The remark by the scholiast is certainly consistent, as we have seen, with the fragmentary remains from books XIV and XV.

As for (a), there are not enough grounds to establish a connection between the 'Επιτομή τῶν πρὸς τοὺς φυσικούς and ΠΦ XIV and XV.319 Since, as I argue below in Appendix (c), it cannot be proved that either of the surviving physical ἐπιτομαί by

316 On whether the 'Επιτομή τῶν πρὸς τοὺς φυσικούς could have been the source of the critique, below page 254.

317 Sedley bases his argument for such ‘thematic unity’ on the close catalogue number of the two papyri. I am not sure this bears scrutiny. The numbering may suggest that the books were found near to each other, but the argument seems to depend on a — unwarranted as far as I know — claim that books of ΠΦ were ‘shelved’ by subject matter, rather than in numerical sequence.

318 Above note 187.

319 Erler (1994: 96) is confident enough about Sedley’s proposal to insert it in his comparative chart for topics of Epicurus’ letters ad Pythoclem and ad Menoeceum, his ΠΦ, and Lucretius’ DRN.
Epicurus,\textsuperscript{320} the letters \textit{ad Herodotum} and \textit{ad Pythoclem},\textsuperscript{321} reproduces throughout a number of successive books of \( \Phi \), and indeed there are indications of divergences, there is no reason to assume that the \'Επιτομή τῶν πρὸς τοὺς φυσικοὺς had to be a digest of continuous books of \( \Phi \). The τῶν in the title could well mean 'arguments' rather than books; and the criticism which the \'Επιτομή τῶν πρὸς τοὺς φυσικοὺς presumably summarised may have been scattered throughout \( \Phi \) and other works. Even if one takes it for granted that the τῶν in the title refers to 'books', and these were books of \( \Phi \), there are not enough grounds to connect the \'Επιτομή τῶν πρὸς τοὺς φυσικοὺς with books XIV and XV of \( \Phi \), since, as we have seen above, the two books were not dedicated — as the \'Επιτομή τῶν πρὸς τοὺς φυσικοὺς presumably was — to systematic criticism of a wide range of philosophical theories.

\textsuperscript{320} The term \( \varepsilon \pi \iota \tau \omicron \mu \iota \eta \) customarily means summary of a work (such as the one Aristotle compiled of the theories in Plato's \textit{Timaeus} according to Diogenes Laertius V. 25 [\( \tau \alpha \ \varepsilon \kappa \tau \omicron \upsilon \ \Theta \mu \alpha \iota \tau \omicron \ ο\nu \ kα \ \tau \omega \ \Lambda \rho \chi \nu \tau \epsilon \iota \omega \nu \)], but it can also be a summary of the content of a number of different and unrelated texts (see FHS\&G 231: Galen uses the word twice, in the singular and in the plural, to refer to Theophrastus' \( \Phi \Delta \)). See Baltussen (2000: 130) for the use of the word in Aristotle and Theophrastus.

\textsuperscript{321} Zeno of Sidon (Angeli 1998: 176-177) had doubts about the authenticity of the letter. Usener and Diels, among others, argued that it is not genuine. I refer to Arrighetti (1973: 691-705) and Mansfeld (1994: 29, note 2) for arguments in favour of its genuineness. Mansfeld (1994: 47) considers it unremarkable that οὔτος εἴη means "physical elements" only in \textit{Ad Pythoclem}: Epicurus is in this letter reproducing Peripatetic terminology. Even if \textit{Ad Pythoclem} were not genuine, there are reasons to believe it was somebody's digest of a text by Epicurus (Sedley 1998: 119, note 65), which is all that is needed for many of the arguments regarding its relation to \( \Phi \).

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Let us consider now Sedley’s argument (c), that just after book XIII, the book which according to Sedley included Epicurus’ account of celestial and terrestrial phenomena, was the most appropriate position for systematic criticism of opponents. A problem with this argument is that the only reports directly concerning book XIII mention the gods: Philodemus in Περὶ εὐσεβείας 1050-1054 (Obbink 1996: 178) οἰκειότης and ἀλλοτριότης that ὁ θεὸς has towards some men,322 and PHerc. 1111 fragment 44, lines 1-8 attributes to both books XII and XIII of ΠΦ a theme which was also in [Epicurus'] Περὶ ὀσιοτήτος.323 Sedley (1998: 122-123) tentatively suggests that Epicurus considered the correct attitude to divinity in book XIII, since it followed on from origin of civilisation in book XII, before discussing atmospheric and terrestrial phenomena.

It seems likely that the account of cosmology and astronomy in ΠΦ XI, and the first part of ΠΦ XII,324 was the main account in ΠΦ. Assuming that this is the case, one would assume that the account of atmospheric and terrestrial phenomena (the material of Ad Pythoclem 88-110) could not have come much later, and certainly that it came

322 Assuming Gomperz's [πρὸς] τινὰς in lines 1052-1053 is right and Philodemus could not have written [παρὰ] τινὰς. If one were to adopt the latter supplement the verb ἔχει in line 1053 should probably be altered to the optative.

323 Obbink 1996: 300-301.

324 The closing sentence of ΠΦ XI runs ἐν δὲ τοῖς ἐχομένοις ἔτη Περὶ τῶν [με]τεώρων τούτων [τι] πρὸς[θ]αροῖμεν (Arrighetti text [26] [45] lines 10-12). It is by no means certain that ἐν τοῖς ἐχομένοις should refer to more than one book. Usener text 83 confirms that astronomical phenomena such as the eclipses of sun and moon were treated in ΠΦ XII.

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before books XIV and XV. This would leave as options for the material of *ad Pythoclem* 88-110 books XII, XIII and conceivably — I find this unlikely — the first, lost, part of book XIV. It seems likely that Epicurus completed his account of astronomical phenomena in the first part of book XII. *Περὶ εὐσεβείας* 523-534 shows that Epicurus criticised the atheists (Prodicus, Diagoras, Critias and others) in book XII. It is conceivable that after treating astronomical and meteorological matters and excluding the gods from the picture in *ΠΦ* XII Epicurus felt the need to make clear that the atheists are wrong and that the gods do exist, and that in book XIII he went on to discuss the aspects of divinity according to his own theory. It may be that the account of atmospheric and terrestrial phenomena came in the central part of book XII, and that therefore it preceded the discussion of divinity (rather than following it).

A problem with thinking that books XIV and XV specifically were dedicated to polemic is that Epicurus’ way of proceeding in *ΠΦ* seems to have been to attack opponents on a topic incidentally, as part of his exposition. We have seen how most

325 Obbink 1996: 142.

326 The positioning of Lucretius’ *excursum* in *DRN* VI 378-422 may point in this direction.

327 Aristotle considers rival theories together (so that they at times form lists), while defining the boundaries of the question and the discussion to which he then proceeds, but Epicurus had less, or no, need to do so, since he did not think an overview of earlier thinkers could help in any way. Theophrastus may have taken Aristotle’s practice further and composed ‘doxographical’ lists, but it seems doubtful whether Epicurus had any reason to follow Theophrastus’ precedent and compile a list of opponents’ theories of matter. We shall see below (pages 199-204) how Epicurus followed Theophrastus on meteorology, but that was a topic where Epicurus allowed for all possible explanations.
of the 'preserved' books of \( \Pi \Phi \) contain polemic of some kind,\(^{328}\) usually against unnamed opponents. It seems unlikely that, when producing a written version of his 'series of lectures',\(^{329}\) Epicurus would refrain from showing how his theory of matter was superior to that of any earlier thinker in the first thirteen books of \( \Pi \Phi \).\(^{330}\) Ultimately argument (c), like all arguments of its kind, as well as being, to some extent, subjective, is not evidence for Epicurus criticising previous theories of matter in books XIV and XV. All it shows is that if Epicurus had done so he would have had good reason for doing so.

### 2.3 Are \( \Pi \Phi \) XIV and XV dependent on Theophrastus' \( \Phi \Delta \)?

I am not convinced by Sedley's claim that Epicurus in \( \Pi \Phi \) XV and XV divided earlier philosophers into three categories, i.e. monists, limited pluralists and unlimited pluralists, just as Theophrastus had done in his \( \Phi \Delta \). Sedley takes this as an indication that Epicurus was using Theophrastus' \( \Phi \Delta \) as source for his criticism of predecessors in \( \Pi \Phi \) XV and

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\(^{328}\) Above notes 92 and 192.

\(^{329}\) Sedley 1998: 104.

\(^{330}\) Sedley (1998: 190): "... Lucretius held over his critique of rival theories of the elements until he had completed his own physical and cosmological exposition in books I-XIII of *On Nature*..." For pertinent criticism of the view that Epicurus did not consider physics and epistemology in the books following XV, and of the distinction of 'polemical books' from the books containing exposition see Arrighetti 1975: 48-49.
XV. It seems extremely likely, although it cannot be proved,\(^{331}\) that Theophrastus, following Aristotle,\(^{332}\) adopted such a threefold division in the ΦΔ. But, as I have argued above (page 127), Epicurus in XIV and XV did not organise his discussion according

\(^{331}\) There are no reports explicitly claimed to be from Theophrastus' ΦΔ under that title, apart from the brief fragment FHS&G 241 A and B. All one has to go on is a section of Simplicius' commentary on Aristotle's *Physics* (22-28). Simplicius may be following Theophrastus since he names him seven times in the passage (FHS&G 224, 225, 226A, 226B, 228 A, 228 B, 230). It is likely, therefore, that Simplicius' categorisation reproduced Theophrastus' (although it cannot be ruled out that Simplicius rearranged the Theophrastean material on the basis of a categorisation elaborated by subsequent commentators on Aristotle's *Physics*; Mansfeld 1989:138-148). Whether Simplicius was using the ΦΔ, or some other text by Theophrastus, is debatable, since Simplicius never quotes the Theophrastean text he was using by the title ΦΔ. Simplicius names no work by Theophrastus in the passage, but has referred to Book I of Theophrastus' *Φυσικά* in 9.7 picked up without title at 21.9 and 20.20. It is possible that Diels was right in thinking that Simplicius made a mistake in 9.7 and was in fact using the ΦΔ. The amount of historical detail in Simplicius may speak in favour of Diels' view. There might be further evidence in favour of Diels' hypothesis. FHS&G 228 A, which is part of the passage 22-28, and FHS&G 228 B quote an almost identical discussion by Theophrastus of Anaxagoras' view on primary elements. In FHS&G 228 B Simplicius refers to Theophrastus' Φυσικά 'Ιστορία (there are a number of references to this work in Simplicius' text: e.g. FHS&G 137 5a and 5c and FHS&G 234). It has been suggested that Simplicius knew the ΦΔ under the name Φυσικά 'Ιστορία. The ΦΔ may well have been the source of 228 B. If this is accepted, one has to think either that (a) Theophrastus discussed Anaxagoras' view in almost identical terms in two different works or that (b) 22-28 reproduced the ΦΔ on Anaxagoras, and therefore probably on the discussion of other philosophers too. I tentatively assume that Theophrastus' ΦΔ was the text Simplicius followed, or that he used the Φυσικά and the ΦΔ had the same division into categories.

\(^{332}\) *Physics* 184b14; and the 'threefold division' is also implied in *Metaphysics* A. 2. 983a24 - A. 8. 990a33.
to the ‘threefold division’. The way in which earlier thinkers are divided into categories does not link the two texts.

I shall now consider whether Epicurus relied on Theophrastus for his polemics against air-monism and Plato. For the issue has a more general relevance to the question about the source of *DRN* I 635-920. Determining whether Epicurus was dependent on Theophrastus might provide an indication of whether Epicurus was the source of Lucretius’ *critique*. Given that the information in Lucretius’ *critique* is ultimately dependent on Theophrastus, if Epicurus’ polemics in book XIV were found to be dependent on Theophrastus, it would be more likely that a work by Epicurus other than ΠΦ XIV and XV was the source for Lucretius’ *critique*. On the other hand, if Epicurus could be shown to be independent of the information in Theophrastus, the case for a work by a ‘later’ Epicurean writer would grow somewhat stronger.

It is certain that Epicurus followed Theophrastus closely on some topics. The occasional close correspondence of *DRN* VI 48-736 to the Arabic text of Theophrastus’ *Metarsiologica* published by Bergsträsser in 1918 led Reitzenstein to suggest that Epicurus, Lucretius’ source, depended on Theophrastus’ ΦΔ. The publication of a fuller Arabic version of the *Metarsiologica* edited by Daiber has confirmed Reitzenstein’s

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333 Above pages 36-39.

334 This reasoning can provide no more than an indication, since Epicurus might have ignored the ΦΔ for his criticism in XIV and XV but used the ΦΔ elsewhere in his writings.
claim that Lucretius is ultimately dependent on Theophrastus.\textsuperscript{335} Mansfeld (1992a: 326-327) and Sedley (1998: 180-181) point to the signs of Theophrastean influence in Lucretius' treatment of thunderbolts: the explanation of why thunderbolts occur most frequently in the spring reproduces point by point the material we find in Metarsiologica \textsuperscript{[6]}.\textsuperscript{336} Mansfeld (1992a: 326-327) claims further, followed by Sedley, that in DRN VI 379-422 Lucretius "repeats virtually all the arguments marshalled by Theophrastus at Metars. [14], though not in the same order".

Van Raalte (2003) has challenged the belief that Theophrastus is the author of the excursus in Metarsiologica [14], because it distinguishes two kinds of causation (divine causation as opposed to natural causation).\textsuperscript{337} She grants (2003: 340-341), however, that Theophrastus inserted in the text of the Metarsiologica a reminder that

\textsuperscript{335} Reitzenstein's further claim that the Metarsiologica was part of $\Phi \Delta$ seems open to debate, see further below note 340.

\textsuperscript{336} Daiber (1992: 274-275) lists the parallels between Theophrastus' account of thunderbolts and DRN VI. According to Mansfeld (1992a: 326) "Lucretius, at least for his section dealing with thunderbolts, did not use the letter [Ad Pythoclem], and we may surmise that a much longer epitome of Epicurus' views on cosmology and meteorology was available to him (assuming he did not consult the difficult Physics)". Sedley (1998: 157-159) argues that Lucretius in his treatment of thunderbolts, and in DRN VI generally, depends directly on II$\Phi$ XIII. Both views are tenable.

\textsuperscript{337} Van Raalte (2003: 314) points out that the excursus is apparently transmitted only in Ibn al-Khammar's translation; it comes somewhat unexpectedly. She (2003: 341) argues that Theophrastus conceived of both order and disorder as indispensable ingredients of the cosmos: in the excursus god is set apart in a way which is not Theophrastean. Someone in the Greek-Syriac-Arabic tradition was inspired to insert his own objections.
thunderbolts are not the instrument of divine vengeance, and that he “may even have” elaborated the dialectical arguments against thunderbolts being instruments of god. Van Raalte (2003: 341, note 92) thinks such a reminder or argument by Theophrastus might have triggered Epicurus’ reflections on the theme (although Epicurus’ motives were different from Theophrastus’).

I consider it most likely that the dialectical arguments are Theophrastus’. It remains uncertain whether they had the same position in the *Metarsiologica* as in *DRN VI.*\(^{338}\) It seems conceivable, despite Mansfeld’s arguments to the contrary, that the *excursus* was meant to appear after the section on thunderbolts. However this may be, there can be little doubt that there is a shared body of argument between the *excursus* in *Metarsiologica* and the one in *DRN VI.*\(^{339}\) It should be stressed, however, that Lucretius has more points than Theophrastus.

Lucretius presents six arguments: (1) why should the gods hit good people (390-395)? (2) why hit uninhabited places (396-399)? (3) why never hit with a clear sky, does Zeus need clouds as transport? (4) why does he warn us (406-410)? (5) how can he cast many thunderbolts at once (411-416)? (6) why does he hit temples, why mostly places on high peaks (417-420)?

Theophrastus’ arguments read: “... if thunderbolts originate in God, why do

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\(^{338}\)In the *Metarsiologica* in its present form the *excursus* comes after halo of the moon, before causes of earthquakes and different kinds of earthquakes. Daiber (1992: 280) thinks this was probably a digression in Theophrastus’ lecture belonging with the chapters on ἀστραπᾶς, Ἥδος and πρηστήρ.

they mostly occur (1a) during spring and (1b) in high places, but not during winter or summer or in low places? In addition (2): why do thunderbolts fall on uninhabited mountains, on seas, on trees and on irrational living beings? God is not angry with those! Further (3), more astonishing would be the fact that thunderbolts can strike the best people and those who fear God, but not those who act unjustly and propagate evil . . . "

All three of Theophrastus’ points are reproduced in Lucretius, although (1b) is only partly reproduced in lines 421-422. It is also worth noting that any reference to the seasons is omitted in Lucretius’ excursus (the seasons are mentioned earlier on in lines 357-378). I assume that Epicurus, in the work Lucretius used as source, was elaborating on the content of his Theophrastean source; this seems preferable to thinking that Lucretius added some arguments, or that Epicurus was using a Theophrastean work which had a fuller list of arguments.

Sedley (1998: 182) suspects that the material of the Metarsiologica appeared in the ΦΔ in a slightly different form:340 this would explain the differences between the two texts, and explain why πρηστήρ has its ‘doxographical’ position — i.e. after thunderbolts, before clouds — in Lucretius (DRN VI 423-450),341 but a much later

340 Sedley's is an elaboration of Reitzenstein's claim that the Metarsiologica was part of ΦΔ. This presumably means that Sedley no longer believes that Theophrastus' ΦΔ appeared around 300 B.C. and inspired Epicurus to write ΠΦ XIV (below page 215), since book XI at least was written before 307-306 B.C. (ibid.).

341 In Ad Pythoclem πρηστήρ is treated in 104, after κεραυνός, before earthquakes. Clouds are treated earlier in 99 (below Appendix (c) page 409).
The correspondence between the order of topics in Aëtius (III. 1 - IV. 1) and DRN VI may support the inference that the information also appeared, in similar form and order, in the ΦΔ. Sedley's suggestion seems to envisage Epicurus as following Theophrastus mechanically point by point, and Lucretius similarly following Epicurus to the letter. Very little room is left for Epicurus’ intervention in the Theophrastean material he was using. This is perhaps preferable to thinking that the (slight) variations in order were down to Epicurus, and Aëtius ultimately depends on Epicurus.343

DRN V also appears to present material which Lucretius derived, through Epicurus, from Theophrastus. Theophrastus’ rebuttal of the proponents of the world’s impermanence, reported by Philo in 184 FHS&G, was the source on the basis of which

342 Runia (1997: 97) compares the order of topics of DRN VI and Aëtius III, and concludes that “the parallelism is virtually complete and cannot be a matter of coincidence”. Slight differences are that Lucretius does not distinguish waterspouts from typhoons, and the position of the rainbow is different. This however does not seem to affect Runia’s general argument. Runia (1997: 97) notes that the parallels between DRN V and Aëtius II are not as close.

343 The comparison however depends on how abridged Theophrastus’ Metarsiologica is. Mansfeld (1992a: 315) argues against Daiber that it is not the whole treatise, because some important meteorological phenomena are omitted: according to Mansfeld entire sections were left out, but there is no reason to think that the chapters we have are abridged. According to Mansfeld (1992a: 316-317) the excursus was the closing chapter of the second book of Theophrastus’ Metarsiologica and chapter [15] is all that remains of the second book which will have dealt with the so called terrestrial phenomena. This is perhaps plausible, but the excursus would be very at home after the treatment of thunderbolts.

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Epicurus elaborated the sequence of four counterarguments we find in Lucretius *DRN* V 235-350 (Sedley 1998: 166-176). It may well be that Epicurus used Theophrastus as a source on cosmogony generally, and not only in the argument for impermanence of the world.\(^{344}\)

Epicurus' use of Theophrastus on celestial and terrestrial phenomena and cosmogony increases the likelihood that he used Theophrastus elsewhere in his work. One should keep in mind, however, that cosmogony, meteorology, astrology and the like are topics on which, according to Epicurus' *Canonica*, all explanations which are not at variance with the facts are equally true and applicable, at least in worlds different from our own (Bailey 1947: 25). In such cases Theophrastus' comprehensive recording of earlier opinions and explanations would have been almost indispensable as a guide. Use of Theophrastus on these topics, however, does not necessarily entail that Epicurus would turn to the ΦΔ, when he criticised, in ΠΦ XIV, air-monism and Plato's theory of shapes.\(^{345}\) That ΠΦ XIV and XV are based on Theophrastus has to be shown on internal evidence.

Sedley presents four arguments for thinking that the criticism in books XIV and

\(^{344}\) What is more the arguments in *DRN* V 156-234 may be evidence for further comments on Plato's *Timaeus* which Epicurus derived from Theophrastus. Sedley (1998: 76) argues that *DRN* V 156-234 are Lucretius' rendering of Epicurus' confutation of the theory of *Timaeus* 32c, that the world was created but will not be destroyed (arguing that the specific point that the world was created for the sake of mankind was a later reading of *Timaeus* by Polemo, who led his pupil, the Stoic Zeno, to develop such a theory).

\(^{345}\) Referring all information in Epicurus to Theophrastus would effectively be an application of *Einquellenforschung*, a method which has been often questioned.
XV depends on the ΦΔ (1984: 385, note 12). His argument that the "homoiomereie reading of Anaxagoras" indicates derivation from Theophrastus need not concern us here. It is not certain that Epicurus used ὀμοιομέρεια in reference to Anaxagoras, and even if he did (in fragment 25) it is in a morphological form and in sense which is different from the one Aristotle and presumably Theophrastus used it in. There remain three arguments: (2.3.1) both Theophrastus and Epicurus ended their criticism of the finite pluralists with Plato; (2.3.2) the detail in the argument against Plato suggests dependence on Theophrastus (2.3.3), the ΦΔ appeared shortly before ΠΠ ΧIV and ΧV were composed. I do not find any of these arguments entirely persuasive.

2.3.1 Was Plato the last of the limited pluralists in Theophrastus' ΦΔ?

Sedley (1998: 183) remarks that ΠΠ ΧIV: "... seems to end the critique of the finite pluralists with Plato; this may reflect the apparent fact that Theophrastus took his doxography down only as far as Plato, and omitted his contemporaries, including Aristotle himself". I have argued above, in 2.1.3, that there was no category of limited pluralists in ΠΠ ΧIV. Plato was the only limited pluralist treated there. I shall now

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36 Sedley (1984: 385, note 12) thinks that Epicurus in ΠΠ ΧIV and ΧV was following Theophrastus because he "adopted the homoiomere reading of Anaxagoras, which ... I believe to be unhistorical but to have started with Aristotle and to have been transmitted with Theophrastus". Presumably Sedley's expression indicates just (a) the application of the term (as in Aristotle) and its use to indicate a specific theory, but not that (b) Theophrastus used the term to identify Anaxagoras' portions. The latter claim seems hard to maintain.
consider briefly the problem regarding the position of Plato in Theophrastus’ account.

The evidence comes from Simplicius fragment 230 FHS&G, lines 3-7: . . . ὁ μέντοι Θεόφραστος τοὺς ἄλλους προιστορῆσας “τούτοις” φησίν, ἐπιγενόμενος Πλάτων, τῇ μὲν δόξῃ καὶ τῇ δυνάμει πρῶτος τοῖς δὲ χρόνοις ὑστερος καὶ τὴν πλείστην πραγματείαν περὶ τῆς πρώτης φιλοσοφίας ποιησάμενος . . . The decisive question is whether Simplicius’ τοὺς ἄλλους and Theophrastus’ τούτοις refer to (a) the limited pluralists or (b) the Presocratic philosophers generally.347 If (b) were the case, Plato came after all the Presocratics in Theophrastus, rather than last of the limited pluralists.

Theophrastus’ reference to Plato as coming later might seem to have more point if he treated Plato after all the Presocratics than if he just compared him with the other limited pluralists, but it seems more natural, given that Simplicius’ discussion of the unlimited pluralists has yet to come at this point in his treatment, to take Simplicius’ τοὺς ἄλλους as meaning “limited pluralists”.348 So, if Theophrastus treated Plato after all the Presocratics and not as the last of the limited pluralists, Simplicius either misunderstood Theophrastus’ τούτοις and quoted Theophrastus carelessly, or meant “all the Presocratics” by τοὺς ἄλλους and thereby expressed himself carelessly.

Simplicius has the Pythagoreans, rather than Plato, last in his list of limited

347 It seems beyond doubt that the two are intended by Simplicius to refer to the same group of people.

348 It is perhaps worth pointing out that in Theophrastus’ De sensibus Plato is treated as one member of a wider category, i.e. those who believe in perception of like by like. Plato is treated, in what Baltussen labels part one of the treatise, ahead of Empedocles and Alermaeon (Baltussen 2000: 15).
pluralists. But this does not necessarily entail that Theophrastus had done the same. It is perhaps easier to suppose that Simplicius added the Pythagoreans at the end of his list of the limited pluralists because, being a Platonist, he had a special interest in Pythagorean theories. The brevity of Simplicius’ report on the Pythagoreans encourages this inference. The fact that the Pythagoreans are considered in Aristotle’s *Metaphysics* A. 4. 985b23-986b9 and A. 5. 987a13-987a28, but not in Aristotle’s *Physics* might suggest they would not be included in Theophrastus’ discussion of physical theories of matter.

Although this matter cannot be settled with certainty, it seems likely that (a) Theophrastus *did* treat Plato at the end of the limited pluralists. But since Epicurus in IIΦ XIV did not discuss a category of limited pluralists as such, there is no indication

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349 Simplicius adds non-Theoprastean material elsewhere (e.g. the end of fr. 224 FHS&G, where he introduces reports by Nicolaus of Damascus and Alexander of Aphrodisias). And Simplicius could introduce non-Theophrastean material without saying so. This is shown by comparing FHS&G 224 with FHS&G 229. Xenophanes of Colophon is referred to as holding that reality is limited in 229 (which is primarily concerned with atoms); this contradicts the interpretation of Xenophanes which is explicitly attributed to Theophrastus in 224 (where Xenophanes is referred to as holding that reality is neither limited nor unlimited. It cannot be the case that the whole of 224 and 229 represent Theophrastus.

350 The system of Plato is considered just after the Pythagoreans.

351 Whether Theophrastus could have added the Pythagoreans in his *Physics* for the sake of completeness is uncertain. We know that Theophrastus filled out the details in Aristotle’s work, but introducing material from other discussions is quite another matter. The strong objection to Theophrastus having included the Pythagoreans, is that their principles certainly are not ‘physical’. 207
here that Epicurus was following Theophrastus in book XIV.

2.3.2 The detail of the arguments against Plato and air-monism.

It is well known that Epicurus in columns XXXIV-XL of book XIV, his attack against Plato's theory of σχήματα, reproduced the arguments which Aristotle had formulated against Plato's theory in his *De caelo*.\textsuperscript{352} Sedley holds that Epicurus drew the arguments not from the *De caelo* itself, but from Theophrastus' ΦΔ, where Theophrastus had redeployed Aristotle's criticism of Plato.\textsuperscript{353} He puts forward two points to show that Aristotle's arguments come to Epicurus through Theophrastus.\textsuperscript{354} First, he remarks that while Theophrastus' influence can be clearly detected in Epicurus, there is no such clear cut case for Aristotle's influence in Epicurus' works (notwithstanding the fact that far more survives of Aristotle's works than of Theophrastus' works). Second (1998: 184), he points to the fact that Epicurus wrote a Προς Θεόφραστον (above page 48), but that there are no comparable titles for Epicurus disagreeing with Aristotle.

However the testimony of *PHerc*. 1005 is problematic for such a theory. Sedley (1998: 183, note 54) has to play down, following Sandbach (1985: 4-6), the importance

\textsuperscript{352} Arrighetti (1973: 603) emphasises Epicurus' dependence on the arguments in *De caelo* Aristotle.


\textsuperscript{354} Sedley is unconvinced by scholars' attempts to establish a relation between Aristotle and Epicurus. Bignone had thought that Aristotle' lost 'exoteric' works only were used by Epicurus, Gigante argues that Epicurus knew of Aristotle's school treatises as well.
of PHerc. 1005 (Philodemus Πρὸς τοὺς [ἐπαίρους]) fragment 111 which is part of a letter. The context, although fragmentary, suggests that this was a letter by Epicurus:

προσέ[τ]αξα

]ον ύμίν

].. κτα[..

περιέστα[ι]

]. α[..

... τὸ περὶ[Σω]κράτ[ους
tοῦ Ἀριστίππου [κ]αὶ Σπευ-
[σίππου τοῦ] Πλάτωνος
[ἐγκώμιον] καὶ Ἀριστοτέ-
[λος τὰ] Ἀναλυτικά καὶ
[τὰ Περὶ] φύσεως, διαπερ
ἐνεκρίν]ομεν”. ἐπὶ Εὔβοι-
λου ... .

335 In fragment 38 Epicurus quotes a letter from Epicurus to Leonteus. Fragment 114 (Angeli 1988: 168) also appears to be from a letter by Epicurus; the same fragment preserves the opening of another letter: ἐπὶ Ὁσατοῦ [δὲ τοῖς Μενοικέως υἱοῖς ... Fragment 116 (Angeli 1988: 169) is almost certainly a letter by Epicurus in which he describes his experience as a student of Nausiphanes.
Sandbach (1985: 5) thinks Epicurus is not referring to Aristotle’s *Physics*. First (a), there is no space for the supplement [τὰ περὶ] φύσεως in line 11 if one reads with Sbordone (1947: 75) - [λοις τ] ἀναλυτικα in the similar gap in line. Angeli (whose text I print) gets round the difficulty by following Usener in thinking that there was no crasis; a viable alternative is, as Sandbach himself (1985: 5) points out, reading τὰ τ’ ἀναλυτικα with Croenert.

Sandbach’s further objections are that (b), although Aristotle several times refers to the *Physics* by the words τὰ περὶ φύσεως, he also uses the phrase to refer to *De caelo* (*Metaphysics* A. 8. 989a24), and (c), one might supplement ἐ[γράφ]ομεν, rather than ἐ[κλέγομεν]ν. I exclude this because it would be odd for Epicurus to mention in the same breath Aristotle’s *Analytics* and his own ΠΦ, and because the imperfect tense is slightly odd. Various other restorations are possible for line 9: Angeli adopts Usener and Croenert’s ἐ[σερεὶν]ομεν, Sbordone and Arrighetti have proposed ἐ[κλέγω]μεν, and Diano ἐ[φεῦρ]ομεν. All of these however involve knowledge of the existence of such works by Aristotle, and Epicurus’ intention of reading these works.

One cannot perhaps be certain that fragment 111 is evidence for Epicurus having read Aristotle’s *Physics* specifically, but it seems beyond doubt that the letter proves

356 And in any case even if Aristotle did not, Epicurus might have. Compare the situation with Theophrastus’ *De caelo* which was also known as Φοινικα III (below note 362).

357 Sedley (1998: 183, note 54) has it that even if the reference is to Aristotle’s *Physics* “there is no indication whether he has read it, or if he has, at what date (the immediately following letter is dated 280/279 B.C., which would be too late to play a part in our story)”. Yet there is nothing in the text to indicate that the
that Epicurus knew of Aristotle’s *Analytics*, and another physical work by Aristotle.\(^{358}\)

The view that Epicurus did not consult Aristotle’s works seems hardly tenable in view of this testimony. It seems risky, then, to discount the possibility that Epicurus got the arguments directly from Aristotle because he did not know Aristotle’s (school-)works.\(^{359}\)

The arguments in ΠΙΙΙ XIV correspond to those in *De caelo* so closely that it is tempting to think that Epicurus had Aristotle’s arguments in front of him (or well impressed in his memory) when he composed book XIV. Unfortunately it is unclear how Theophrastus interacted with Aristotle’s text, both generally in his works, and specifically in the sections criticising earlier thinkers. It is perhaps conceivable that at times he simply ‘copied’ Aristotle’s arguments.\(^{360}\) Whether he did this habitually, or just occasionally, two letters were close in date; they may be quoted together because they touched on a similar theme, perhaps Epicurus’ education.

\(^{358}\) Mansfeld (1994: 32-33) endorses this view. He argues that the reference is to the *Analytica Posteriora*, since Epicurus rejected formal logic.

\(^{359}\) Sedley himself (1976b: 126-127), in rejecting Bignone’s view that Epicurus knew only Aristotle’s early works, writes: “that Epicurus knew at least some of Aristotle’s school treatises is virtually proved by Epicurus or by one of his contemporary followers, in which Aristotle’s *Analytics* are specifically named”. It seems interesting that Epicurus knew personal details about Aristotle’s life (Sedley 1976b: 125-126).

\(^{360}\) Determining this is problematic because the works in which Theophrastus is most likely to have ‘copied’ Aristotle survive only in second-hand reports, which tend to emphasise disagreements with Aristotle rather than agreements. Baltussen (2000: 130 and 236) argues that in the case of the criticism in *De sensibus* Theophrastus produced his own arguments either from the *Timaeus* directly or from an ἐπιτομή that he himself had made of the passages of the *Timaeus* which regarded sensation, and did not reproduce Aristotle’s arguments.
It seems worth pointing out that the reports on Plato in Simplicius' commentary do not resemble the details of the criticism in Aristotle's *De caelo* and *ΠΦ* XIV. And the surprisingly brief entry for Plato in Aëtius (I. 3. 21), which speaks of three ἄρχαί, certainly shows no resemblance at all to the criticism in *De caelo* and *ΠΦ* XIV. This may suggest that the *ΦΔ* did not include, in the entry for Plato, the arguments Aristotle had used in the *De caelo*. What is more, book three of Theophrastus' Φυσικὰ was also known under the title Περὶ οὐρανοῦ, which may suggest that Theophrastus' Φυσικὰ, rather than the *ΦΔ*, would include the arguments Aristotle had used in the *De caelo*.

Theophrastus' report and criticism of earlier theories in *De sensibus* is relevant in this context. It would fit Sedley's theory nicely if Theophrastus' treatment of sensation

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361 Text 230 FHS&G reports that Theophrastus wrote that Plato had two principles: τὸ μὲν ὑποκείμενον ὡς δλην δ προσαγορέει 'πανδεξές', τὸ δὲ ὡς αἴτιον καὶ κινῶν δ περιάπτει τῇ καὶ τῇ ἀγαθοὶ δυνάμει. This does not however mean that Theophrastus could not have discussed the shapes of the *Timaeus* in the text Simplicius was using, and Simplicius left this out. As Professor Sharples points out to me discussion of Plato's triangular shapes would probably only have been included if Theophrastus had a very full treatment of all aspects of each theory (rather like Theophrastus' *DS*). The scale of the work would then have been massive (and if the work in question is the Φυσικὰ we know that Theophrastus had moved on from physics in the narrow sense to psychology by book IV, and to issues about οὐρανὸς by book III).

362 Text 176 FHS&G lines 1 and 2 “Theophrastus in the third (book) of the *Physics, or On Heaven*, divides . . .”.
appeared, in similar form, in the ΦΔ. But it is unclear what the relation is — if there is one — between De sensibus and the Theophrastean material in Simplicius’ Physics commentary, which is thought to ultimately reproduce the ΦΔ.

Diels (D.G. 114 and 222-224), following Usener, argued that De sensibus was originally part of the ΦΔ. But Baltussen (2000: 239-240) thinks that Diels “considerably exaggerates the significance” of the similarities between the De sensibus and Aëtius IV 8-23 in the way of comparing thinkers and grouping them together on some points: Diels ignores the considerable differences between the two texts. In the case of Anaxagoras, Democritus, Parmenides and Plato, the parallels are fewer than the unrelated entries. Baltussen is unable to decide whether the De sensibus was part of the ΦΔ.

I conclude that, in spite of clear indications that Theophrastus influenced Epicurus generally, there are no reasons to suppose that Epicurus drew Aristotle’s arguments against Plato’s theory of σχήματα from Theophrastus’ ΦΔ, rather than from

363 Diels considered the discussion is too detailed to be appropriate as a prelude to an exposition of Theophrastus’ own doctrine in the psychological section of his Physics (above note 361). The point is taken up by Gottschalk (1967: 20). Baltussen (2000: 240) may be right that the objection is not decisive.

364 For Plato Baltussen has just one possible parallel out of six entries.

365 Baltussen (2000: 243) is unconvinced by Steinmetz’s proposal that the DS was one of a series of monographs which were grouped under the title ΦΔ. Baltussen’s conclusion (2000: 244) is that the DS was a hypomnemantic work, intended to map out all relevant views about perception (from a physiological point of view). Baltussen concludes that the “work may well have been a preparation for (but not necessarily a prologue to) the exposition of Theophrastus’ own doctrine.”
Aristotle himself.

Let us now consider Epicurus’ criticism of air monism. Leone (1984: 34-35) thinks that Epicurus’ treatment of ‘Anaximenes’ corresponds to that of Theophrastus, but does not go into details, except for saying that Theophrastus attributed condensation-rarefaction to Anaximenes. The fact that Theophrastus credited Anaximenes with a theory of condensation and rarefaction is not enough to show Epicurus depended on Theophrastus. There is no indication that Theophrastus considered specifically the problem of whether air could turn into water and of evaporation, as Epicurus does in book XIV. The heavily critical report of Anaximenes’ theory on the fundamental nature of matter in Aëtius (I. 3. 4), which according to Diels (D.G.: 180) is Peripatetic, seems to have nothing in common with the criticism in ΠΦ XIV.

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366 Philippson (1937: 471-473) on the other hand thought Epicurus’ precedent was Aristotle’s Physics 1.2.

367 I have myself used the attribution of condensation and rarefaction to Heraclitus in the critique to argue that Lucretius did depend on Theophrastus (above pages 38-39). The difference is that Anaximenes might have mentioned condensation and rarefaction in his work, Heraclitus — it would appear — did not.

368 The fact that Epicurus wrote a monograph on Anaximenes (Diogenes Laertius X. 28) may, but does not necessarily, suggest that Epicurus did independent research on the Presocratics. He could have drawn the information for his monograph from Theophrastus, who had written one book On the doctrines of Anaximenes himself (FHS&G 137, 27).
2.3.3 The dating of ΠΦ XIV and of Theophrastus' ΦΔ

Sedley (1976a: 44-45, note 73) suggests that Epicurus wrote books I-XIII of ΠΦ before 307 or 306 B.C., but only started work on ΠΦ again in 300, when he composed book XIV. It was the appearance of Theophrastus' ΦΔ — Sedley has it — that encouraged Epicurus, after five years, to resume work on ΠΦ. This may have been the case, but the evidence is far from compelling.

I agree with Sedley (1976a: 35-36) that Epicurus wrote ΠΦ XI while still in Lampsacus. The geographical descriptions in fragment I column III (Vogliano) of ΠΦ XI (P Herc. 1042), are appropriate to the landscape of Lampsacus, but not to that of Athens. Epicurus would not have expressed himself in this way if he was writing in Athens. Book XI was written by 307 or 306 B.C.

The final subscriptio to P Herc. 1148, the roll of ΠΦ XIV, carries the name of Clearchus, who was ἄρχων in 301/300 B.C. 369 Sedley (1998: 128, note 95) and Obbink (1996: 351-352) disagree on whether, as the former thinks, the date of the subscriptio is the date of Epicurus' original composition of the books ΠΦ, 370 or the date is that of

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369 It should be noted that traces of ink which have not been noticed before appear quite clearly in the multispectral images of the papyrus, below the name of the ἄρχων. Unfortunately I was not able to decipher them.

370 Clay (1998: 42-43) explains the fact that only books XIV-XXXVII have the name of the ἄρχων in the subscriptio because after settling in Athens Epicurus decided to preserve his writings in a way similar
a later copying or redaction by a scribe or διορθωτης (possibly for publication, after Epicurus had carried out revision on them). Obbink bases his theory on reading εκ] των ἀρχαιων, following the book number, in the subscriptio to ΠΦ XXVIII (PHerc.1479/1417), but Sedley suggests rather περι] των ἀρχαιων and that τα ἀρχαια are Epicurus' iuvenilia. The issue cannot be settled on the available evidence, but Sedley's view that the subscriptio gives the date of composition is perhaps more reasonable.371 I assume for the sake of argument that the date of the subscriptio of the papyri ΠΦ refers to the date of composition, reserving judgement on the specific case of PHerc.1479/1417, where I find εκ] των ἀρχαιων more convincing.372

It seems likely that at least six years intervened between ΠΦ XI and XIV. But I cannot see sufficient grounds for thinking that Epicurus had written ΠΦ XII and XIII before returning to Athens. This contention rests on the supposition that Ad Pythoclem, to the laws and decrees, the δημοσια γραμματα, of the state of Athens by depositing them in the Metroon. Epicurus would have been the first and only individual to have done this. This would explain the name of the Athenian ἄρχων in the subscriptio. However it would appear from Leone (2003) that the final subscriptio to book XXXIV did not include the name of the ἄρχων (as it did not include a total reckoning of the στιχων).

371 Whether the texts which ended up in Herculaneum were ever prepared for 'publishing' is perhaps questionable, since they were always copied within the Epicurean school (note Epicurus bequeathing his library to Metrodorus in Diogenes Laertius X. 21).

372 One need not assume that if the date here is that of an official revision this entails the same even also for those papyri where nothing is said about the old copies.
which according to Sedley epitomised those books, was written around 306 B.C.\textsuperscript{373} Sedley argues that Pythocles must have requested a summary of meteorological theories when he was still young, since he was an exceptional student. But Sedley’s inference (1976a: 45) that Pythocles was born in 324 is far from certain.\textsuperscript{374} Even if he was, is it really inconceivable that Pythocles asked for such an epitome when he was 22 years old (and that Epicurus wrote books XII and XIII while he was in Athens), especially if Pythocles was living in Lampsacus and exposed to the theories of the Eudoxans? And is it indeed not more likely that Pythocles needed guidance because having been left behind in Lampsacus could not attend the lectures which lead to the composition of books XII and XIII (assuming that \textit{Ad Pythoclem} summarises the content of both these books in addition to XI, below Appendix (c) pages 408-410)?

A further obstacle to Sedley’s theory is that there is extremely little evidence

\begin{itemize}
\item \textsuperscript{373} The dating of \textit{Ad Pythoclem} is also relevant to the dating of \textit{Ad Herodotum}, since the latter was written before the former. Indeed the cross reference might indicate that the two were written in short succession. According to Sedley Epicurus wrote \textit{Ad Herodotum} near the time of his move to Athens, when he had already written IIΦ XII and XIII.
\item \textsuperscript{374} A letter preserved in Philodemus \textit{Πραγματειαi} XX and addressed to Cronius, in all likelihood written by Metrodorus after 306 B.C., shows that Pythocles was with Cronius in Athens at the time of the letter ("\begin{math}\pi\alpha\rho[\dot{a}]\ \varsigma\omicron\omicron\omicron\"\end{math}) and was looking after Cronius’ sons. It is unclear whether Pythocles was doing so in Lampsacus (and Pythocles was on a short visit to Athens at the time of the letter) or in Athens (Sedley 1976a: 31). Pythocles did not die at the age of eighteen (Sedley 1976a: 45). Pythocles was Metrodorus’ pupil; since Metrodorus was born in \textit{circa} 331 B.C. he would have been only 7 years older than his pupil.
\end{itemize}
about the date of Theophrastus' works, and ΦΔ in particular. Some works by Theophrastus were much earlier. Gaiser (1985: 28-35 and 47-50) argues that Περὶ πυροδὸς was written in the early years in Assos (347-345 B.C.), although this depends on Gaiser's taking of the expression ἐν κύκλῳ as “in the neighbourhood”, which is not certain (Sharples 1998: 719, note 518). There seems to be no positive reason to think that ΦΔ was made available to copy around 300 B.C. It is even conceivable that Epicurus had ΦΔ available to him throughout his ‘working-life’.

2.4 Conclusion

The details regarding the opponents criticised leave me in no doubt that books XIV and XV were not Lucretius’ source in lines 635-920 of book I. Lucretius’ and Epicurus’ criticism shows two notable differences in the method. The distinction into categories, on which Lucretius’ account is based, was not, it would seem, Epicurus’ starting-point. And while Epicurus seems to limit himself to specific points relating to how what we experience is created, Lucretius accumulates arguments against the physical theories of opponents, on various aspects of their theory.

The two texts are not ultimately comparable, since in Epicurus the polemic was secondary, while it was Lucretius’ primary concern. Yet it is perhaps worth pointing out

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375 Pliny the Elder (Naturalis Historia 19. 32 etc.) gives 314 B.C. as the date for the work he was using, which is taken to be Theophrastus’ Historia Plantarum from correspondences of the citations (Sharples 1995: 154-155).
two methodological points of contact between Lucretius’ and Epicurus’ criticism. The first is the fusing together of report and criticism, which results in the fact that opponents’ theories are very sketchily reported. A second shared aspect might be the reticence to name opponents, and in particular including a further category of opponents by a generic “those who . . .”. Neither aspect is at all peculiar. Both seems to have been trademarks of ‘Epicurean doxography’.

Given that ΠΦ XIV and XV could not have been Lucretius’ source, I shall now turn to considering whether Lucretius in the critique used the same ‘philosophical’ source he had used thus far in DRN I or whether there are indications that, as commentators have suggested, he used a different source.

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376 And one can compare Theophrastus’ reticence to name opponents in at least some of his works, e.g. the Metarsiologica. Similarly Anaximander is not named in Aristotle’s references to him collected in KRS: 113-114.
Chapter 3. Lucretius' use of sources in DRN I

Scholars have suggested that for lines 635-920 of book I Lucretius abandoned the primary source-text he had used thus far in the book, and turned to a different source. According to Giussani (1898: 85) Lucretius went looking for the criticism of Heraclitus', Empedocles' and Anaxagoras' theories of matter in IIΦ. Sedley, who shares in the view that Lucretius switched to a different source to introduce the critique, relies on his claim that IIΦ XIV and XV were the newly adopted source to show that Lucretius switched sources at this point.

In the first part of this chapter (3.1-3.5) I consider how Lucretius used his philosophical sources in DRN I, and what rhetorical and artistic concerns his use of sources reveals. In the second part of the chapter (3.6 and 3.7) I discuss whether Lucretius' source for the critique is more likely to have been a text by Epicurus, or a work by a later Epicurean.

3.1 The source of DRN I 156-598 and 951-1107

Before dealing with the source of the critique specifically, we should consider what text

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377 "E andato a cercare".
was the source of the remaining lines of *DRN* I, leaving out for the moment lines 598-634 which are considered below.\textsuperscript{378} Lines 156-598 of *DRN* I deal with three philosophical themes: (a) 'nothing comes into being out of nothing' and 'nothing is reduced to nothing' (lines 156-264), (b) 'only atoms and void exist' (lines 265-482) and (c) the main characteristics of the atoms, showing that they are simple, solid, eternal (lines 483-598).\textsuperscript{379} Section (b) is in turn divided into three subsections: lines 265-328 prove (b1) the 'existence of the invisible atoms', lines 329-397 show (b2) the 'existence of void', and lines 430-482 prove (b3) that 'nothing else apart from atoms and void exists'.\textsuperscript{380}

*DRN* I 156-598, with the exclusion of lines 430-482 (b3), correspond closely to Epicurus' *Ad Herodotum* 38-41 (see further below note 872). *DRN* I and *Ad Herodotum* are connected: it looks as though both are based on a work by Epicurus more detailed than *Ad Herodotum*.\textsuperscript{381} Lucretius inherited the order of topics, as well as much of the content, from such a lost continuous work by Epicurus. Giussani suggested that

\textsuperscript{378} Pages 228-235.

\textsuperscript{379} Lines 398-417, which are not philosophical, but concerned with reflections on Lucretius' own contribution, are, in all likelihood, independent of sources.

\textsuperscript{380} Sedley's (1998: 187) suggestion that lines 418-429 are a separate section 'the all consists of body and void' is not completely convincing. Lines 418-429 sound like a resumptive passage, summarising the proofs so far. Lines 430-482 show that the other candidates for the role of independent existences, namely *eventa, coniuncta* and *tempus*, are not in fact independent existences.

\textsuperscript{381} On how *Ad Herodotum* and the ΠΦ are related, below Appendix (c) pages 405-408.
Lucretius' 'main' source was Epicurus' Μεγάλη Ἐπιτομή, while Sedley (1998: 186-187) argues that DRN I was derived from the ΠΦ, from book I and part of book II.

It is likely that ΠΦ, and the Μεγάλη Ἐπιτομή, would have started the treatment of physics with the sequence of topics (a) - (b) - (c). The scholium to Ad Herodotum 39 gives (b) τὸ πᾶν ἐστὶ σῶματα καὶ κενόν as a contention of ΠΦ I. It seems safe to assume that (b) followed the opening dogma (a) οὐδὲν γίνεται ἐκ τοῦ μὴ δύντος, the basis of the whole Epicurean physical system. And there are indications that Epicurus made some preliminary comments on how atoms came together in book I, so that it seems reasonable to assume that (c) the preliminary description of the solidity, simplicity and eternity of the atoms too came in book I of ΠΦ. Talk of

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382 Giussani 1896: 10. Giussani thinks, however, that Lucretius at times turned to Epicurus' ΠΦ and Ad Herodotum.

383 According to Sedley (1998: 200) Epicurus' ΠΦ did not have (b1) and (b2) as early as Lucretius does, because this material comes from the lowest level of analysis. He (1998: 201) speculates that the statement in DRN I 417, where Lucretius says that he has many more arguments apart from the one he presents, shows that he is abandoning the source he had used for (b1) and (b2). According to Sedley Lucretius signals in line 418 that he is taking up again the order of topics in ΠΦ I. Sedley does not suggest in what book of ΠΦ (b1) and (b2) would have come. Presumably he thinks book II, but this seems to attribute too much material to that book (see below page 225). I can see no reason for doubting that (b1) and (b2) could have been in ΠΦ I. Line 417 may show no more that Lucretius is leaving out some of the arguments he found in his source.

384 This came, probably, after methodological remarks, below Appendix (e) note 872.

385 ταῦτα δὲ ἐστὶν ἄτομα καὶ ἁμετάβλητα, εἰπέρ μὴ μελλεῖ πάντα εἰς τὸ μὴ δὲν φθαρίσεωθαι, ἀλλ' ἰσχύοντα ὑπομενεῖν ἐν ταῖς διαλύσεωι τῶν συγκρύσεων πλήρη τὴν φύσιν ὄντα καὶ οὐκ ἐχοντα δή ὑπὸ ὁπως διαλυθήσεται. The point is reiterated in Ad Herodotum 42 τὰ ἄτομα

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is attributed to book I by the scholium to Ad Herodotum 40. And in column XXIII of ΠΦ XXXIV (Leone 2002: 64-65), Epicurus writes ἀ[να]γκαίον αὐταῖς ἑνέρχεσθαι κατὰ τὰς πρὸς ἀλλήλας κρού[σεις, ὡς ἐν τῇ πρώτῃ γραφῇ εἰρηται, οὕθεν ἤττον παρὰ τὰς ἐξὰ[ς] ἡμῶ[ν] τ[ις] σ[υμ]μετρ[εῖα] αὐ[ταῖς ἀποτελεῖται... 387 A comparable preliminary definition of the atoms appears, in a much summarised form,388 in Ad Herodotum 41, immediately after (a) and (b). It is certainly conceivable that the preliminary description of the atoms followed the proof of their existence in ΠΦ I.

Sedley, on the other hand, argues that (b3) and (c) came in ΠΦ book II.389 His

The συγκρίσεις are mentioned en passant in Ad Herodotum 40, perhaps reflecting ΠΦ I. Lucretius’ mention of the συγκρίσεις in DRN I 483-484 is close to the mention in Ad Herodotum. Lucretius’ account of aggregates in DRN II shows no resemblance to the ‘fuller’ (in fact very limited in scope) account of aggregates of Ad Herodotum 62.

Leone (2002: 129-130) thinks that the subject of the sentence is στερεότης. She seems right to reject Sedley’s suggestion (1998: 113, note 51) that this is not a reference to the first book of ΠΦ. According to Leone the material of Ad Herodotum 43-44 was in ΠΦ Ι, and that of 45-46 was in ΠΦ ΙΙ.

The correspondences are not as close as with the previous topics. I doubt that the fact that Ad Herodotum is not as close to DRN I here suggests that lines 483-598 come from a different source from the one used for lines 155-482. Bailey (1947: 25), who is inclined to think that the Μεγάλη Ἐπτική was Lucretius’ ‘primary’ source, thinks of 483-598 as a passage that could have come from the ΠΦ.

It seems certain that Epicurus treated topic (c) before he treated the εἰδωλα in ΠΦ II, since the εἰδωλα themselves are atomic aggregates of a special kind. Indeed it seems reasonable to assume that the detailed treatment of atomic shapes and motions (the material Lucretius reproduces, whether directly or
suggestion depends on the testimony of the scholium to Ad Herodotum 73 according to which χρόνος was a topic of book II of ΠΦ. According to Sedley (1998: 114) Epicurus considered time in ΠΦ II as part of (b), as Lucretius does: he would have simply mentioned that time is only an ‘accident’ of things, ahead of his main account of χρόνος, which came later on in ΠΦ, in book X. The main account of the συμπτώματα and συμβεβηκότα would be reproduced in Ad Herodotum 68-73, and would have been omitted by Lucretius. But it is not clear why the scholiast should only refer to the ‘lesser’ of Epicurus’ two accounts of χρόνος. It is possible that Epicurus mentioned time as part of (b) in book I, and then provided a fuller explanation of time at some point of book II.

If one accepts that Lucretius’ account of time in DRN I 459-482 must be taken as reproducing the one in ΠΦ II, one has to assume that the mention of time came right indirectly, in DRN II), would have been presented in ΠΦ II, before the εἴδωλα were treated. Sedley places discussion of the minimal parts in ΠΦ book V, but it is certainly conceivable, if not likely, that Epicurus would have used the minimal parts in the context of the discussion of the shape of the atoms, if not earlier in the context of the impossibility of infinite divisibility.

390 ΠΦ IX according to Sedley’s 1984 article.

391 The accounts of Ad Herodotum and DRN do not match exactly, although both treat time last. Sedley thinks the treatment in Ad Herodotum reproduced the fuller account of ΠΦ. We have in PHerc. 1413 a book seemingly from Epicurus’ ΠΦ (although the dialogue-format may suggest otherwise), which dealt mostly with time. Arrighetti (1973: 650) seems right that PHerc. 1413 was not part of book II. Epicurus argues against three objections to his theory of time, which suggests this response came after he had set out his theory of time in ΠΦ. It may be that PHerc. 1413 was the third time Epicurus discussed time in ΠΦ, but I do not see the grounds to exclude that PHerc. 1413 is a different work by Epicurus, perhaps a monograph on time.
at the start of book II, and that topic (b) was split between books I and II of the ΠΦ, the latter being perhaps unlikely. A further objection to supposing that (c) came from ΠΦ book II is that this would entail that ΠΦ I contained very little physical theory, but ΠΦ II a very great deal of it: the material of DRN 430-598, 951-1113 (or at least 951-1051), and all of the material of DRN II in addition to the treatment of the images.

Alternatively one can think that Epicurus only introduced (b3) the συμπτώματα and συμβεβηκότα in ΠΦ II, after having discussed (c), in book I. This would mean that Lucretius — if he was following the ΠΦ — introduced himself (b3) in connection with (b).

The problem regarding the position of χρόνος in ΠΦ does not hamper, in my view, the theory that ΠΦ was Lucretius’ main source. Leone (1993: 308) reports of two columns from ΠΦ II (PHerc. 1149 from the earlier part of the roll) which deal with the ἀπειρία of worlds (through the infinite number of atoms), just ahead of the treatment of the images (as in Ad Herodotum). Given the parallel with DRN II 1048-1089 and the correspondence between the treatment of images in ΠΦ II and DRN IV (which probably followed DRN II in Lucretius’ original plan of his poem), it seems reasonable to

392 One would have to assume that ΠΦ I was made up mostly of methodological remarks, which sounds unlikely.

393 Arrighetti (1973: 580) is inclined to discount the testimony of the scholium, thinking that the number is corrupt. This seems somewhat arbitrary. Since the number is written out in full (ἐν τῇ δευτέρᾳ), the corruption would not have been easy (unless one wants to appeal to the possibility that the corruption occurred at an earlier stage of transmission, when numerals were used).

394 Below Appendix (a).
assume that Lucretius was following ΠΦ, although this would imply that he introduced the material of the final part of book II from a different source. It is very difficult to rule out however that Lucretius followed an intermediary text, which reproduced the order of ΠΦ.

The question of where we should place topic (c) in ΠΦ determines whether topics (d) 'the all is infinite' (DRN I 951-1051)\(^{395}\) and (e) the refutation of geocentric cosmology (lines 1052-1113)\(^{396}\) came from book I or book II of ΠΦ, assuming that Lucretius did not derive (e) from a different source. It is likely in my view that Lucretius derived the treatment of (d) and (e) from the same source he had been using up to line 598. Topic (d) comes immediately after (c) in Ad Herodotum. Sedley has it that (e) came from a source different from (d), but there seems to be no compelling reason for this: (e) is closely connected to (d), both dealing with characteristics of the 'all'.

It seems conceivable that topics (a) - (b) - (c) - (d) - (e) could have fitted in ΠΦ

\(^{395}\) Woltjer (1877: 33-35) notes that Lucretius' line of argument in 984-1001 is different from the one in Ad Herodotum 42, which presents a dilemma: are (1) bodies and void both infinite, (2) bodies finite and void infinite, or vice versa, (3) bodies and void both finite? Woltjer thinks Lucretius did not reproduce Epicurus' line of argument accurately "sive quod in referendis argumentis suam iniit viam, sive quod in aliis libris Epicurus aliter rem exposuit". Woltjer (1877: 35) notes that Lucretius leaves out Epicurus' argument that "if space/void were finite, the infinite bodies would not have anywhere to go". It may be that the argument appeared in the ΠΦ but Lucretius left it out, which may explain line 417 (above note 383).

\(^{396}\) The refutation of geocentric cosmology follows from the previous arguments about how elements behave in the universe, although Lucretius does not spell out the connection. On whether the Stoics are the target of the refutation, above pages 27-30.
I, although this depends on how much space the introductory methodological remarks took up (above note 384), and whether ΠΦ treated topics in more detail (i.e. offered more arguments) than Lucretius does in DRN I. The only objection to this theory is that it implies that Epicurus was already returning to time in ΠΦ II, if he had introduced time together with the συμπτώματα and συμβεβηκότα in ΠΦ I, in connection with (b).

As for Epicurus' Μεγάλη ἐπιτομή, the scholium to Ad Herodotum 39 states that (b) τὸ πᾶν ἐστὶ σώματα καὶ κενὸν was treated κατ' ἄρχην in the Μεγάλη ἐπιτομή.397 It may well be that the order of topics at the start of the Μεγάλη ἐπιτομή was the same as that of ΠΦ. ΠΦ is perhaps preferable to the Μεγάλη ἐπιτομή for the role of primary source-text of DRN I because there seems to be a question concerning whether the account in any general ἐπιτομή could have been detailed enough to provide Lucretius with all the philosophical points we find in DRN I.399 Moreover while we know that ΠΦ was available in Italy in Lucretius’ time (in Philodemus’ library); that the Μεγάλη ἐπιτομή was also available is perhaps likely but not proven.

397 I assume this expression does not mean it was the very first topic treated.

398 Leone (2002: 34, note 278) endorses Sedley’s view that the ΠΦ was the direct source.

399 Presumably a single book would have been the norm, although there seems to be evidence that an ἐπιτομή could be in more than one book. Diogenes Laertius in FHS&G 137, 7a reports that Theophrastus’ Περὶ φυσικῶν ἐπιτομὴ was in two books. There is a similar title in FHS&G 137, 7b, which is reported to be in one book.

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3.2 Did Lucretius change source after line 598 of DRN I?

Lucretius considers the theory of minimal parts (ἐλάχιστα) in lines 599-634 of book I, which conclude (c), the preliminary description of the atoms. The position of the topic is odd, since in Ad Herodotum the ἐλάχιστα are discussed in a completely different context, i.e. after the proof that atoms cannot have πᾶν μέγεθος which leads Epicurus to consider — as the reverse of the process of atoms being so large that they can be seen — how τομὴ εἰς ἀπειρον ἐπὶ τοῦλαττον is unacceptable and so is μετάβασις εἰς ἀπειρον ἐπὶ τοῦλαττον. In 57 Epicurus says that therefore, if there were an infinite number of parts in anything (ἐν τίνι), that thing will become infinitely large. In 58 Epicurus introduces the ἐλάχιστον of things in our experience. In 59 he uses the analogy from the field of sensory objects to that of atoms to show the existence of the ἐλάχιστον of the atoms.⁴⁰⁰

We do not know in which book, or books, of ΠΦ Epicurus treated the ἐλάχιστα. Epicurus may, as Leone (1984: 68-70) suggests, have mentioned the ἐλάχιστα in ΠΦ XIV, ahead of his criticism of air-monism, since the word μεταβάσεις (which is found in Ad Herodotum 56 and 58) occurs in column III, and in column VIII in conjunction with ἐλαχιστον. It is not clear whether Leone thinks columns III-VIII dealt with the ἐλάχιστα, or the ἐλάχιστα were only mentioned incidentally. It is certainly possible that Epicurus mentioned the topic in book XIV, although the

⁴⁰⁰ The argument in DRN I 628-634 is comparable to the last sentence of Ad Herodotum 59.
evidence is weakened by the fact that ἐλαχιστα could have been the adverb. Even if Epicurus treated the ἐλαχιστα in book XIV, this does not entail that he could not have already treated the topic in earlier books of ΠΦ. Sedley (1998: 133) suggests that the ἐλαχιστα were treated in ΠΦ V, where Epicurus would have given his full description of the atoms. His evidence for assigning the full description of the atoms to book V is the order of Ad Herodotum, and DRN II. It would not be surprising, though, if Epicurus had mentioned the ἐλαχιστα earlier on in ΠΦ, whether in the context of the preliminary description of atoms, or of infinite divisibility.

Furley argues that Lucretius himself introduced the doctrine of the minima as part of (c) in line 598, by turning to different sources. Lucretius thought that he had better make clear immediately that the theory of minimal parts can be reconciled with the

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401 According to Bailey (1947: 701) it is likely that Lucretius used a work other than the Ad Herodotum, "probably the Μεγάλη ἐπιτομή, in which the doctrine occurred in a context like that here". But could the treatment in the Μεγάλη ἐπιτομή have been detailed enough to contain the treatment of the minima Lucretius drew from? A further conceivable candidate is perhaps Epicurus' Περὶ τῆς ἐν τῇ ἄτομων γωνίας (Diogenes Laertius X. 28).

402 The shape size and weight of the atoms is treated in DRN II. Lucretius mentions the minimae partes in a similar context in DRN II 485, where he is proving that atoms can only have a limited number of shapes (lines 478-521).

403 Furley (1967: 41) considers DRN I 599-634 "neither a set of coordinate, independent arguments nor a single articulated unit of reasoning", suggesting that Lucretius drew the arguments "from a variety of sources" without organising them in a coherent order. Furley thinks that the theory of the minima was not originally part of the argument for the existence of the atoms. Long and Sedley (1987: 41) similarly think that Lucretius' use of the theory of the minima is "methodologically questionable".
indivisibility of the atoms. And indeed part of Lucretius’ rhetorical technique is presenting the reader with examples which prima facie oppose his arguments, rather than keeping silent about them.\textsuperscript{404} But if Lucretius was worried that the minima seemed a stumbling block for atomism, it is hard to understand why he did not make the point explicit.

Lucretius presents the existence of the minima as a further argument to show that atoms exist, and that they are solid, eternal and simple.\textsuperscript{405} Line 609 sunt igitur shows that the existence of the minima is presented as a proof of the existence of the atoms: since minimal parts exist which are inseparable from one another, atoms which are solid and eternal can and do exist. It is because atoms can be divided, in thought,\textsuperscript{406} into smaller parts (the \textgreek{eX&xioza}) that they can be solid, have a shape, be physical entities

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{404} Lucretius has already presented observations which are prima facie contrary to his theory, in DRN I 487-496. The tone of DRN I 370-397 is also perhaps comparable.
\item \textsuperscript{405} Turn porro (line 599) is one of the expressions by which Lucretius introduces new arguments (cf. line 520), although he does not use it invariably in that way. It introduces here the last argument in Lucretius’ list of nine. It is questionable whether praeterea of line 615 (introducing the argument ‘if minimal parts did not exist large and small could not be differentiated’) and denique of 628 (introducing the argument ‘if minimal parts did not exist nature could not re-create the world’) should be considered separate arguments in addition to the preceding series, as proposed by Bailey (1947: 700) and Sedley (1998: 199). The purpose of these lines is proving the existence of the minima, rather than the existence of atoms.
\item \textsuperscript{406} Lucretius was probably aware of the distinction divisible in thought / divisible in practice. Although he does not state that the division is made in thought, he repeatedly states that the minima cannot exist as separate physical entities: at 603-604, 608, 611 and 628-634. If Epicurus made the point explicit in \textsuperscript{11} damage, Lucretius (assuming he was using \textsuperscript{11} damage) decided to leave the detail out here.
\end{itemize}
\end{footnotesize}
and therefore have the movements necessary for creation (differently from the \( \varepsilon \lambda \dot{\alpha} \chi \sigma \tau \alpha \) themselves which are not separable in practice). Lucretius only mentions the reason why the minima are needed for the atoms to be solid and eternal at 608-614 and 623-627.\textsuperscript{407} It may well be that what was originally considered as a requisite for the existence of the atoms is here presented incorrectly as a proof of their existence.

One cannot exclude that the source text Lucretius was using for the main body of \( DRN \) introduced the doctrine of the \( \varepsilon \lambda \dot{\alpha} \chi \sigma \tau \alpha \) as part of the preliminary description of atoms, as Giussani (1896: 73-75) thought. It is conceivable that Epicurus first mentioned the \( \varepsilon \lambda \dot{\alpha} \chi \sigma \tau \alpha \) in his preliminary description of the atoms, which presumably came in either book I or, perhaps less probably, book II of \( \Pi \Phi \).\textsuperscript{408} He may have felt the need to stress in his exposition, which probably reflected his actual teaching, that the doctrine of theoretical divisibility of the atoms is not in conflict with the physical indivisibility of the atoms,\textsuperscript{409} possibly turning to his own advantage an opponent’s objection that what does not have parts cannot be a physical existence, nor have shapes and movement. There is a logical connection between line 598 and 599, although Lucretius does not make that connection clear at the outset of the passage, by implying

\textsuperscript{407} It is puzzling that in 623-627, where Lucretius draws a conclusion after the proofs, the reference to atoms in 626 (\textit{illa quoque}) is rather unclear. It is presumably meant to pick up the mention of the \textit{primordia} in line 609.

\textsuperscript{408} Above pages 222-225.

\textsuperscript{409} Furley (1967: 41) remarks that theory of minimal parts is a “stumbling block” rather than supporting argument for the theory of elements. He concludes that Lucretius unsuccessfully introduced the \textit{minima} at this point.
that the *minima* are an argument for the existence of the atoms.

The question of how line 599 is connected to what precedes it is affected by the problem of whether lines were lost after line 599. The general consensus of recent editors is to retain the text of the manuscripts. Munro’s lacuna does not even appear in the *apparatus* in the latest edition of Lucretius (Flores 2002), nor does Kenney raise the point in reviewing Flores’ edition (*Classical Review* 2004: 366-370). Munro (1886a: 59) suggested that the text ran thus:

\[ Tum porro quoniam est extremum quodque cacumen \]

Corporibus, quod iam nobis minimum esse videtur, (599a)  

debet item ratione pari minimum esse cacumen (599b)  

*corporis illius quod nostri cernere sensus*  

*i am nequeunt: id nimirum sine partibus extat.*

Munro (1886b: 79-80) notes that (1) lines 749 -752 support his suggestion,\(^{410}\) the similarity between the two passages being characteristic of Lucretius,\(^{411}\) that (2) the emended text makes it possible to explain the *iam*,\(^{412}\) which is redundant if one keeps the text of the MSS, and that (3) Epicurus uses exactly the same analogy in *Ad Herodotum*.

\(^{410}\) Ernout (1924: 130) objects to Munro that the *quodque* is not comparable to *cuiusque* of *DRN* I 749, suggesting that the *quaeque* of *DRN* I 578 is closer.

\(^{411}\) On Lucretius’ use of repetition below pages 367-368.

\(^{412}\) Munro explains that Lucretius’ *iam* implies “that when you arrive at the atom, it is already far below the ken of sense”, comparing *DRN* II 312.
Furley (1967: 31-33) adds that (4) the effectiveness of the argument is much improved if one postulates a lacuna at this point. The transmitted text takes for granted, without proof, the existence of indivisible minima in the atoms. It is only if one accepts the lacuna and supplement that the existence of minima has a proof, through analogy, and in turn the solidity of atoms with shapes is possible. Lucretius, or his source, is saying: “we see there are visible minima in all things [as for example the corner of a table], so there must be visible minima in what is beyond our senses, and these will themselves be without parts”. It may be that the analogy extends also to “just as the corner cannot be detached from the table so the minima cannot be detached from the atom either”.

Three considerations may be added in favour of supposing a lacuna here. First (5), it is odd, if not misguided, for Lucretius to have used the analogy in its full force only in lines 749-752, the later of the two passages. Second (6), the use of the long periphrasis in line 600 to mean “atom” is much easier to understand with the text as proposed by Munro. Third (7), the textual corruption would have been encouraged not only by homoeoteleuton on cacumen (Furley 1967: 32), but also by the fact that both

413 Above page 228.

414 Furley thinks Munro’s restoration is “on the right lines, though I should prefer something which stated explicitly that the first corpora are visible”.

415 The quodque of line 599 has troubled editors. According to Bailey (1947: 705) it means “in each case”, although it could possibly imply “a series of extreme points” anticipating 605. Giancotti (1994: 432) follows Bailey and takes quodque as “‘in ogni caso’ (cioè ‘sempre’)” although he grants there is a difficulty here.
line 599a, and 600 started with corpor-. A further point may be that (8) Lucretius’ expression naturam corporis is a rather odd way of referring to the atom, but easier to understand if he meant to refer to an object in our experience.

There are two possible objections to Munro’s restoration. First, line 601 comes to have a rather odd rhythm. There would be a strong break in the line with id effectively starting a new sentence. The emphasis would fall totally on the caesura in the second foot, with no emphasis on the caesura in the fourth. A second possible objection is that we have no evidence that Epicurus used the analogy to prove the existence of the ἐλάχιστα rather than the possibility of their existence. But in Ad Herodotum — the only available evidence for his theory of the ἐλάχιστα — Epicurus had no reason for elaborating the physical argument, as Furley (1967: 30) remarks. It is conceivable that Epicurus used the analogy to show that the minima actually exist elsewhere. Neither objection is decisive against Munro’s proposal.

If one accepts Munro’s lacuna, the connection between line 598 and 599 is somewhat more satisfactory, although it remains unclear why Lucretius did not indicate at the outset of the section that the minimal parts are required for the existence of atoms which have the varios conexus pondera plagas concursus motus. It is difficult to decide on the present evidence whether Lucretius abandoned his main source at line 598 or at line 634 (or at both line 598 and 634). The theory of the ἐλάχιστα may have been connected with the existence of solid and aetemal atoms in Epicurus. Much depends on what one makes of the anticipation in lines 633–634 (see below pages 236–237 and 240),

416 Long and Sedley 1987: 42.
and the idea of aggregation implied in line 611. If one assumes that these anticipations are due to the fact that Lucretius had changed source by introducing the minima, then it is possible, if not likely, that both the section on the minima and the critique come from the same source, given that the critique presupposes at many stages in the argument aggregation and motion of the atoms. The hypothetical source would have stressed how the minima made it possible for the atoms to have movements and collide, and then emphasised that it is because of the variety of the aggregations and movements of the atoms that Epicurean theory was superior to that of the monists, of the limited pluralists and of Anaxagoras.

3.3 The critique does not derive from the same source as 155 ff.

Lucretius introduces the critique of rival theories of matter immediately after proving that (c) the primordia, being indestructible and eternal, are the στοιχεῖα of the universe. Yet it is unlikely that Epicurus would have had a critique of the same kind in the same position in ΠΦ. We have seen above (pages 222-227) how we have many topics attributed to the first two books of ΠΦ. And it seems improbable that Epicurus would have interrupted the sequence of arguments, which leads naturally to (d) τὸ πᾶν ἄπειρον ἐστι after (b) τὸ πᾶν ἐστὶ σῶματα καὶ κενὸν and its corollary (c).

417 Ad Pythoclem 86 suggests, and Aëtius states (I. 3. 14-18), that Epicurus did not think of τὸ κενὸν, Lucretius' inane, as an 'element' itself. See Sedley (1982: 175-177) for how Epicurus differed in this from the earlier atomists.
preliminary description of the σωματα,\(^{418}\) and introduced systematic criticism of the Presocratics’ theories of matter, before he had explained how atoms can themselves ‘produce’ stuff in our experience (the material which Lucretius presents in \textit{DRN} II). A further point is that, since Epicurus attacks the monists’ use for condensation and rarefaction and Plato’s theory of shapes in \(\textit{ΠΦ} \text{ XIV}\), it seems unlikely that there was a systematic and comprehensive refutation of earlier thinkers’ theories on the στoιχείον in \(\textit{ΠΦ} \text{ I}\), or \(\textit{ΠΦ} \text{ II}\).\(^{419}\)

We have seen in chapter 1 how the insistence on disposition and movement of the atoms in the \textit{critique} is striking,\(^{420}\) since such phenomena are only explained in \textit{DRN} II. It seems odd that Lucretius should introduce this important doctrine in the context of rival theories, rather than as part of his positive exposition of Epicurean theory. The anticipation should perhaps be explained by supposing that Lucretius imported the references to aggregation and motion of the atoms from his source, which may have criticised the Presocratics in the context of the combinations and motions of the atoms.

Such phenomena are first mentioned in lines 633-634, just ahead of the \textit{critique}: \textit{varios conexus pondera plagas concursus motus}. The reference here however is

\(^{418}\) Compare Lucretius’ transition 951-957, where it is implied that the next step after having shown the existence of the atoms is to consider whether the all is infinite. This may indicate that (d) followed (e) in his ‘main’ source.

\(^{419}\) As to the lost \textit{Μεγάλη Ἑπίτομη} one can only guess that, being an epitome of the whole treatise \(\textit{ΠΦ}\) (or at least of a considerable part of it), it would not have had enough space to include systematic criticism of theories of matter in list-form.

\(^{420}\) Pages 79-80.
generally to what is needed for parts to come together and join in an aggregate, rather than to the actual behaviour of the atoms themselves. It may be that this anticipation suggests that the section of the *minima* was introduced by Lucretius at this point of the treatment, but it is not inconceivable that Epicurus himself, in a discussion of the minimal parts in either book I or book II of ΠΦ, had pointed out that anything which can combine and move must have parts.

The first reference to the *motus* in the *critique* (line 677), on the other hand, is specifically to atoms being added or subtracted to compounds, and to the change of position of the atoms in relation to one another within a compound (*abitu aut aditu mutatoque ordine mutant*). The point is reiterated in the conclusion of the argument against fire monism: *concursus motus ordo positura figurae* in line 685 and *mutato ordine* in 686. The combinations and motions of the atoms appear first as a premise to the confutation of fire-monism (lines 675-679), and then as part of the restatement of the Epicurean view as a consequence of the discussion (lines 684-689). The re-statement of Epicurean theory in lines 798-802 again refers to the combinations and motions of the atoms, with line 801 implying not only a change of relative position within the compound but also a variation of their motion within it (*ordine mutato et motu*).

In lines 818 and 819 we have three phenomena, the identity of the atoms in the compound (*cum quibus*), the arrangement of atoms both in terms of pattern and in terms of orientation within it (*positura*), and the invisible perpetual motions of the atoms

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421 On the reference of *positura*, below pages 358-359.
(motus),\textsuperscript{422} which presumably can differ from one to another. Line 822 seems to support this: \textit{alioque modo} there refers to both aspects included in \textit{positura}, and \textit{moventur} indicates the motion within compounds (which Lucretius only describes in \textit{DRN} II 100-104). And in lines 907-912 Lucretius not only mentions again such phenomena, but cross-refers to his remarks to that effect earlier in the \textit{critique}.

The insistence on the disposition and motion of the atoms could be explained in two ways, either by saying that (1) it is taken over from Lucretius’ source-text, which perhaps introduced systematic confutation in the context of proving the importance of disposition and motion of the atoms, or by supposing that (2) Lucretius decided to foreshadow concepts which he was going to explain in book II. Explanation (1) is perhaps preferable.\textsuperscript{423}

It is somewhat surprising, given Lucretius’ extensive use of cross-references in the \textit{critique},\textsuperscript{424} that he presents the argument for the existence of void in 660-665 after

\begin{footnotesize}
\textsuperscript{422} Giussani 1896: 93. Giussani considers this the first clear mention of the motions internal to the compounds, anticipated only by the vague references in \textit{motus} of line 634, and in \textit{motu} of line 801. He argues that the \textit{prolexis} is a reason for considering the passage a later addition, arguing that in \textit{DRN} II 762 (= 819) the expression \textit{quos motus inter se dent atque accipient} is, contrary to what happens in our line, easily understandable and indeed necessary, since it refers to a basic moment in the explanation of colours. But the mention of line 801 seems to refer to the same phenomenon. On the suggestion that lines 803-829 are a later addition, below pages 371-372.

\textsuperscript{423} On whether Lucretius changed source at line 598 see above pages 231 and 234-235.

\textsuperscript{424} Below pages 249-250, on Lucretius’ use of cross-references, which suggest that he saw how placing the \textit{critique} at the centre of book I would serve to reinforce, by repeating them, concepts expressed earlier in the book.
\end{footnotesize}
he has dedicated lines 329-397 to proving the existence of void. This may be an indication that the source of the critique was a text which had not just proved that void exists.

Although it cannot be proved that Lucretius was not reproducing the order of topics of a text where Epicurus embarked on a critique of the Presocratics' theories of matter after the preliminary description of the atoms, the considerations made above regarding the source text suggest, I think, that Lucretius decided to introduce the critique at this point of his poem, just after he had proved the existence of the primordia and a preliminary description of them. The choice of distancing himself from his source would have no doubt laid emphasis on the new section which unexpectedly, especially for the reader who was familiar with Lucretius' 'main' source, came from a different text.

3.4 The connection between lines 634 and 635.

Let us consider the connection between lines 634 and 635. The exact reference of the quapropter in line 635 is not wholly clear. Munro (1886b: 84) thinks it refers to lines 632-634: fire cannot have the necessary conexus pondera plagas concursus motus. Giussani (1898: 85) objects that there is no reason to deny such properties "a dei supposti del fuoco, o al fuoco (all’ acqua etc.) in genere". Furley (1967: 40) defends

425 That Lucretius was using a source later than Epicurus which reproduced the contents of ΠΦ I-(II) and then embarked on criticism of the Presocratics sounds, I think, extremely unlikely.
Munro’s view that *quapropter* refers to what immediately precedes, by suggesting that the *quapropter* picks up the *propterea quia* of 631 and that Lucretius is emphasising *varios* in line 633: the minimal parts lack the *variety* of *conexus pondera plagas concursus motus*, and so does fire, “wherefore...”. This reading is ingenious, and seems to answer Giussani’s objection: fire cannot have the necessary variety. Yet I wonder whether this is what Lucretius had in mind when he wrote *quapropter*.

Bailey (1947: 714) explains the *quapropter* as referring to the entire preceding argument establishing the existence and characteristics of the atoms, or as merely resumptive, meaning “and so” as in *DRN* I 334. I doubt that the *quapropter* in line 635 is simply resumptive, and that it means “and so” without any specific reference to what precedes. *Quapropter* in line 334 does not look like a parallel for such a resumptive use. As Professor Sharples points out to me there is a connection between 334 and what immediately precedes it. *Quapropter* takes up, after 331-333, what was said in 329-330: “things are not all massed together, therefore — I am telling you — there is void”. The reference of *quapropter* here is in fact ‘limited’. In lines 557 and 794 the reference in *quapropter* is again ‘limited’ just to the preceding lines.426

But there are a number of parallels for Lucretius using *quapropter* with an ‘extended’ reference. In line 127 *quapropter* does not refer to the immediately preceding section on the soul and Ennius, but to the contention earlier in the paragraph that scientific knowledge is needed to lead a trouble-free life (lines 101-116). *Quapropter* in line 398 also has an extended reference, to all the arguments proving the existence of

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426 In *DRN* VI 998 *quapropter* is resumptive and not that far from *igitur* in meaning.
void. However line 398 is resumptive, re-stating the point made in the immediately preceding section; line 635 is different in this respect because it introduces, rather suddenly, a new point and indeed a major new section in the poem. The *quapropter* in 705 does not refer to the immediately preceding lines, but to the whole refutation of Heraclitus.

The connection between lines 634 and 635 is perhaps more satisfactory if *quapropter* logically refers not only to the immediate preceding lines, but to the entire section defining the *primordia*. That fire is not *aeternus solidus* and *simplex* is perhaps a more immediate inference than that fire does not have the necessary *varios conexus pondera* etc. I am inclined to think that the primary reference of *quapropter* is an ‘extended’ one, although this does not mean that *quapropter* cannot be read as also picking up lines 631-634. A reference to lines 631-634, which highlight a core feature of the atoms is not incongruous in itself. The thought is: “nature needs a *στοιχείον* made of up of inseparable *minima*, and therefore solid and eternal colliding atoms, so (*quapropter*) those who said that . . .”. If on the other hand one thinks with Furley that the *quapropter* in line 635 is specific and refers to the variety of movements, I would not

427 It is perhaps possible that the *quapropter* which reflect logical connections in Lucretius’ Greek philosophical source are limited and specific, while those where the connections were introduced by Lucretius are vaguer and more general.


429 It seems worth noting that if one accepts the interpretation above — that Lucretius took it for granted that fire could not be thought of as *aeternus, solidus, simplex* — the *quapropter* of line 635 would follow on well after 598.
rule out, given the number of references to such phenomena in the critique, that the criticism of the Presocratics came in connection with what the minima made it possible for the atoms to do, namely have different shapes and movements (above page 235), and Lucretius somewhat obscured the connection.

Whether the reference in quapropter is extended or limited, it seems a fair remark that it involves a fair amount of work on the reader’s part, since he has to work out for himself why fire cannot have the necessary qualities. This might have a bearing on determining whether Lucretius changed source at this point. Sedley (1998: 193) argues that Lucretius was much readier to abandon logical rigorousness for rhetorical effect, referring for example to Lucretius’ allusions to atoms in DRN I long before they have been demonstrated. If there is a logical incongruity in the quapropter it is perhaps more likely to derive from Lucretius than from Epicurus.

It might be that the vague reference in the quapropter provides a further (above pages 235-239) clue that Lucretius changed sources at this point and established himself the connection between the preliminary description of the atoms and the critique of earlier theories of matter, which forms the centre-piece of book I, culminating in lines 921-950. The fact that the reference in quapropter of line 705, one that Lucretius

\[430\] DRN I 221 would presumably be an example of this. Yet Professor Sharples draws my attention to the fact that there might not be an illegitimate anticipation in DRN I 221, but rather an argument here for everlasting “seeds”. We are again presented with a dilemma: either (1) things can perish into nothing, or (2) the fact that they do should be explained by everlasting seeds. This depends on the assumption that there is no other way to avoid the first horn of the dilemma; but this still is a less blatant assumption of the atomic theory than simply assuming the existence of atoms.
probably worked out himself, is similarly vague might be a clue that line 634 was the point at which Lucretius decided to change source.\footnote{431}

The evidence suggests that Lucretius, when he introduced the \textit{critique} at the centre of book I,\footnote{432} added material derived from a source-text different from the one he had used earlier in book I, although a question mark remains over whether he had changed source for the section on the \textit{minima} in lines 599-634. It seems worth speculating on the reasons which prompted Lucretius to interrupt the sequence he found in Epicurus.

\textbf{3.5 Why did Lucretius have the critique at the centre of book I?}

Lucretius had the long-lasting discussion on the \textit{ἀρχαίοστοιχεῖα} in mind when composing his introductory syllabus to his poem. In \textit{DRN} I 55-61 the fundamental nature of matter receives considerable attention:

\footnote{431}{The possibility should perhaps be considered that Lucretius introduced a temporary, and not wholly satisfactory connection which he would have tidied up at a later stage (sign of \textit{DRN} I being ‘unrevised’). This solution is not that far from Giussani’s lacuna.}

\footnote{432}{Sedley (1998: 190) rightly points out that the \textit{critique} comes surprisingly early in the poem: since the way in which atoms make up things by combining with one another is only treated later in the poem, in \textit{DRN} II, Lucretius could not fully exploit the incapacity of rival theories to explain phenomena as well as Epicurean atomism. It should be noted, however, that Lucretius has no problem with referring more than once, in the \textit{critique}, to combinations and movements of atoms, which he has not yet treated.}
Nam tibi de summa caeli ratione deumque
disserere incipiam et rerum primordia pandam,
unde omnis natura creet res autet alatque
quove eadem rursum natura perempta resolvat.
quae nos materiem et genitalia corpora rebus
reddunda in ratione vocare et semina rerum
appellare suemus et haec eadem usurpare
corpora prima, quod ex illis sunt omnia primis.

There seems to be a reminiscence, in lines 55-57, of Aristotle’s formulation at
Metaphysics A. 3. 983b6ff: τῶν δὴ πρῶτον φιλοσοφησάντων οἱ πλείστοι τὰς
ἐν ὅλης εἰδεὶ μόνας ὑπῆρθασιν ἄρχας εἶναι πάντων: ἕξ οὖ γὰρ ἦστιν ἄπαντα
tὰ δῦνα καὶ ἕξ οὖ γίγνεται πρῶτον καὶ εἰς ὅ φθειρεται τελευταῖον, τῆς μὲν
οὐσίας ὑπομενοῦσης τοῖς δὲ πάθεσι μεταβαλλοῦσης, τούτῳ στοιχείον καὶ
tαύτην ἄρχην φασὶν εἶναι τῶν δύνατον...⁴³⁴ Lucretius may well have derived the
formulation from Epicurus, who had in turn taken over Aristotle’s. Given the emphasis
the rerum primordia receive in the syllabus it is not surprising that Lucretius decides to
have ‘systematic criticism’ of the views of named, and unnamed, philosophers on this

⁴³³ Note that the pairing of coming to be and passing away is present at DRN I 159-214 (on ‘how
things are created’) and 215-264 (dedicated to ‘what things are destroyed down to’), and at Ad Herodotum 38-
39.
It also seems relevant that just before introducing the Epicurean *primordia* in *DRN* I 498-502, and giving the eleven proofs of their solidity, indestructibility, and eternity, Lucretius dedicates lines 489-497 to examples opposing his theory that there are *primordia* which are ever-triumphant thanks to their *solidum corpus* (485-486). This could be either a rhetorical device to make the reader trust him or, as Giussani (1898: 67) holds, a sign that Lucretius was worried by the fact that his own examples in lines 346-357 seemed to show absence of *soliditas* in things. It seems clear from lines 483-502 that Lucretius recognised the fact that experience does not, *prima facie*, confirm his theory of *primordia solido corpore*. It may well be that Lucretius felt the need to support his claim by disproving other theories on the ultimate constituent of matter immediately after the preliminary description of the atoms, because he thought that he lacked the necessary support from sense-experience. When considering something as far removed from the senses as the atoms are, opponents’ theories needed to be argued against and shown to be less appropriate. This preoccupation perhaps explains why Lucretius took the unusual step of including a ‘doxographical’ polemic section in his

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434 The tone of the discussion of opinions on the soul in *DRN* III is different, with no opponent named. On the Epicureans’ reticence to name opponents, below pages 268-269.

435 The striking *hendiadys ratio naturaque rerum*, which presumably means “the correct understanding of nature” may indicate again that *ratio*, in this case, must overcome the impression given by the senses.
Such a preoccupation however does not explain why Lucretius decided to include the *critique* at the centre of his first book, rather than elsewhere in his work. Sedley suggests that there are three reasons behind Lucretius’ decision to have the *critique* in the centre of book I. First by introducing the *critique* at this point Lucretius can “broach the theme of how philosophy can best be written”. Discussion of how philosophy should be written had to come early in the poem for Lucretius’ own statement in lines 921-950 to have full impact on the reader. This is in my view the main reason behind Lucretius’ decision to introduce the *critique* at this point of book I. We shall see in chapter 4 how Lucretius goes out of his way to focus on Heraclitus’ and Empedocles’ style of writing. Lucretius’ claim for his poetry in lines 921-950 gains emphasis by being set against the two illustrious precedents in philosophical writings. From the harsh criticism of Heraclitus’ style, to the high praise of Empedocles’, to the grand description of Lucretius’ own style, there is a development leading to the superiority of Lucretius’ poem.

Sedley’s second reason (1998: 191) regards the use of the analogy from letters of the alphabet. “Atomism’s explanatory economy” is highlighted by being compared with the physical theories of rival thinkers.\(^4\)\(^3\)\(^7\) If one assumes that (a) the analogy from

\(^4\) Although polemic may have been included in earlier didactic poetry, including systematic polemic against earlier thinkers in a poem in hexameters was certainly a bold step. The Alexandrians Nicander and Aratus had tried to revive the didactic *genre*, but in a way very different from Lucretius.

\(^7\) Sedley (*ibidem*) argues that Lucretius makes the *critique* come earlier in his treatment than Epicurus had done: the sense of urgency shows that Lucretius intended “to maximise the persuasive impact
letters of the alphabet appeared in Lucretius’ source-text,\(^{438}\) the positioning of the critique at the centre of book I may be due to Lucretius wishing to make the analogy figure prominently early on in his treatment of atoms.\(^{439}\) Thus the analogy would serve as a further, and final, proof that indivisible atoms exist. If, on the other hand, (b) the analogy was not in his source, then Lucretius might have introduced the critique at this point because it would provide the perfect platform to use the analogy. Yet thinking that Lucretius switched to the source for the critique in order to introduce the letters analogy himself seems somehow tortuous.

Sedley’s third (1998: 146) reason is that the introduction of the critique at this point creates a major structural feature of Lucretius’ poem: the end of *DRN* I and II mirror one another. By introducing the critique at the centre of *DRN* I Lucretius postpones until the end of the book the treatment of whether the universe is infinite, and the refutation of the “inward-looking” view that our world gathers around an absolute centre. The end of *DRN* II presents a similarly “horizon-expanding” topic: the existence of other worlds and the limited temporal existence of our own world.\(^{440}\) The matching of his argument in its early stages”. He points out that while Epicurus addressed an already committed philosophical audience, Lucretius is aware that his reader may give up (*DRN* I 943-945).

\(^{438}\) On whether Lucretius’ source exploited the analogy as fully as Lucretius see below pages 356-357 and 366-367.

\(^{439}\) The analogy has already been introduced, in *DRN* I 196-198 (below pages 276 and 358), to reinforce the argument in favour of the existence of atoms.

\(^{440}\) Sedley (1998: 146) argues that this aspect of the argument is not brought out in *Ad Herodotum*. He thinks this is because of condensation.
closures of books I and II provide what was promised at I 62-79, a journey beyond the limits of our world, to the infinite universe beyond. It seems likely that Lucretius saw that introducing the critique at this point would present him with the opportunity of having the argument for the infinity of the universe as conclusion to the first book, although a digression on any other topic, rather than the critique, would have achieved the same result.

Sedley argues that the introduction of the critique was part of a rewriting by Lucretius of a first draft of the poem, a re-writing which Lucretius only carried out up to book III, or the early part of book IV. None of the reasons given above has to imply a wholesale re-writing of a first draft of the poem. Lucretius could have seen the attractions of having the critique just ahead of the description of his own work at 921-950 while working at his first, and only, draft of the poem (assuming he was planning far enough ahead). Similarly it seems entirely possible that Lucretius decided to introduce the critique so that he could end the first book on a “horizon expanding motif” as he had promised in the prologue, and only later saw the attractions of making the second book conclude on a similarly ‘open’ topic. The theory that the critique was a later addition seems unfounded, although it is not easy to disprove it. A difficulty with thinking that the critique was only a ‘second-draft’ addition is that Lucretius would have produced

441 The critique would be, according to Sedley, an addition comparable to those Lucretius would have made, according to Sedley, in DRN IV, on ghosts, and in book VI, by explaining the moral lesson to be leant from the plague.

442 On the question of revision of DRN, below Appendix (a) pages 389-391.
an extremely short first draft of book I, or did not mind disposing of a considerable number of hexameters he had already composed (see further below Appendix (a) page 390).

It might be that rhetorical concerns encouraged Lucretius to add the critique at this point. It looks as though rhetorical practice would have prescribed refutation of opponents only once one has set out the issue and one's own case (which, arguably, Lucretius has done sufficiently by this point). Lucretius may have noticed how the arguments against the Presocratics gained by coming soon after the arguments in favour of the existence of void and against infinite divisibility (two points which figure heavily in the critique). Knowing that the criticism of the Presocratics in a text at his disposal emphasised repeatedly how they went wrong on void and infinite divisibility, Lucretius would have seen the attractions of inserting such a passage in the centre of book I, immediately after these two topics had been treated. This strategy adds to the strength of the confutation and in turn reinforces the points made earlier in the book.

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443 One would have to assume the supposed first draft to have been already divided into books, since books five and six have prologues (see further below Appendix (a), note 820).

444 Asmis (1983:45): "Cicero notes only that a "thesis" and "hypothesis" alike should have four main parts, a proem, narration, proof, and epilogue; the proof was to be divided in turn into confirmation and refutation". Lucretius' thesis 'atoms exist' would similarly have had refutation after the series of proofs.

445 Lucretius' strategy of having criticism immediately after proving that atoms exist should perhaps be read as being more boldly and directly polemical than Epicurus', who criticised air-monism and Plato's shapes in the fourteenth book of his treatise, long after the proof that atoms exist in ΠΦ I. This is perhaps more satisfactory than reading his strategy as defensive, showing an anxiety to do away with rival theories straightaway, part of the so called 'anxiety' critics have found in DRN. It seems reasonable to hold that the
It looks as though Lucretius’ use of cross-references supports this inference. There are five cross-references in the critique; two in the confutation of Empedocles (lines 758 and 794) and three in the confutation of Anaxagoras (lines 846 and 858-859). Two of the cross references,\(^4\) those in lines 758 and 858-859 point back to the philosophical material presented earlier in book I. Both line 758 and lines 858-859 refer to the dogma that the universe cannot be reduced to nothing and that the store of things can be replenished out of nothing.\(^4\) These are two connected points with which Lucretius, following Epicurus, has opened the treatment of Epicurean doctrine in DRN 155-264. The cross-references are meant to hammer home the essential point that things cannot derive from nothing, which in turn is a proof of the existence of the *primordia*.

3.6 Was Epicurus the source of the critique?

Considerations about what work by Epicurus might have been Lucretius’ source for the

‘anxiety’ is at least in part the inevitable result of Lucretius’ rhetorical concerns, which are highlighted by Classen (1968).

\(^4\) The remaining three cross-references in lines 794-795, line 846 and line 907, on the other hand, are references ‘internal’ to the critique. Line 794-795 refer back to the description of the four elements coming together in lines 782-788. As for line 846, this is a reference back to those who denied the existence of void (Heraclitus in lines 655-664, and the quadruple pluralists in 742-745), and believed in infinite divisibility (the quadruple pluralists in lines 746-752). On the cross-reference in line 907, above page 238.

\(^4\) This seems easier than thinking that one of the references in *utrumque* is rather to the fact that *primordia* cannot be *mollia* and *mortalis corpore*.

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critique are highly speculative, since most of Epicurus’ production is lost, and also lost are most of the titles of Epicurus’ 300 κύλινδροι (Diogenes Laertius X. 26). Nonetheless it seems worth considering whether any text by Epicurus of which we know would fit the profile.

I have suggested above (pages 235-236) that it is perhaps unlikely that Epicurus’ ΠΦ was the source of the critique, unless one assumes, with Giussani, that Lucretius went through ΠΦ looking for criticism of those three philosophers, and worked out himself the division monism-finite pluralism-infinite pluralism, each with its representatives. That Epicurus had a criticism of monism comparable to Lucretius’ criticism of Heraclitus in ΠΦ as well as the criticism of air-monism in ΠΦ XIV seems unlikely.

It is perhaps conceivable that Epicurus’ Μεγάλη Επιτομή included the systematic criticism which Lucretius reproduced in the critique. Sedley (1998: 142) doubts that a Μεγάλη Επιτομή ever existed, since it is not cited by any ancient source except the scholiast on Epicurus’ letters. There is no reference to the Μεγάλη ἔπιτομη in Diogenes Laertius’ list of Epicurus’ works. But it seems significant that Diogenes does not include Ad Herodotum in his catalogue either, although being a letter it may be amongst ἔπιστολαι, the final item in Diogenes’ list. One cannot be sure whether Diogenes derived the list of Epicurus’ works from the same source as the

448 It seems worth noting that there is no example of ‘composition by compilation’ in surviving portions of ΠΦ (book XIV is the one that comes closest), nor in Epicurus himself generally.
letters. It may be that the person who compiled the list did not think it fit to include either of the epitomes in a list which is presented as a list of Epicurus’ best works. The only epitome included in the list is the 'Επιτομὴ τῶν πρὸς τοὺς φιλοσοφοὺς, as high up as fourth in the list.

The existence of a Μεγάλη ἐπιτομὴ may be implied by Epicurus’ words in Ad Pythoclem 85, where he refers to ἡ μικρὰ ἐπιτομὴ πρὸς Ἄρτεμις. The adjective could be simply describing the work, but it may be setting this text apart from a larger epitome. Similarly a Μικρὰ ἐπιτομὴ is referred to in Diogenes Laertius X. 135: μαντικὴν δ’ ἀπάσαν ἐν ἄλλοις ἀναιρεῖ ώς ἐν τῇ Μικρᾷ ἐπιτομὴν, καὶ φησὶ: "Μαντικὴ οὖσα ἀνύπαρκτος, εἰ καὶ ὑπαρκτή, οὐδὲν παρ’ ἡμᾶς ἠγγεία γινόμενα”. Usener considers this a scholium attached to the end of Ad Menoeceum, but it is perhaps more likely that it was an integral part of Diogenes’ text. The problem is that Μικρὰ ἐπιτομὴ in Diogenes Laertius X. 135 cannot be a reference to Ad Herodotum, as the reference in Ad Pythoclem 85 explicitly is (unless one wishes to think that a portion of Ad Herodotum where Epicurus discussed μαντικὴ was lost in transmission). However this may be it seems likely that by referring to Μικρὰ ἐπιτομὴ Epicurus, and whoever wrote Diogenes Laertius X. 135, were implying the existence of

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44 Gigante (2002: 101-102) suggests that Diogenes Laertius used a roll which contained “i 3 grandi compendi, le quaranta massime capitali e una serie di doxai”, and considers the question of who edited together the letters and the Κύρια δόξαι, which were originally intended as separate works. Gigante suggests that Philodemus might have compiled such a roll. The exemplar which Diogenes Laertius used — probably in Rome — could have originated in Philodemus’ library and be found in a public library. Gigante however also considers the possibility that Philodemus had found such a roll together with the rolls of ΠΦ.

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a larger ἐπιτομή on physics.

Giussani (1898: 85) is perhaps right in remarking that there is too much detail in Lucretius' critique for it to be derived from the Μεγάλη Ἐπιτομή. Giussani suggests that the Μεγάλη Ἐπιτομή had, on theories of the elements, the kind of ‘unnamed’ criticism we find for theories of the soul in DRN III. It cannot be positively ruled out, however, that the Μεγάλη Ἐπιτομή contained criticism of the 3 categories with the same kind of detail we find in Lucretius. One could argue that the abridgement in three categories with one representative for each category would fit well a work which only devoted limited space to the refutation of earlier views on the elements. It would be more likely that the Μεγάλη Ἐπιτομή included systematic criticism of opponents on their theories of matter if the work was in more than one book. But the formulation in the scholia to Ad Herodotum, by not providing a book-reference, seems to suggest

450 Giussani is probably right that the detail of arguments such we find in DRN III to prove the mortality of the soul could not have been in any ἐπιτομή, and that they therefore came from ΠΦ. Assuming that all of the arguments in DRN III derive from a book of ΠΦ (or conceivably a monograph on the soul), there is no reason why the material in DRN III 98-135 could not derive from the same source. Giussani’s theory seems unconvincing because, in DRN III, Lucretius would have hopped from the Μεγάλη Ἐπιτομή (critical review of theories on the soul: lines 98-135) to ΠΦ (the 29 arguments for the mortality of the soul). There is no proof, however, that ΠΦ was the source for the list of arguments in DRN III, as compiling lists with series of proofs seems to have been common in antiquity: many such lists made their way into Alexander of Aphrodisias' mantissa (see Sharples, R. 'The sufficiency of virtue for happiness: not so easily overturned?' in Proceedings of the Cambridge Philological Society 2000: 121-139: 122).

451 Mansfeld (3148-3149), on the other hand, thinks that the criticism in DRN III 119-129 is derived from doxography.
that the Μεγάλη Ἐπιτομή was in just one book.

Emnout-Robin (1924: 135) suggests that Epicurus’ Ἐπιτομή τῶν πρός τούς φυσικούς was Lucretius’ source for the critique.\(^4\)\(^5\)\(^2\) The Ἐπιτομή τῶν πρός τούς φυσικούς would, presumably, have been convenient for looking up Epicurus’ criticism of Presocratic theories of matter. One may wonder whether an abridgement with one representative for each category would be necessary, or desirable, in the Ἐπιτομή τῶν πρός τούς φυσικούς, and whether such a work would not have considered Thales’ and Anaximenes’ monistic theories separately rather than in a general confutation of monism.

On the other hand abridgement may have been needed in the Ἐπιτομή τῶν πρός τούς φυσικούς depending on the number of topics treated in it.\(^4\)\(^5\)\(^3\)

To sum up, there is no evidence that any of Epicurus’ known works would have criticised the three Presocratics in a list similar to the one in Lucretius’ critique. The paucity of the evidence leaves open the possibility that Epicurus had produced such a text, and one cannot exclude that this text was the Ἐπιτομή τῶν πρός τούς φυσικούς.

\(^{4\)\(^5\) Robin thought that the work was “d’ailleurs un traité distinct ou un chapitre plus ou moins développé soit du π. φύσεως, soit des diverses ἐπιτομαὶ”. See above page 194.

\(^{4\)\(^5\)\(^3\) One may wonder whether the Ἐπιτομή τῶν πρός τούς φυσικούς would have left out Plato’ theory of matter, when Theophrastus’ Πρὸς τοὺς φυσικοὺς (FHS&G 137 8) included criticism of Plato (see FHS&G 245). Plato might have been treated separately, but it is not easy to see why he should have been omitted from the category of limited pluralists. On the omission of Plato in Lucretius’ and Diogenes of Oenoanda’s lists, above pages 78-79.
3.7 Was Lucretius' source a later Epicurean text?

We have seen above (pages 27-30) how the evidence for Lucretius having used philosophical sources later than Epicurus is not conclusive: if he did so he certainly did so very sparingly. But this does not exclude the possibility that he could have made use of a later Epicurean source in the critique, since it probably does not derive from the same source as the rest of book I.

Both the καθηγεμόνες (especially Hermarchus judging from the list of titles in Diogenes Laertius X. 25) and later Epicureans certainly wrote works which were polemical in nature. Colotes, Zeno, and Phaedrus are all possible candidates (although polemical texts on the elements are not known to have been part of their repertoire). Rösler (1973: 63-64) tentatively suggests a 'middle' Epicurean source, putting forward the name of Phaedrus. Given that a critical doxography of earlier views on the gods is found in his Περὶ ἑσθειας, it is not inconceivable that Philodemus had a systematic criticism of δόξα in matter in one of his works. Dorandi (1982: 350-352) suggests that the source of Lucretius' critique was Philodemus' Συντάξεις τῶν φιλοσοφῶν. He thinks (1982: 351) that parts of that work were doxographical, rather than biographical. Sedley (2003: 31-33) similarly argues, inconclusively in my view, that sections of

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455 Dorandi's suggestion seems to convince Vidale (2000: 55, note 95). Longo Auriochio (1990: 115) similarly considers the possibility that Philodemus was Lucretius' source.
Philodemus Συντάξεις τῶν φιλοσοφῶν were doxographic. I am not convinced by the suggestion that the Συντάξεις τῶν φιλοσοφῶν was the source of the critique because it presumably would have treated the Presocratics separately, and it would have not included other forms of quadruple pluralism in its discussion of Empedocles. It therefore encounters the same objections (and perhaps more) as postulating that Lucretius used a comprehensive doxographical list as source: it would require Lucretius to have done a lot of work and research, and work out the division into categories himself. Another text by Philodemus however may have been Lucretius' source for the critique.

The presence of DRN in the library at Herculaneum leads Kleve, followed by Flores (2002: 19), to suppose personal contact between Philodemus and Lucretius, and that Philodemus read Lucretius’ poem. Capasso (2003: 85-90) has demolished Kleve’s claim that lines of DRN V are found in PHerc. 1829, and that lines of DRN III are found in PHerc. 1830. Capasso also makes the important discovery that these two papyri, along with PHerc. 1831 and the three other frustoli in cassetto CXIV, are the scorze to PHerc. 395.456 But by a remarkable coincidence Capasso’s findings corroborate the point he was arguing against, namely that the roll of which PHerc. 395 is the midollo was in fact a copy of Lucretius, assuming the results of Kleve’s latest work can be trusted.457


457 Delattre warrants the ending of the lines 1081-1083 and the letters CE. M in preceding line, but not the further letters Kleve reads. I am not sure where this leaves Kleve’s claim that PHerc. 1831 fragment H preserves DRN I 874, 873 and a lost line, the most important contribution of Kleve’s findings to the textual tradition of Lucretius. Capasso (2003: 90-91) does not, in this specific case, object to Kleve’s readings nor to
Kleve has found, in the parts of PHerc. 395 which come from near the end of the roll, remains of DRN II 1078-1089 (Delattre 2003: 112-113 and 116). Lucretius’ poem, it seems, was in the Herculaneum library.

Kleve suggests (1997: 50-51) that the copy of DRN from Herculaneum was acquired before Philodemus’ death, because the writing is of the very oldest Latin type. But this does not show personal contact, since we do not know when the roll became part of the library (Wigodsky 1995: 58) and paleography allows for a date as late as the end of the first century B.C. (Sider 1997: 24). Contact between Lucretius and Philodemus can only be proved by internal evidence from their writings.

Kleve (1997: 56) connects Philodemus’ and Lucretius’ atomistic view of poetry. Philodemus thought the order of elements cannot be changed without consequences to understanding, a theory referred to as the ‘impossibility of metathesis’. Given Philodemus’ remarks about word arrangement, it seems reasonable to assume that he

his telling apart of sottoposti and sovrapposti. This suggests to me that unless a fitting sequence of letters can be found for DRN II, it is problematic to conclude that the roll contained only DRN II. Delattre (2003: 114-115) takes it that the roll had 59 columns with an average of 20 lines each and was 8.85 meters long (excluding front and end titles). Delattre (2003: 114) is very cautious about Kleve’s restoration of lines other than those of DRN II 1078-1089 (in cornice 4, for Kleve’s findings to be correct, we should have sottoposti and sovrapposti from columns which were 20 layers of the roll apart). Delattre (2003: 115) finds it “bien improbable” that the roll was an anthology of Lucretius. But would supposing that we have DRN I and II in the same roll not solve some problems? And would thinking in terms of an anthology of books I and II not solve most problems?

458 Even if Kleve is right in suggesting that the large size of the writing indicates that the roll was used for reading aloud in the Epicurean contubernium, one cannot be sure that it was used before Philodemus’ death (presumably an Epicurean ‘community’ continued at the villa after Philodemus’ death).
also thought letter arrangement should be judged by reason, and that it too had an impact on the thought, although in what survives Philodemus never explicitly states — as Democritus did — that the transposition of letters affects the meaning and the whole (Armstrong 1995: 221). Perhaps Philodemus gave the latter contention as granted.

Comparing letters to atoms has a long pedigree in Greek philosophical writings. Since Aristotle in *Metaphysics* A. 4. 985b12-19 uses the letters of the alphabet as examples to illustrate Leucippus’ and Democritus’ differences in shape (τροπὴ = θέσις), arrangement (σχῆμα = ρυθμός) and position (διαθηγὴ = τάξις), it seems reasonable to assume that the early atomists used such an illustration themselves. And in *De generatione et corruptione* A. 2. 315b6-15, Aristotle reports that Leucippus and Democritus said that just as the same atoms differently arranged can produce different compounds so the letters of the alphabet can make up genres as diverse as comedy and tragedy: ἐκ τῶν αὐτῶν γὰρ τραγωδία καὶ κομωδία γίνεται γραμμάτων.

Armstrong (1995: 224) suggests that it was Zeno of Sidon who picked up Democritus’ hints about poetry459 — hints which Epicurus had overlooked because of his reservations regarding poetry — and introduced the atomist poetics in outline. It may well be that the connection between Lucretius and atomistic poetics should be pushed further back; comparison between Philodemus and Lucretius is still valid, but now in

459 Armstrong (1995: 213-214) must be right in finding an analogy between construction of a poem and construction of the κόσμος in Democritus DK B21: Ὅμηρος φύσεως λαχών θεαζόμενης ἔπεων κόσμον ἐτεκτήνατο παντοῦ. In this passage Democritus seems to imply that the words, rather than the letters, corresponded to his ἰδέαι.
terms of a common source. Whether Epicurus himself could have used the analogy in a context where poetry was not involved (and that Lucretius took it over from there) is unclear. We shall come back, in pages 355-357 and 366-367, to Lucretius’ use of the analogy and whether it derives from his source. Philodemus however is certainly not the only candidate.

Lucretius’ extensive use of metaphor and imagery is compatible with Philodemus’ views. Wigodsky (1995: 62-63) argues convincingly that Philodemus approved of metaphor. He refers to Περὶ ῥητορικῆς IV column XV, and column XXI, where Philodemus’ statements show endorsement of the use of metaphor.

Wigodsky also suggests that there is no indication that Epicurus condemned metaphor in ΠΦ XXVIII. But Ad Herodotum 38 certainly shows that Epicurus had reservation about it: ἀνάγκη γὰρ τὸ πρῶτον ἔννοημα καθ’ ἐκαστὸν φθόγγον βλέπεσθαι καὶ μηθὲν ἀποδείξεως προσδείσθαι, εἰπερ ἔξομεν τὸ ζητούμενον ἢ

460 Kleve (1997: 54) himself, when connecting Philodemus’ views on rhetoric with Lucretius’ use of rhetoric, points out that in this respect Philodemus was following Zeno. On the use of rhetoric linking Lucretius with Philodemus see also Gigante (2003: 20), where he points out, however, that σαφῆνεια is not one of the things Philodemus required in poetry. The fact that rhetoric certainly figures prominently in Lucretius’ poem hardly seems a trait specific enough to show contact between two authors. The rhetoric may well derive from Lucretius’ education.

461 Lines 15-18 (Sudhaus 1892: 175) καὶ πᾶσα τέχνη φωνῆς οὐ δύναται προ[ς]θαί στερηθείσα τῆς ἐκ τῶν μεταφορῶν εὐχρηστίας.

It is not clear how far Philodemus, himself a poet, was innovating by his approval of metaphor, but it is possible that he was, once again, following the example of his teacher Zeno. There is affinity between Philodemus' views on metaphor and Lucretius' use of metaphors, but this does not seem enough to prove contact between the two.

Schroeder (2004: 140) argues that Lucretius drew from Philodemus his use of Epicurean therapy, which involves envisioning an image, and then dismissing it, because of its foreseen consequences. Philodemus sets forward this principle, which Schroeder calls "avocatio and envisioning" in Περὶ θανάτου. Schroeder (2004: 142) has it that the technique of visualisation is not derived from Epicurus. It is not clear to me why the useful way of avoiding a dangerous πάθος cannot have been in Epicurus, or any other Epicurean earlier than Philodemus.

The best known parallels between Philodemus and Lucretius are between Περὶ θανάτου and DRN III, and Περὶ θανάτου and DRN III. Schroeder (2004: 142) has it that Philodemus' Περὶ θανάτου (PHerc. 1050) influenced Lucretius: "to the potential objection that Lucretius was not dependent upon Philodemus because they might have had the same source or sources, it can only be replied that the close parallels between Philodemus' De Morte and Lucretius argue strongly for a direct dependence". He

463 And Epicurus' emphasis on σαφήνεια (below page 284) is not easy to square with approval of metaphor.


465 Kleve (1997: 60), however, has it that Philodemus wrote Περὶ θανάτου after the lifetime of Lucretius, without supporting argument for such a dating.
suggests that *DRN III* 870-893 mirror XXX Fr. 18. O. Kuiper (where the person is worried about what will happen to the body if left unburied, forgetting that burial involves just as much corruption of our body), and that *DRN III* 894 ff. reflect XXII Fr. 12. O. Kuiper lines 30-33 (where children are mentioned).\textsuperscript{466} There is no reason why both of these themes should not have been treated by Epicurus in his discussion of death. Schroeder (2004: 143) considers it especially telling that Philodemus, like Lucretius, imagines a soliloquy by a man who fears death in column XXXVII, to the effect “I’d die happily had I seen this done” and “I die even though I could enjoy my comfortable situation, but he who has nothing lives on”. Lucretius similarly mentions the comfortable situation of the man about to die in line 899.\textsuperscript{467} The topic of the actual soliloquy is very different. It would not be surprising if Philodemus’ presentation reflected the way Epicurus (or some other Epicurean), had dealt with the fear of death. It looks as though there is a shared body of argument between Philodemus and Lucretius, but Philodemus was not Lucretius’ source.

Statements by Philodemus have been thought to limit the extent to which the two could have been in contact. Wigodsky (1995: 58) refers to column XIV (Jensen) of Περὶ ποιημάτων V lines 11-24, which I quote as edited by Mangoni: τ[...] δὲ τὸ λέγειν ἀστεία τὰ καὶ τὴν σῦν[θεσ]ιν ἀστείαν ἔχοντα [κ]αὶ τὴν διάνοιαν [σπουδαίαν, τί δὲ διὰ]άνοια[ν σπο]υδαίαν [τὸ πλεῖ]ον δτα[v ἀπο]φα[ί]νονται


\textsuperscript{467} Gigante (1983: 165 and 189) implies that there is a relationship between the two texts and quotes *III* 898-899, but never states that the influence was direct.
Philodemus attacks the view that identifies good poetry with that which is morally or didactically useful at many places in Περί ποιημάτων V. In column XXV lines 30-34 he states that a ποίημα φυσικόν does not provide ὑφέλημα οὔτε λέξεως οὔτε δ[ημο]ήματος. In column XXXVIII Mangoni, lines 22-26, Philodemus states that τὸ πρέπον κατὰ σοφίαν is an ἀρετὴ which is ἀγένητον καὶ ἀμήχανον to poetry. In columns IV and V Philodemus excludes that poetry can have a value similar to medicine or other sciences, and attacks the view that the virtue of poetry should be

468 Mangoni 1993: 145. Her text seems superior to Jensen's, since by reading [ἀπο]φα[i]νται in lines 16 and 17 (in place of Jensen's τὸν ἑμ[φα[i]ντων νῦν) it respects the reading of the apographs N and O.

469 Armstrong (1995: 218) points to the fact that Philodemus thought that "the poetic version of any subject" is not precise and accurate enough for "professional students of philosophy and other topics", but remarks that there is no reason to think Lucretius claimed technical perfection in his treatment of philosophy in DRN.


471 It may be relevant that Philodemus, in column II 25-26 of Περί ποιημάτων V (Mangoni 1993: 131), while arguing against the view that the value of poetry lies in παιδεία (educational value), names Empedocles. The text is extremely damaged, but seeing that Empedocles was a didactic poet it may well be that he came in for criticism. Lucretius, on the other hand, used Empedocles as his chief literary model.
identified in its usefulness. Further criticism of usefulness as a criterion for judgement is found in column XXXII, lines 19-22. Further criticism of usefulness as a criterion for judgement is found in column XXXII, lines 19-22.472 δι[τ]ι το μάλιστα ωφελούν ἀριστον ἐρωσίν, οὐκ ἐσόμενον ἄν ἰατρικῶς ἐκφέρηται.474

The remarks in book V come close to ruling out that Philodemus knew of Lucretius’ poem when he wrote Περὶ ποιημάτων (unless he profoundly disapproved of it).475 It is not known when Philodemus wrote this book (it may have been written before he moved to Italy). Even if Περὶ ποιημάτων V was written late in Philodemus’


473 It seems significant that Philodemus insists that usefulness is not the criterion, since as Asmis (1992b: 148) points out “following Plato, the Stoics identified “fine” poems with useful “poems””. This looks like further proof that Philodemus’ polemic was geared against Stoic ideas.

474 I do not see the point of the addition in square brackets in Armstrong’s translation (1995: 267) “... because they will say that the most useful is the best poem, though it will not be the best poem if it is [a medical poem] expressed [in the] medically [best way]”. I would translate: “they will say that the most useful is the best composition, but that it will not be ἀριστον if it is written in the style of a work of medicine”: i.e. they are inconsistent because why should one not include medical works, if utility is taken into account in judging a ποιημα? This is presumably what Mangoni (1993: 179) had in mind (“e perché si dirà che è ottimo quel componimento che è massimamente utile, mentre non lo sarà, nel caso sia espresso alla maniera dei medici”) although in her translation οὐκ ἐσόμενον ἄν ἰατρικῶς ἐκφέρηται could be taken to represent Philodemus’ view (rather then the one he attributes to others). It would be clearer to say “ma che non lo sarà, nel caso...”.

475 Kleve (1997: 65-66) deals with the difficulty by saying that Lucretius’ poem is an aid for memory (ἐπιτομή) and therefore Philodemus’ criticism would not apply (as it did not deter Vergil or Horace from composing didactic poems).
life, this does not rule out that Lucretius was Philodemus' pupil. And even if there was no personal contact between the two, Lucretius could have read Philodemus' works. It is not clear what kind of diffusion Philodemus' prose works had (above note 106). Assuming that they had little diffusion, it is still conceivable that Lucretius was in contact with some of Philodemus', or Siro's, pupils and learned of Philodemus' views through them. There is no reason however why Philodemus should be considered more likely than earlier Epicurean authors to have been the source of the critique, apart from the fact that he was living in Italy and he was contemporary with Lucretius.

3.7.1 The choice of Heraclitus

One argument in favour of thinking that Lucretius used a source later than Epicurus turns on what one makes of the choice of Heraclitus as the representative of monism. We have seen in chapter 1 that such a choice was probably not Lucretius' own decision, in

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476 Capasso (2003: 100) thinks Philodemus was in Italy from circa 80. Philodemus had already taken residence in Italy in 70 B.C., since he dedicated his Περὶ ηττορικῆς to C. Vibius Pansa Caetronianus (Sider 1997:7-9). Sider dates Philodemus' arrival in Italy to 74-73. If the date of Philodemus' move to Italy was 74-73, Lucretius, who was younger than Philodemus by about 16 years, was about 20 years old when Philodemus moved to Italy. If Philodemus moved to Italy as early as 80 B.C., Lucretius was only 15 at the time. It is perhaps unlikely that the idea of writing his physical poem was suggested to Lucretius by Philodemus, but there is no reason to exclude that contact with Philodemus inspired Lucretius to Epicureanism and consequently to write his poem. DRN, however, was not written under Philodemus' supervision (unless Philodemus drastically changed his views regarding didactic poetry). It even seems conceivable that DRN was a reaction to Philodemus' ideas.
view of the coincidence with Diogenes of Oenoanda. Diogenes and Lucretius probably derived this feature from an earlier text.

The Stoics’ admiration for Heraclitus sounds like the most satisfactory explanation of the choice of Heraclitus. Chronology suggests that a later Epicurean would be more likely to pick Heraclitus than Epicurus himself, since presumably the rivalry between the Stoics and the Epicureans grew more intense with time. Although there is evidence that the early Stoics Zeno and Cleanthes were influenced by Heraclitus, it is perhaps far-fetched to think that Epicurus singled out Heraclitus to react against early Stoic ideas circulating in Athens.

It is not altogether inconceivable, however, that Epicurus singled out Heraclitus, or fire-monism, independently of any connection between the Stoics and Heraclitus. We have seen above (note 130) according to Bailey the fact that Heraclitus was chronologically last of the Ionian monists may have encouraged the choice. And fire-monism was the form of monism which Aristotle considered most reasonable and

477 Indeed Bignone (1973: 182-183) thought that the early Stoics and Epicureans were allies against Aristotle and Theophrastus.

478 According to Long (1996: 35) the only piece of evidence that associates Zeno with Heraclitus is 

S.V.F. I. 11 where Numenius reports that Zeno μετέσχε τῶν λόγων τῶν Ἡρακλείτεων. Long is uncertain about the biographical accuracy of this information, but argues that Cleanthes “was well acquainted with Heraclitus”. Long (1996: 38-39) thinks that the early Stoics had access to Heraclitus’ ‘book’, and did not depend on Theophrastus for their information. See further below page 299-300.

479 Epicurus knew of Zeno, Diogenes Laertius VII. 5 and 9. That Epicurus was in touch with the views of contemporary schools and willing to engage in polemic with them is shown by his polemic against a contemporary school of mathematicians in Cyzicus (Sedley 1976a).
attacked in *De caelo*. Since there seems to be little doubt that Epicurus knew the *De caelo*, Aristotle’s focus on fire-monism might have led Epicurus to single out Heraclitus.

3.7.2: Lucretius’ use of *homoeomeria*

We have seen how Lucretius uses *homoeomeria* in line 830 and *rerum homoeomeria* line 834,⁴⁸⁰ in a distinctive abstract sense,⁴⁸¹ to refer to Anaxagoras’ theory. It seems unlikely that Lucretius forged his own meaning for a Greek word which he uncustomarily decides to transliterate into Latin,⁴⁸² and equally unlikely that he misunderstood the meaning the term had in his Greek source.

The word occurs in the singular in ΠΙΦ XIV and XV, but it is far from certain that Epicurus used it in connection with Anaxagoras, and certainly there is no indication that he used it to refer to Anaxagoras’ theory itself in a sense similar to Lucretius (above 2.1.4). This does not exclude altogether that Epicurus used ὀμοιομέρεια in a different sense elsewhere, but seems to make it less likely.

The parallels between Lucretius and Diogenes of Oenoanda strongly suggest that the two texts are connected; however one cannot be certain that they both depend on a text by Epicurus. According to Mansfeld (1990: 3154-3155) both depend on a Epicurean

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⁴⁸⁰ Above pages 55 and 60-62.

⁴⁸¹ Munro (1886b: 98): “Lucr. seems to denote by the term the relation which existed between the things in being and the particles like in kind, of which they were composed”.

⁴⁸² On the transliteration, below pages 343-344.
exegetic and scholastic tradition which is in turn dependent on the Placita.\textsuperscript{483} Lucretius’ omission of the Stoics’ theory of elements needs explaining if he was using a later Epicurean source. \textit{If} the text Mansfeld has in mind included the Stoics — that is if the Stoics were not added by a later intermediary,\textsuperscript{484} or by Diogenes himself — it remains unexplained why Lucretius opted to leave them out. It may be that Lucretius’ source considered the Stoics separately from criticism of the Presocratics (as Diogenes does, above note 127), and this encouraged Lucretius to leave out the Stoics. In that case Lucretius would have decided to omit criticism of the Stoics on elements, and to criticise them only on their affiliation to Heraclitus.\textsuperscript{485} This sounds unlikely.

To suppose that Lucretius’ source did not consider the Stoics looks like the more probable hypothesis, because it involves a less complicated approach on Lucretius’ part to the Stoics than alluding to the them and then leaving out their theory. This supposition however is less economical in that it implies the existence of more texts: one behind Lucretius, and a different one behind Diogenes (unless Diogenes added the Stoics himself). The absence of the Stoics from Lucretius’ \textit{arguments} seems easier to explain if he was following a text by Epicurus himself, in which case chronology would explain why the Stoics are not considered. The similarities between Lucretius and Diogenes

\textsuperscript{483} Above note 70.

\textsuperscript{484} That the Stoics were appended later may be shown by the fact that they are not placed in the list according to the number of their elements.

\textsuperscript{485} Possible reasons for this are: (a) that the Stoics would disrupt an account which focuses on the Presocratics or (b) the including the Stoics would involve taking account of the involvement of divinity in their theory, an aspect in which Lucretius was not interested, or both.

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should then be explained by saying that Diogenes too used Epicurus and introduced the Stoics himself (or used an intermediary source which reflected Epicurus and included the Stoics).

A complication is presented by the fact that, as Kleve (1978: 65) notes, it was usual in Epicurean polemics not to mention contemporary rivals by name.486 Obbink (1996: 285) comments on how most of the καθηγεμόνες declined to name the opponents in their polemic, to avoid putting them in the spotlight. Obbink also points out (2001: 206-207) that Philodemus in Περὶ ἐνοείης ζ Ἐκκλεσίας criticises the views of the poets because the Stoics adapted these to their theories through συνοικειωσις (accomodatio), and (2001: 210) that Philodemus presents the Presocratics in a way which recalls his polemic against the Stoics. It is very difficult to rule out that whoever elaborated the arguments reproduced by Lucretius in the critique had a similar intention, but we have seen in chapter 1 how the series of arguments in the critique as a whole is a comprehensive attack on rival theories rather than one concerned with the Stoics' antecedents in particular.

486 Kleve (1978: 49) thinks that Colotes did not mention by name the contemporary philosophers he attacks (Adversus Coloten 1120C), because "everybody must have known who his targets were, a feature already observed in Epicurus". Edwards (1989: 105) thinks that in the same passage Plutarch reports that Colotes criticised theories which his actual targets did not hold, and "can only explain the shadow fighting by proposing modern names as the hidden referents of the old (Adv. Coloten 1120 e)". But Plutarch is simply saying in the passage that after naming often the earlier thinkers, when Colotes turned to contemporary theories (the Cyrenaics and the Academy of Arcesilaus), he avoided naming them.
3.8 Conclusion

Epicurus is *a priori* the likeliest candidate for being the source of the *critique*, because of Lucretius' veneration for Epicurus, because of his attested use of Epicurus elsewhere, and because he rarely used later Epicurean, or un-Epicurean, texts as his philosophical source (above page 30). There are however two difficulties with supposing that Lucretius drew the *critique* from a text by Epicurus, who in turn drew from Theophrastus. First, Lucretius' use of *homoeomeria*. There is no evidence that Epicurus used the word in the singular to describe Anaxagoras' *theory*, even though he might have distinguished the way in which ὀμοιομέρεια was present in Anaxagoras' *theory* from the way in which it was present in his own, in ΠΙΦ XV fragment 25. In view of Diogenes of Oenoanda's use of the term (above page 61) it is conceivable that the meaning *homoeomeria* has in Lucretius was a development later than Epicurus himself, a development influenced perhaps by the doxographical tradition. Second, the emphasis on Heraclitus is easier to explain if one thinks that Lucretius' source was getting at the Stoics by picking Heraclitus as the representative of monism. Appealing to the possibility that Epicurus was responding to early Stoic ideas circulating in Athens at the time seems far-fetched.

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Chapter 4: Lucretius in the critique

It seems clear that Lucretius departed from the content of his Greek source in some sections of the critique. He often considerably elaborated the material he found in his source by using poetical and rhetorical devices. He may have introduced some of the arguments himself. The emphasis of this chapter will be on how and to what extent Lucretius himself contributed, on the passages he added ex novo, and on his use of literary tools to embellish the philosophical material he drew from his Epicurean source.

4.1 Heraclitus as a general

Lucretius opens the critique by pointing out, in lines 635-638, that those who hold that fire is the materies rerum badly lose their way. He then proceeds to introduce their leader, Heraclitus, by using a metaphor from the battlefield: Heraclitus init quorum dux proelia primus / clarus . . .

It seems probable that Lucretius himself introduced the metaphor. Imagery from the battlefield which recalls epic will appear again, at the start of the confutation of Empedocles and the quadruple pluralists: . . . facere ruinas / et graviter magni magno
The expression is an example of 'theme and variation' with the second element adding an aspect (the greatness of the fall). Such a use of theme and variation seems customary in Lucretius. It appears again in lines 635-636 (with second formulation stressing the aspect that fire alone is the element), and in lines 643-644 (below note 527). Bailey (1947: 145-146) discusses Lucretius’ use of synonyms and his tendency to add a fuller explanation of the original concept.

And it is perhaps not too far fetched to think that the image from the battlefield continues throughout the critique. Anaxagoras represents the enemy defeated and routed trying, unsuccessfully, to escape or hide. The use of *latet* in reference to Anaxagoras in line 875 (below pages 341-342) might suggest this. In the confutation of Anaxagoras the *primordia*, rather than Anaxagoras himself, end up dying (below pages 347-349).


Line 636: ... *lapsi a vera ratione vagantur*. On the theme of the path, below pages 309-311.
950, the passage which immediately follows the critique.491

There is pointed irony in Lucretius' use of primus.492 The word recalls, and is supposed to be contrasted with, the primacy of Epicurus' generalship in ridding earth of religio. Epicurus is primus493 in DRN I 66 and 71. I would add that there is further sharp irony in the portrayal of Heraclitus as dux of those who lose their way.494 The role of Heraclitus as dux is meant to be set against the presentation of Epicurus as a general in the prologue. The imagery in DRN I 62-79 is a report of a triumphant military campaign.495 Lucretius presents, right at the start of his poem, Epicurus as the military leader. Lucretius' language in his introduction of Heraclitus is derisory. His use of elevated epic style should be read as an example of mock-epic.496

Irony is accompanied by parody of Heraclitus' own words.497 Heraclitus is reported as stating that (DK B80) εἰδέναι δὲ χρῆ τὸν πόλεμον ἔοντα ζυνόν, καὶ

491 Note that the quod superest in 921 may have implications of “what is left” once the other philosophers’ primordia have died.


493 Brown notes how the primus motif is used for Ennius in DRN I 117 and for Lucretius himself in DRN I 926-927 and in DRN V 336-337.

494 On the identification of Heraclitus’ followers, above page 70.

495 West 1969: 57-60.

496 See West (1969: 53) on how Lucretius can parody the style of epic.

497 West (1969: 26-27) points out that Lucretius regularly mimics the style of the speech of his targets. I would add that the mockery of Heraclitus and conventional oracles come to be one and the same thing, once Heraclitus is identified with the Pythia (below note 505).
δίκην ἑριν, καὶ γινόμενα πάντα κατ᾽ ἑριν, καὶ χρεών, and that πόλεμος πάντων μὲν πατήρ ἑστι, πάντων δὲ βασιλεὺς, καὶ τούς μὲν θεοὺς ἐδείξε τούς δὲ ἀνθρώπους, τούς μὲν δοῦλους ἐποίησε τούς δὲ ἐλευθέρους. It looks as though Lucretius is parodying Heraclitus’ use of military language.

The mimicking of Heraclitus’ style continues in lines 636-644. In these lines, which introduce Heraclitus and his admirers, Lucretius is certainly playing with words more than he usually does. Lucretius emphasises particularly with the idea of opposites: clarus ob obscūram linguam in 639 (oxymoron), inanes Graios . . . graves Graios in 639-640, vera constituunt quae latitantia cermunt in 642-643. Insistence on opposites, and the use of oxymoron, were prominent features of Heraclitus’ style. The expressions tangere auris in 644-645 and fucata sonore in 645 also seem relevant, although the former is no doubt also meant to foreshadow the Epicurean theory of hearing, and sensation generally. It may also be that Lucretius’ use of obscūra lingua in line 639 and of latitantia in line 641 parodies Heraclitus DK B123: φὕςις κρύπτεσθαι φιλεῖ.

Lucretius uses alliteration in the introduction to the confutation of Heraclitus

498 Kollmann 1971: 82.

499 Brown 1983: 146. For the importance of war in Heraclitus’ thought see also note 582 below.

500 Below note 570.

501 West (1969: 26) suggests that the tactile visual and aural synaesthesia recall the tortuosity of Heraclitus’ style.

502 Lucretius uses alliteration, assonance and onomatopoeia extensively (Bailey 1947: 119-120 and 146-152). Lucretius would have considered sound-effects part of the charm of his poem, although, as we shall
(lines 635-644): *proelia primus* (where it may have an onomatopoeic aspect, representing the clashing of arms at the start battle), *gravis Graios*, and in *magis admirantur amantque*. The overall effect of this alliteration is to produce an (unjustified) impression of grandeur, as to emphasise the sharp irony and the parody of Heraclitus in the passage.

Kollmann (1971: 85) suggests that Lucretius’ parody extends to reproducing Heraclitus’ “aggressiveness” and “sharp criticism”: the aggressive tone of the passage (and of the refutation of Heraclitus in general) should be explained in part as imitation of Heraclitus’ own style. There is no evidence that such a tone towards Heraclitus was customary in the Epicurean school.503 It may be that Lucretius’ aggressiveness is partly imitation of Heraclitus, but it looks as though the harsh tone of the polemic, harsher than anything against Empedocles and Anaxagoras, is actually aimed at Heraclitus’ admirers, whom Lucretius presents as *stolidi* and *inanes*.

4.2 Heraclitus’ army

We have seen in chapter 1 (pages 65-70) that whoever formulated the arguments against see, he condemns *εὐφωνία per se*. Lucretius’ uses of sound-effects are classified by West (1969: 115).

503 Capasso (1987: 101) finds no evidence of aprioristic polemic or sarcasm by Epicurus and his followers, pointing out that (a) there is no mention of Heraclitus in Metrodorus, Hermarchus, and especially Colotes, and (b) that even Philodemus, in spite of his polemical vein, hardly seems harsh towards Heraclitus (Philodemus refers to Heraclitus being either in doxographical contexts or as part of his discussion of Stoic theories).
Heraclitus did not single him out as the exemplary monist so that the Stoic theories could be refuted. None of the arguments in the confutation of Heraclitus can be shown to be aimed at Stoic doctrines. However it cannot be excluded that Lucretius' source singled out Heraclitus as the exemplary monist because the Stoics considered Heraclitus an eminent authority. I shall argue that, whether or not Lucretius' source explicitly mentioned the Heraclitus-Stoics connection, Lucretius had the Stoics' veneration of Heraclitus in mind when composing line 635-644. Lucretius referred to the Stoics, implicitly, but recognisably, through his expressions *inanis Graii* and *stolidi*, and through his description of the admirers of Heraclitus' style.

4.2.1 *Stolidi* and *inanis Graii*

I think that the pun which Snyder (1980: 118), following earlier commentators, sees on *stolidi - Stoici* is a further example of Lucretius' pointed use of *paronomasia*, for which

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504 The fact that Lucretius avoids naming the Stoics may well carry an implication that they are not even worth being mentioned by name.

505 It seems beyond doubt that *stolidi* in line 641 are the same people as the *inanis Graios* in 639, since the *enim . . . explains the clarus inter inanis*. The fact that, as Sedley (1998: 13-14) suggests, Heraclitus is probably to be identified with the Pythia in line 739, where the Pythia's way of speaking (*profatur*) is unfavourably compared to Empedocles' clarity, suggests that Lucretius is thinking in terms of two factions. On the one side oracles, and their admirers such as Heraclitus, and on the other Empedocles who refused conventional prophecy.

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Friedländer aptly coined the term ‘atomology’. The fact that two words expressing concepts connected with one another may share the same letters has important implications for Lucretius. It shows that (1) there are many *elementa* common to many things, as there are many *elementa* common to many words. This is how Lucretius first introduces the analogy from letters of the alphabet, in *DRN* I 196-198. It also illustrates that (2) the same or similar atoms could make up different things through rearrangement. This is expressed in lines 823-826. When two words expressing concepts connected with one another shared many of their *elementa*, the analogy very aptly illustrated that (3) the two things shared the same atoms (*elementa*), just as the words shared the same letters (*elementa*). Lucretius makes this point in lines 911-914: *ignis* and *lignum* share the same letters (atoms), therefore the atoms (letters) needed to make up fire are included in wood. The analogy from the letters of the alphabet appears five times in his poem.

Given this background it seems not unreasonable to hold that Lucretius expected his reader to pay attention to words made up by similar letters. Lucretius associates,

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507 The illustration is repeated again in *DRN* II 688-699 and 1013-1022. And West (1969: 97) must be right that *ex alienigenis quae lignis exoriuntur* in *DRN* I 874 is playing with the same idea as *ignes* and *lignum* ("from dissimilars which arise out of timbers"). All the *elementa* of *lignis* are included in *alienigenis*.

508 The fact that Lucretius has not yet exemplified ‘atomologising’ at this point is not necessarily an argument against the supposition of ‘atomology’ here. It seems reasonable to assume that *DRN* was meant to be read more than once, as a compendium of Epicureanism. There are examples of wordplay earlier in book I (e.g. 117-118).
or even identifies, umor with amor (Friedländer 1941: 18). This etymological play on words is hinted at throughout DRN IV 1045-1057. Lucretius spells out the connection in 1058, but intentionally avoids using the word umor in that sentence, going instead for gutta in 1060. The word play is emphatically taken up once again in lines 1065-1066. Water images appear sporadically in the final section of book IV, but water is greatly emphasised, in an apparently unrelated context, in the last two lines of the book 1287-1288 . . . guttas cadentis umoris . . . (note the ring-composition on gutta from

509 Brown (1987: 202) endorses Friedländer’s explanation but with caution, and thinks that irony might be involved (rather than serious etymology). I doubt irony comes into play here.

510 Haec (i.e. umor) Venus (i.e. amor) est nobis; hinc autem nomen amoris. For the Venus-Amor-Cupid association see DRN V 737-738 it Ver et Venus et Veneris prarmuntius / pennatus graditur, . . . (where incidentally atomology seems to be at play). It is conceivable that Lucretius is here engaging in polemic with love-poetry, by stressing that umor, the opposite of ignis, ardor and flamma as known from love poetry, is the essence of Amor (Venus). This would be consistent with his criticism of romantic love at the end of DRN IV.

511 West (1969: 94) has endorsed the point. I think there may be further ‘atomologising’ on umor in . . . Veneris sudorem exercita potat. It might be worth thinking whether there could be precedents in Greek for such etymologising word-play, as Professor Sharples points out to me, a possibility is paronomasia on ἀφρος and Ἀφροδίτη (see Plato Cratylus 406D). Aphrodite is associated with water in Euripides fragment 898 Nauck (Pascal 1904: 34-35). This may have encouraged Lucretius’ play on umor and amor. Snyder (1980: 114) on the other hand points out that in Euripides Trojan Women 990 Aphrodite causes ἀφροσύνη. Snyder interestingly points to the word-play on venus venenum and amare amarum: DRN IV 634 amarumst, 637 venenum, 640 venenum, 658 amarum . For the possibility that Lucretius is playing on Empedocles’ Φαιλξα below, page 323-324.

512 Line 1194: . . . umectans oscula . . .; line 1271 atque exossato ciet omni pectore fluctus.
This reminds the reader of the significant etymology. Brown (1987: 379) fails to mention the ring composition on *gutta* and is undecided on whether to see an echo of the etymology. I think there can be no doubt that Lucretius associated *umor* with *amor* because the words shared three out of four *elementa*.

Friedländer (1941: 20) points to *Ennius . . . perenni* in *DRN* I 117-118 (Ennius is made up of atoms/letters which make up an eternal poet), and *DRN* VI 93-94 *callida Calliope* (the atoms which make up skill through experience).\(^{514}\) *Mater . . . terra* share a similar nature and similar letters (*DRN* II 993).\(^{515}\) A further interesting example is *DRN* II 643 . . . *praesidioque parent decorique parentibus esse*. Lucretius had the etymology Κούρητες from κούροι in mind, with the implication that “preparedness for their parents is the essence of the Curetes” (Friedländer 1941: 21).\(^{516}\) He (1941: 18-19) also draws attention to *flamen flumen* in *DRN* I 291-292, *culmine fulmen* in *DRN* VI 295 ff. and the hint at *superstitio* in *DRN* I 65 *horribili super aspectu mortalibus instans*. Further examples are *canis Hyrcano de semine* in *DRN* III 750, and to paronomasia in *Epicurus . . . decurso* in *DRN* III 1042-1044 (Snyder 1980: 180).

There seems to be similar word-play in connection with the Greek names of Heraclitus and Empedocles, as Snyder (1978: 228-229) notes. Lucretius is scornful in

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\(^{513}\) Note also *amoris* in 1283 (Brown 1987: 379).

\(^{514}\) And note, in this context, Lucretius’ use of 5 words starting with the letters ca- in lines 92-95.

\(^{515}\) Snyder (1980: 135-136) also draws attention to *terra-materies-mater* in *DRN* II 248-251 and II 991-1003. See further below note 594.

\(^{516}\) West (1969: 96) notes that etymologising word play is used with onomatopeic force in *DRN* II 257, IV 504, IV 431, II 310, III 387. West also (1969: 97-99) points to etymological play in *DRN* III 978-1023.
calling Heraclitus *clarus*, the Latin equivalent of the last half of Heraclitus' name κλειτός: Heraclitus, as the reader is to find out unexpectedly, is only *clarus* (κλειτός) through his obscurity. As for Empedocles, Lucretius portrays him as truly ἔμπεδος, as far as his standing as a poet is concerned, but he is one of those thinkers who . . . *fecere ruinas* / *et graviter magnum* magno cecidere ibi casu. Apart from the irony, the principle that letters are analogous to atoms appears to hold true: Heraclitus was indeed famous, and Empedocles could be said to stand fast in his rank as a didactic poet. The term ἔμπεδος can mean “lasting, continual”, with which one can compare Lucretius’ *carmina vociferantur* (see further below note 668). It seems at least possible that Lucretius was etymologising in Greek as well as Latin.\(^\text{517}\) It is hard to rule out, however, that Lucretius was reworking puns already used by the Greeks before him.

Scholars have challenged ‘atomology’. West (1981: 26) criticises Snyder for thinking of natural relationships between names and their referents.\(^\text{518}\) West (1981: 27) grants that Lucretius was partial to etymology (the relationship between word and word), but is “not convinced that his Epicureanism embraces an onomatopoeic theory of the origins of language (a relationship between thing and word). The best evidence would be 2. 398-407 but it is not enough”.\(^\text{519}\) Dalzell (1987: 19-20) similarly grants that

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\(^{517}\) Ferguson (1987: 104) suggests that in *DRN* V 740-741 Lucretius seems to be alluding to the derivation of Avernus from the Greek ἄ-όψος.

\(^{518}\) Ferguson (1987: 105), as Snyder, endorses the idea that this reflects the natural relationship between language and its referents, first hinted at by Friedländer (1947: 21).

\(^{519}\) The expression *mellis lactisque liquores* presumably represents the round atoms (*iucunde tangere*), and *contra taeta absinti natura / ferique centauri* the angular atoms (*introituque suo perrumpere*)
word-play is widespread in Lucretius' poem, but argues that Friedländer's approach is improbable because (a) it attributes to the Epicureans what was a Stoic practice, and (b) the point which Lucretius stresses more often "is that a rearrangement of the same or similar elements produces something qualitatively different".

As for (a) it looks as though Epicurus thought that φύσις played a part in the development of language. It seems clear from Ad Herodotum 75(b) that names came about not by θέσις but by φύσις, as a response to πάθη and φαντάσματα humans are faced with; it is only in stage two that λογισμός appears: people established (τεθηναί) their own names (Snyder 1980: 13). DRN 1028-1029 confirms this: at varios linguae sonitus natura subegit / mittere et utilitas expressit nomina rerum... Both West and Dalzell seem to equate a natural relationship between language and referents with onomatopoeia, but this is not necessarily the case. Both West and Dalzell also seem to understate the importance of Lucretius' example ignis-lignum, and not to take sufficient account of the implication of umor = amor. In both these cases the concepts are connected.

In answer to Dalzell's objection (b), that Lucretius stresses the difference rather than the similarity of the components when using the analogy from letters of the alphabet is due to the fact that it is self-evident from the examples, e.g. ignis-lignum, that the words share many primordia and are therefore connected (as is shown by the fact that

520 As Campbell (2003: 17) puts it "...things themselves, by their physical interaction with the sense organs of the mind, provide a word, which gives a true notion of the nature of the thing".

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ignis comes from lignum). This obvious point does not need stressing: it is the difference which just small changes in composition, and in order, can make which Lucretius wants to demonstrate. The two compounds have similar names because they are connected on the atomic level. Etymology reflects the natural relationship between compounds and their names.

Let us now come back to Lucretius' stolidi. I think that there is atomology on the Stoics' name. The Stoics are in fact stolidi, since they are made up of letters/elements which go to make up foolish people, atoms which are represented by the letters sto-i-i. Ferguson (1987: 102) implies this by commenting “the Stoici are

521 These lines, where word-play is widespread (above page 273), seem an appropriate place for ‘atomology’. Even the repetition in ob obscurat might be intended. And perhaps Gravis Graios (where Lucretius may have had in mind his use of Graius (homo) for Epicurus in DRN I 66) would make the paronomasia in stolidi-Stoici easier to spot.

522 Holtsmark (1968: 260-261) finds a metrical echo of inane in inanes and similarly a punning echo of solidum in stolidi. Snyder (1980: 119) seems to think Holtsmark' view is at odds with her interpretation, but the two suggestions do not seem mutually exclusive.

523 Snyder (1980: 119) refers to the fact that the only other occurrence of stolidus in DRN is in line 1068 of book I, in reference to those who endorse the geocentric theory. It may be that Lucretius had the Stoics in mind in the later passage too, although it seems unlikely that the argument was originally aimed at the Stoics in his source (above pages 27-30).

524 It may be objected that this would imply, oddly, that foolish people are made up of (some) different sorts of atoms to wise ones. DRN III 302-306 shows that placid creatures have more air in their souls. The same objection could apply to every example of paronomasia on proper names of people, such as Ennus, Heraclitus and Empedocles.
naturally *stolidi* (as most editors have seen)*). The *paronomasia* on the Stoics' name might have been encouraged by the Stoics' own emphasis on etymology. And Lucretius may be exploiting a further point in referring implicitly to the Stoics as 'foolish people', considering how the Stoics insisted on the 'Stoic wise man'.

As for the expression *inanes Graii*, that these should be identified with the Stoics is suggested by Lucretius' *gravis Graios qui . . . requirunt*. I take it that the *gravis Graios* are the Epicureans, who are at present seeking the truth by investigating Epicurus' own writing. A more general reference to all the earlier Greeks who sought the truth would require a past tense. And if the identification of the *gravis Graios* with the Epicureans is accepted, the polar opposite would almost certainly have to be their contemporary arch-rivals, the Stoics.

### 4.2.2 Sound and truth

A second argument for thinking the admirers of Heraclitus are the Stoics emerges from lines 639-644. The *inanes Graii* appreciate the use of *obscura lingua*. For, being foolish, they (a) "admire and love especially all those concepts which they see hidden underneath *inversa verba*" and (b) "make out to be true those words which can touch the ears

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525 Schenkeveld and Barnes (1999: 182) point out that the term *ἐτυμολογικά* is not found before Chrysippus, and that the Stoics probably coined the term *ἐτυμολογία*. The interest in etymology is especially apparent in the later Stoic Cornutus (first century A.D.).
belle²²⁶ and which are dyed²²⁷ with sounds that charm". The antithesis of 639 is analogous to that of 933-934:²²⁸ *quod obscura de re tam lucida pango / carmina musaeo contingens omnia lepore.*²²⁹ The intention, however, is opposite.²³⁰ The similarity in phrasing is intended to show the reader that he should connect the two passages, and draw the necessary inferences.²³¹ Obscurity was the opposite of what

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²²⁶ The un-poetic adverb *belle* is an *hapax* in Lucretius. The adjective from the same root occurs only once: *et, si bello animo est et non odiosa* . . . *DRN IV* 1190. Milanese (1989: 134) observes that the unusual *belle* evokes “una ‘grazia’ urbana e lontanissima dall’impegno filosofico”. There seems to be implicit condemnation here. And the adjective *lepidus* is also an *hapax* (although the noun *lepos* plays an important role in the poem, below note 538). West (1969: 26) points to Catullus 78 for “the potential malice” of the two terms.

²²⁷ Lewis and Short note that Cicero frequently uses *fucata* in the sense of “counterfeit, fake”, and make a connection with cosmetics, which is one of counterfeit arts, like rhetoric, in Plato *Gorgias* 465. Lucretius’ addition *et lepido quae sunt fucata sonore* is a further (above note 487) example of theme and variation, where the second formulation has the added motif of trying to make things appear to be different from what they actually are. It seems worth referring to Philodemus *Περὶ ποιημάτων* I 175: “But as for his [Andromenides’] saying ”τὰ κοσμού[ν]τα καὶ παρακ[όπτωντα τὰ[ς ἀ]κοα[ς]” it is obvious even to the average person that it means nothing to the ear, and does not move the soul irrationally but rationally by artistic means” (Janko 2000: 394-395).

²²⁸ Ernout also refers to *DRN III* 1 for the antithesis.


²³⁰ Lenaghan (1967: 229), who independently connects 639-642 with 933-934.

²³¹ Milanese (1989: 133) seems right in suggesting that the remark applies to literary texts generally, not only poetry. I doubt there is a problem with Lucretius comparing his poetry to Heraclitus’ prose. Heraclitus wrote prose of a poetic sort. And the remarks about *σταφύλεια* regarded language generally. I have endorsed
Lucretius and all Epicureans strived to achieve with language.\textsuperscript{532} Epicurus considered clarity, σαφήνεια,\textsuperscript{533} the only virtus in language.\textsuperscript{534} Lucretius takes pride in the fact that his carmina are lucida, i.e. the opposite of Heraclitus’ obscura lingua. By emphasising the polarity between clarus and obscurus, Lucretius is making a philosophical point, as well as a poetical one. He uses Heraclitus’ style as a polar opposite against which to set his own Epicurean practice of using clear language.

But Lucretius did not introduce lines 639-644 just to set up, and demolish, a view of language opposite to Epicurean σαφήνεια; a simple reference to Heraclitus’ obscurity would have sufficed for that purpose. Lucretius goes out of his way to give details of what the admirers of Heraclitus appreciate and what they fabricate to be true (\textit{vera constituent}).

\textsuperscript{532} Tatum (1984: 188); Milanese (1989: 125). The treatment of philosophy in DRN I opens (lines 143-145) and closes (lines 1114-1117) on images of light out of darkness; this should be connected with the idea of σαφήνεια. Lenaghan (1967: 223) draws attention to the stress Lucretius lays on the clarity of his own poem with clarius audi in DRN I 921 (taken up by perspicis in 949), quae . . . faciemus aperta in DRN II 182, claranda in DRN III 36; clarandum and plane in DRN IV 778; . . . in primo quoque carmine claret in DRN VI 937. Images from light in Lucretius are analyzed in West 1969: 79-93.

\textsuperscript{533} For σαφήνεια see Περί ποιημάτων V column XXXI Mangoni (1993: 158), line 27-32, where Philodemus says it cannot always be achieved by poets.

\textsuperscript{534} Milanese (1989: 108) points out that lucidus, or rather dilucidus is a rhetorical term. Milanese (1989: 85) argues that Philodemus accepts ἐλληνομός along with σαφήνεια (an unusual divergence from Epicurus).
Lucretius felt the need to elucidate what the admirers appreciated in Heraclitus' language and style, and in language and style more generally. Lines 639-644 are a description of a critical method (Milanese 1989: 144), not simply of Heraclitus' style. The admirers are expressly said to appreciate all texts (omnia) written in such a style, and not just Heraclitus' text. Milanese (1989: 125) thinks that lines 639-644 are a criticism of Stoic views on language and epistemology, and specifically of the Stoics' approval of εὐφωνία and ἀλληγορία.

There can be no doubt that Lucretius is criticising those who emphasised hearing and sound in language with belle tangere aures and lepido fucata sonore. An objection appears to arise in relation to Lucretius' sound-vilifying statement. It may look as though the condemnation of the foolish people tricked by the dye of sounds is at odds with the emphasis which Lucretius' programmatic statements place on

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535 Lenaghan (1967: 229) had already connected the passage with the Stoics' love of obscurity.
536 According to Janko (2000: 173) the ultimate origin of the euphonic theory is to be found in musicology and atomism (Pythagoras and Democritus), such views were transmitted to the Stoics by Xenocrates and Heraclides of Pontus. See Gentinetta (1961: 27-35) on Democritus, who refers (1961: 31) to Leucippus DK A6, and (1961: 34) to the titles in DK B18 a (Περὶ καλλούνης ἐπιθόν) and B18b Περὶ εὐφώνων καὶ δυοφώνων γραμμάτων. If this is right the Epicureans were criticising a theory which has its ultimate origin in atomism. Gentinetta (1961: 193-218) discusses the Stoics' theory of φωνή.
537 Schrijvers 1970: 46.
538 Lucretius' request to Venus in the proem (DRN I 28) is for aeternus lepos; and Venus appeared as provider of lepos already in line 14. The pleasure induced by sound is certainly part of the idea. Lines 921-950 suggest that introducing musaeus lepos is an important part of Lucretius' contribution, and that lepos has some importance in spreading the truth of the Epicurean message.
lepos,\textsuperscript{539} with his own poetical practice, his extensive use of alliteration, assonance and repeated sounds.\textsuperscript{540} But there is no inconsistency here. Lucretius is not condemning lepidus sonor overall in lines 639-644: he is protesting that pleasant sound is not to be equated with the truth of the message.\textsuperscript{541} Lucretius approved of using ear-pleasing sounds only in conjunction with truthfulness of content. The union of the two is what Lucretius signals as his own contribution in lines 921-950. The fact that Lucretius, as Lenaghan (1967: 229) notes, “... feels compelled to justify his application of lepos by the medical simile” shows that Lucretius thought lepos was only to be praised when applied to truthful content (i.e. the Epicurean message).

Later Epicureans rejected theories about language and poetry which prioritised sound. Demetrius Laco, in Περὶ ποιημάτων I column XIV-XV (Romeo 1988: 97),\textsuperscript{542} discussed a view, or views, according to which ἀκοὴ played a part in κρίσις ποιημάτων, apparently in conjunction with δίανοια. Andromenedes is named in the fragmentary text.

Philodemus also discussed theories which emphasised ἀκοὴ in κρίσις

\textsuperscript{539} It seems somehow artificial to say that lepos refers generally to the charm of the poem, while lepido sonore refers only to the idea of sound.

\textsuperscript{540} Bailey 1947: 146.

\textsuperscript{541} Lucretius seems to be considering here whether inversa verba and pleasantness of sound make content true or rather are the right medium to convey truth, rather than judging the literary merits of poetry (κρίσις ποιημάτων), but he may be conflating the two issues.

\textsuperscript{542} The text printed in Milanese for XIV, is different from that in Romeo’s 1988 edition, but his general point seems valid.
His \textit{Περὶ ποιηματων} I summarizes a lost work by the critic Crates of Mallos,\footnote{Asmis (1992b: 139-140) thinks that Crates cannot be called a “Stoic”, because there is no evidence he was a professional philosopher (as well as grammarian and κριτικός). However he certainly shared some of the Stoics’ doctrines: Varro in \textit{De lingua Latina} IX. 1 reports that Crates endorsed Chrysippus’ ἀνωμαλία against Aristarchus’ ἀναλογία. Broggiato (2001: lxiii-lxv) thinks that it cannot be settled whether Crates was himself a Stoic, despite points of contact with Stoic methodology. Most scholars have thought that exegesis of poetical texts makes a clear connection between Crates and the Stoic school. J. Porter however has argued (‘Hermeneutic Lines and Circles: Aristarchus and Crates on the Exegesis of Homer’ in R. Lamberton and J. Keaney \textit{Homer’s Ancient Readers}, 1992) that it is fortuitous that Crates’ theories coincide with Stoic theories.} in which Crates presented a series of critics who — Crates thought — ascribed the judgement of poetry to ἄκοῃ (Janko 2000: 134). Such critics are referred to by Philodemus, probably following Crates, as κριτικοὶ;\footnote{Janko (2000: 125) argues that the κριτικοὶ were not, as previously thought, a ‘school’ as such: Philodemus used the term as a “convenient way to denote theorists whom he believed to share certain views about euphony”, suggesting (2000: 127) that Chrysippus’ work \textit{Πρὸς τοὺς κριτικοὺς} probably meant ‘Against the literary critics’, generally speaking.} we hear of Andromenides, Heracleodorus, and Pausimachus of Miletus (the most radical of the euphonists).\footnote{Janko (2000: 188): Pausimachus thought good poets “had a natural ability to hit upon sound that pleases the many and reflect the real nature of things, because it reflects the primal language of the name maker who designed speech to embody their physical properties; this exalts \textit{ingenium} and expels \textit{ars} from poetry”. Pausimachus gave no importance to content, genre and word choice.} Philodemus proceeded to refute such views in \textit{Περὶ ποιηματων} II.\footnote{Janko 2000: 123-124.}

In Lucretius’ day theories emphasising ἄκοῃ for judging the value of poetry were connected with the Stoic school. The Stoics, who like the Epicureans believed that
language developed by φῶς, seem to have built their theory exclusively on sound. Diogenes of Babylon’s definition of φωνή is very similar to Pausimachus’ theory given at Περὶ ποιημάτων I 100 and 114-115 (Janko 2000: 181). It seems conceivable that the Stoics’ theories encouraged the view that ἀκοή conveyed the message of words, and therefore of poetry, directly through the ear.

The Stoics thought that sound and reality are naturally linked; at least in the case of the early words the sounds were attempts to imitate their referents. The Stoics built their etymological theory exclusively on sound; they held that a direct relationship exists between the sound of the first words and their referent, as illustrated by onomatopoeic words. The Stoics’ views on etymology resemble the views Plato

547 See Matthews (1990: 44-45) on Stoic φωνή, i.e. the air in motion serving as signifier, one of the two branches of Stoic dialectic (the other branch dealing with the thing signified, an incorporeal entity). On Diogenes of Babylon, who wrote a work Περὶ φωνῆς (Diogenes Laertius VII. 57b), see Matthews 1994: 11-12.

548 Janko (2000: 177) quotes a passage from Augustine’s De dialectica 6 = 644 K. Hüsler, Die Fragmente zur Dialektik der Stoiker (Stuttgart and Bad Cannsat 1987): haec quasi cunabula verborum esse crediderunt (sc. the Stoics), ubi sensus rerum cum sonorum sensu concordarent. The importance of φωνή for the Stoics is reflected in the fact that Philo summarises the grammatical curriculum as πάσα ἡ περὶ φωνῆς καὶ στοιχεῖων καὶ τῶν τοῦ λόγου μερῶν ἰδέα (Janko 2000: 178). Given that Stoic ideas were very influential in teaching in (late) antiquity, Lucretius would have had more reason to react against them.


550 Algra (1999: 181): “as one text has it ‘according to the Stoics the first sounds are imitations of the things (pragmata) of which the names are said’”.

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attributes to Cratylus.\textsuperscript{551}

The Stoics thought that the first human words were imitative of the things they described and all later words were derived from them. A passage from Origen seems instructive about how the Stoics' view of language differed from the Epicureans' \ldots \textsuperscript{552}

\begin{quote}
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\text{οἵτινες Στοάς, οὐσίας, μιμομένων τῶν πρῶτων φωνῶν τὰ πράγματα, καθ’ ὧν τὰ ὄνοματα καθὸ καὶ στοιχεῖα τινα τῆς ἐπιμολογίας εἰσάγουσιν, ἢ, ὡς διδάσκει Ἱππίκουρος ἑτέρως ἢ ὡς οἴονται οἱ ἀπὸ τῆς Στοάς, φύσις ἐστὶ τὰ ὄνοματα ἀπορρηξάντων τῶν πρῶτων ἀνθρώπων τινάς φωνὰς κατὰ τῶν πραγμάτων (Snyder 1980: 29).\textsuperscript{553} For the Epicureans the names of things were a reaction to their referents,\textsuperscript{554} while for the Stoics the names were direct phonic imitation of the referent.\textsuperscript{554}
\end{align*}
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\end{quote}


\textsuperscript{552} Contra Celsum 1.24, p. 18 Hoesch.

\textsuperscript{553} Adorno (1990: 28) notes how in Ad Herodotum 75-76 it is stated that many worlds and therefore many languages are possible. Adorno suggests that the stage of θέσις explains differences between languages, and concludes (1990: 31) that the Stoic view of language is 'closed' (preserving global order divinity of the cosmos), while the Epicurean view is 'open' (leaving more to chance, preserving man, and his world).

\textsuperscript{554} According Asmis (1992a: 401) the Stoics “sharply repudiated” the δόξα according to which a poem is good “whenever there is composition that delights the hearing or moves along beautifully and expresses the thought powerfully” (Mangoni XXIX 24-30; Asmis 1992a: 397), because they considered content important. This looks like Asmis' unwarranted inference, since Philodemus does not say anything about the Stoics in the passage. There is indeed evidence that some Stoics placed emphasis on content: Philodemus writes in Περὶ ποιημάτων V (PHerc. 403 fragment 4; see Angeli 1988: 94-65 and Ioppolo 2003: 132, note 9): λέγω μὴ μόνον ἀπαθείσης ἐξοχάτως εἶναι καὶ παρὰ τὸν βίον ζῶντας, εἰ τινὲς εἰσιν
There is evidence that Cleanthes even thought that particular sound-effects could increase the truthfulness of the content. Philodemus in Περὶ μουσικῆς (S.V.F. 486) reports that Crates thought that τὰ μέτρα καὶ τὰ μέλη καὶ τοὺς ρυθμοὺς ὡς μάλιστα προσκινεῖσθαι πρὸς τὴν ἀλήθειαν τῆς τῶν θείων θεωρίας, even though the language of philosophy can express them ἱκανῶς. Cleanthes thought that sound could increase the truthfulness of the content.555

Further evidence linking the Stoics with theories of εὐφωνία comes from Περὶ ποιημάτων V. In columns XVI 28 - XXIV 22 Philodemus attacks an unidentified critic, to whom he refers as ἀντεχόμενος τῶν Στοιχείων, or the like.556 This critic identified ἀκοή as the basis for judging poetic σύνθεσις and valued εὐφωνία 


555 Asmis (1990: 147) suggests the critic ἀντεχόμενος τῶν Στοιχείων drew on some general Stoic doctrine “to formulate a new view of poetry”. He divided poems into two components διάνοια and σύνθεσις (Asmis 1990: 152). She argues (1990: 195-196) that the division thought/linguistic structure “shows that, like Cleanthes, he held that there is a contribution toward moral goodness from two sides: the intellectual appreciation of the thought, and the perception of the sound pattern. In this combination, the latter enhances the former, so that we may indeed, as Cleanthes said, approach more closely to god”.

556 Janko (2000: 125) argues that he is not Ariston of Chios (pupil of Zeno). Ioppolo defends the identification with Aristo of Chios, on grounds of content.


In columns XXIII 21-XXIV 12 Philodemus says that it is ridiculous to hold that not λόγος but τριβή κατὰ τὴν ἀκοήν recognises σπουδαία σύνθεσις. It is unfortunate to bring in the concept that the euphony which shews forth from σύνθεσις τῶν λέξεων and to make the τριβή τῆς ἀκοῆς judge this; and even more unfortunate to ascribe this σύνθεσις τῶν λέξεων to the ἄλογοι ἀκοαί. Philodemus refutes at many points in columns XXI to XXIX the view that the value of poetry lies in the acoustic pleasure produced by σύνθεσις, the disposition of words and sound in the verse.

Crates also considered ἀκοή important in κρίσις ποιήματων. Crates’ method involved judging by ear the λογικὰ θεωρήματα (rational principles) inherent in the verse.559 The critic is aware of content when he evaluates the form, although he does not judge the content itself. Crates assigned special importance to systematic study of the individual letter-sounds or στοιχεῖα.560

The importance of hearing in Crates’ theory is clear from column XXVII lines 19-21 . . . καὶ διὰ τὸ φάσκειν δι[α]γινώσκεσθαι τὴν ύπάρχουσαν ἐν τοῖς ποιήμασι τῆς φυσικῆς διαφορὰν τῆς ἀκοῆς. Crates diverged from the euphonists

558 Mangoni (1993: 263) suggests that Philodemus tendentiously implied that the critic considered σύνθεσις more important than διάνοια, while in fact the critic ἀντεχόμενος τῶν Στωι[κῶν δο]ξῶν considered them equally important.

559 Janko 2000: 121.

because he claimed that form cannot be judged without reference to content, and therefore saw himself as doing justice to both content and the formal and-or aural properties\textsuperscript{561} of verse (Janko 2000: 127).\textsuperscript{562} Crates’ view that the ears themselves are aware of the content when forming their judgement on poetry looks like a reworking, or elaboration, of the more radical euphonic views held by other critics.\textsuperscript{563} Crates’ position is perhaps closer to a theory where (a) sound conveys sense than to one where (b) only sound, not sense, matters.

\textsuperscript{561} Mangoni (1993: 70) Philodemus declares in XXIX 7-18 that a basic aspect of Crates’ aesthetics, τὰ περὶ τῶν στοιχείων, ἐν οἷς εἶναι φήσι τῶν σπουδαίων ποιημάτων, and the acoustic pleasure their sound produces, had been discussed in the second book. Crates gave ἁγεμονία to words, using ἡθεοιν (or πάθεοιν) as allies. Asmis (1992: 141) argues that poetic goodness in Crates’ view consists of pleasing arrangement of elementary sounds.

\textsuperscript{562} According to Asmis (2004: 7) Crates avoided distinguishing the linguistic construct from the thought : “he identified the upper level as “the vocal sound that is displayed by composition” (τὴν ἐπιφαινομένην [α]ὕτη φωνὴν). Sound is at the surface; underlying it are thoughts, νοοῦμενοι. Since a verbal composition is nothing but a certain kind of sound, Crates’ formulation is compatible with the basic distinction; but his focus on sound as a surface property of language makes his position unique”. But the general consensus is that Philodemus is reporting, in the fragment from which Asmis is presumably quoting, that Crates misunderstands the views of Heracleodorus and those who share them, since they ὁ ὤ γὰρ τὴν σύνθεσιν, ἀλλὰ τὴν ἐπιφαινομένην [α]ὕτη φωνὴν ἐπὶ[αἰνῇ] (Janko 2000: 167). Asmis should at least mention the possibility since Delattre’s emendation is given in Janko’s book, of which she is somewhat dismissive.

\textsuperscript{563} Asmis (1992b: 152) points out that while some critics held that the thought of a poem can be judged through experienced hearing together with sound Crates suspended judgement of the thought, because the thought cannot be judged praiseworthy “on the basis of the experienced hearing”.

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It is not clear what specific version of the euphonist theory Lucretius is arguing against. The expression *vera constituant* may suggest that Lucretius is arguing not just against the claim that the excellence of a literary text is determined by its phonic qualities, but also, and perhaps mainly, against the view that sounds are important as conveyors of the content inherent in them (and that the ears themselves judge such a content). Lucretius had in mind the connection of sound and content which the Stoic school elaborated, influenced perhaps by Pythagorean views.

Lucretius' *tangere aures* is paralleled in Philodemus. The expression τὴν ἀκοήν γαρ γαλιζεῖν is a *locus communis* in Philodemus' writings, as Sbordone (1972) first noticed. A better understanding of Philodemus' work Περὶ ποιημάτων shows that the expression τὴν ἀκοήν γαρ γαλιζεῖν was a technical term, popular with Hellenistic literary critics.

In Περὶ ποιημάτων II (fragment 19 of *PHerc. 994*) Philodemus insists, arguing against Pausimachus, that it is inadmissible to hold that hearing (ἀκοή) can judge whether a line has good rhythm or not. Philodemus concedes that rhythm and μέτρα "titillate" the ear, seemingly implying that this effect on the hearing does not, or should not, affect our judgement of the rhythm of the line: ὠιόμεθα γὰρ δῆπον καὶ ὑπὸ

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564 Milanese (1989: 134) comments on the "precisione, si vorrebbe dire il tecnicismo" in Lucretius' choice of words. It is hard to see why he takes *vera constituant* to refer to judgement of poetic composition.

The expression also occurs in Janko 160.14 - 161.1, where Philodemus is arguing against Andromenides (Janko 2000: 371), and has been restored by Janko in 208.14-16 (διάνοια [. . . . . . . . τῆς] συνθέσει φω[νη . . τῆς] ἀ[κοης γαρ[γαλιζομένης] ἐπιφαίνουσα). A further occurrence of the verb is in PHer. 446, which is also part of Περὶ ποιημάτων I. Philodemus uses the verb γαργαλιζεσθαι in 49.1-10 while considering the views of Pausimachus (Janko 2000: 238). The verb γαργαλιζεσθαι was part of the vocabulary of the euphonists. There is no need to assume that Lucretius got his expression tetigit aures directly from Philodemus. Since sound was central to Stoic theories about language and poetry it seems very likely that Lucretius had the Stoics in mind when he wrote belle tangere aures and lepido fucata sonore.

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566 And note the reference to ἀπλή φωνή in the lacunose context at the end of fragment 20 of PHer. 994.

567 Philodemus’ expressions (PHer. 994 fragment 18; Sbordone 1972: 51) ἀποδιδόναι τῆς ἡδείας φωνῆς, and γενναῖος τῇρηθὲν ἀκοῦσεως ἀνίψητην can be quoted as parallels for Lucretius’ lepido sonore.

568 Sbordone 1972: 54-55.

569 Janko (2000: 9) thinks that Lucretius may have been familiar with Demetrius’ and Philodemus’ polemics.
Let us now turn to the suggestion that \textit{άλληγορία} is the primary reference in Lucretius' \textit{inversis sub verbis} (Milanese 1989: 143). Other scholars reach different conclusions.\textsuperscript{570} Schrijvers (1970: 45) thinks that \textit{inversa verba} has a general sense, which includes all those figures of speech whereby an expression assumes a sense different from its own, forced antitheses. Ernout (1925: 137) quotes \textit{ἀθάνατοι θνητοί, θνητοὶ ἀθάνατοι ζώντες τὸν ἐκείνων θάνατον, τὸν δὲ ἐκείνων βίον τεθνεώτες (DK B62), ὁδὸς ἄνω κάτω μία καὶ ὤμη (DK B60), and συνάψις δλα καὶ σιχ δλα, συμφερόμενον διαφερόμενον, συναίδον διαιδον, καὶ ἐκ παντῶν ἐν καὶ ἐξ ἐνὸς πάντα (DK B10 lines 10-12). Inversa verba could refer to such forced antitheses in Heraclitus' style, but such a meaning is not attested elsewhere. However such forced antitheses may well be the cause of ambiguity. Schrijvers (1970: 43-44) has it that Lucretius is not referring to (a) the syntax or order of words (\textit{ἀναστροφή}), but to (b) the semantics of language, the relationship between words and their referent: "l'anastrophe n'a ni dans les écrits d'Héraclite ni dans aucun autre ouvrage littéraire le rayonnement extraordinaire auquel les vers 641/645 de Lucrece font allusion". This seems in line with his view that we have an "illustration du contenu" (1970: 44). But where does this line of reasoning leave Schrijvers' theory that irony is included? Irony was not a feature of Heraclitus' text. I think it is certainly conceivable that word order produced (perhaps intentional) ambiguity in Heraclitus' text. One of the meaning Quintilian gives to \textit{inversio} is a simple reference to inverted word-order (\textit{inversionis vitium ἀναστροφήν vocant} I. 5.40). Kleve (1997: 55) connects Lucretius' criticism of \textit{inversa verba} with Philodemus' criticism in \textit{Περὶ ῥητορικῆς} I of the use of \textit{hyperbata} to conceal a lack of thought. I am not sure one can exclude a syntactical reference in \textit{inversa verba}.
such as metaphor (DRN I 638 and 644), irony (639) and ambiguity (641). I agree with Schrijvers that the reference is not specifically to allegory, indeed it is perhaps unlikely that Lucretius is referring to allegory, and especially to metonymy, in these lines.

The evidence for the meaning of *inversa verba* is scanty. There are two parallels for *inversio verborum*, and one for *inversa verba*. The only text mentioning allegory is Quintilian VIII. 6. 44: ἄλληγορία, quam inversionem interpretantur (Giussani 1898: 88). But one perhaps cannot be certain that *inversio* was used in that sense in Lucretius' time. In Cicero *De oratore* II. 261 the speaker, Caesar, gives an account of the *genera quae risum maxime moveant* (248), and says: *in verbis etiam illa sunt, quae aut (a) ex immutata oratione ducuntur, aut (b) ex unius verbi translatione, aut (c) ex inversione verborum.* Caesar's example for (c) is: 'Audiamus' inquit 'pulchellum

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571 Yet Schrijvers objects to rendering *inversa verba* "sous expressions allégoriques" because Lucretius speaks about the relation between *res* and *verba* in II 655-657 (below page 303). Schrijvers thinks that although Lucretius' examples in *DRN II* 655-657 are strictly speaking occurrences of metonymy and "catachrêses" (according to the definition in rhetorical manuals), Lucretius' remarks extend to mythological expressions in general. I am not sure one can assume this.

572 Gale (1994: 32-33) thinks *inversis sub verbis* "is probably intentionally obscure . . .", but considers it probable that Lucretius is referring to allegory as well as other stylistic features.

573 *Ad Herennium* I. 10 does not give a description of what is meant: *si defessi erint audiendo, ab aliqua re, quae risum movere possit, ab apologeto, fabula vereri similis, imitatione depravat<α>, inversione, ambiguo, suspicione, inrisione, stultitia . . .

574 For Quintilian using *inversio* for word-order above, note 570.

575 According to May-Wisse (2001: 195, note 241) (a) *inmutata oratio*, which may have been a technical term, means "from altered speech" concerning more than one word (comparing *permutatio* in *Ad
puerum' Crassus. Cum esset arrisum, 'Non potui mihi' inquit Lamia, 'formam ipse fingere; ingenium potui'. Tum hic, 'Audiamus', inquit, 'disertum'. Cicero's usage suggests picking on the words of an opponent so as to create irony. It looks as though (c) has nothing to do with allegory, which is rather referred to in (a).

Giussani appears to take inversa verba in Terence Hautontimoroumenos 372 as a reference to allegory, since he refers to this use as support for his interpretation. The context in Terence is that the best way to be successful in deceiving someone is to avoid double meanings, since these may reveal the hidden agenda.

Given the exact parallel from Terence above I am inclined to think that ambiguity and double meanings were the main reference in sub inversis verbis. The use of inversio verborum in Cicero seems consistent with such a reading. Lucretius is criticising ambiguous language, and he may well have had double meanings and riddles of oracular responses in mind at this point. Ambiguity was characteristic of oracles. Lucretius, by

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*Herennium IV. 46*, (b) means "from the transfer of one word", and (c) "from the inversion of words". Leeman (1989: 285) who comments on *ex immutatione*: "nur h. 1. synonym mit allegoria (letztgenannter Terminus u. a. Orat. 94; Quint. 9.2.46; Demetr. Eloc. 151.)". In *De oratore* III. 166-167, where Cicero is speaking of allegory as prolonged use of metaphors, the verb used is *transferre* rather than *invertere*.

576 Seneca (*Epistulae morales* 100. 5) comments on the style of the orator Fabianus: ... *electa verba sunt, non captata nec huius saeculi more contra naturam suam posita et inversa ...* Presumably *inversa* means the same as *contra naturam suam posita* (which presumably refers to meaning). Seneca probably used the latter term for rhetorical *variatio*.

577 Schrijvers (1970: 44) points out that the scholiast to Terence gives *verba devia, ambigua, figurata* as synonyms of *inversa verba*.
using *inversa verba*, is equating Heraclitus’ language to the language of the Pythia, and anticipates his mention of the Pythia in the refutation of Empedocles.\(^{578}\)

DK B92 shows that Heraclitus commented on the style of the pronouncements of the Delphic oracle. Sarapion says in this passage from Plutarch’s *De Pythiae oraculis* (397A): “οὐκ ὁράις . . . δειν χάριν ἔχει τὰ Σαπφικὰ μέλη κηλούντα καὶ καταθέλοντα τοὺς ἄκροωμένους; “Σίβυλλα δὲ μαίνομένωι στόματι” καθ’ Ἡράκλειτον “ἀγέλαστα καὶ ἀκαλλώπιστα καὶ ἀμύρσιτα φθεγγομένη χιλίων ἔτων ἐξικνεῖται τῇ φωνῇ” διὰ τὸν θεόν” (Schröder 1990: 85). And in DK B93 (*De Pythiae oraculis* 404D) Theon says: “οἶμαι δὲ <α> γιγνώσκειν τὸ καθ’ Ἡράκλειτωι λεγόμενον ὡς “ὁ ἄναξ, οὐ τὸ μαντεῖόν ἑστι τὸ ἐν Δελφοῖς, οὔτε λέγει οὔτε κρύπτει ἀλλὰ σημαίνει”” (Schröder 1990: 98).\(^ {579}\)

Pronouncements by oracles could be understood in more than one way, and often in opposite ways, depending on interpretation. Timon of Phlius called Heraclitus αἰνικτής (Diogenes Laertius IX. 6). Heraclitus’ style, in particular his use of oxymoron, is liable to have opposite interpretations. *Inversa verba* refers, I think, to Heraclitus’ use of expressions which can have more than one meaning, and one cannot rule out that at least on occasions the meaning was ambiguous because words are taken where they do not belong. Syntax and word order may be involved, contrary to what Schrijvers thinks

\(^{578}\) Above note 505.

\(^{579}\) Further evidence comes from Heraclitus DK A20 (Lenaghan 1967: 231). If the testimony is genuine, Heraclitus commented on the epistemological/psychological theory behind oracles, and that he endorsed oracles. It may be significant that Chrysippus wrote a work Περὶ χρησμῶν (*S.V.F.* I. 481).
It is interesting that the Stoics devoted special attention to ambiguity, ἀμφιβολία. They defined ἀμφιβολία as a linguistic phenomenon (Atherton 1993: 1). One and the same linguistic item can mean or signify two or more different things. Chrysippus was particularly interested in ἀμφιβολία, since there are 7 titles on this topic attributed to him in the list in Diogenes Laertius VII. 193. Aulus Gellius XI. 12.1 and August. Dial. 9 reports that Chrysippus asserts that ‘every word is ambiguous by nature, since two or more meanings can be extracted from it.’

The Stoics may well have engaged in interpretation of the ‘riddles’ posed by their enigmatic forerunner Heraclitus. It would make sense for them to try to make clear what Heraclitus, whom they considered an authority, meant to say. Cleanthes wrote τὸν Ἡρακλείτου ἐξηγήσεων τέσσαρα (Diogenes Laertius VII. 174), a work which

580 Snyder (1980: 61) interprets ἀμφιβολία in Aristotle as the possibility of double interpretation due to syntactical uncertainties.


582 Further evidence for the connection between Heraclitus and the Stoics comes from Philodemus’ Περὶ ἐνοετέων, Pherc. 1428 VII. 12 (Obbink 2000: 212): τὰ παραπλήσια δὲ κάν τοῖς Περὶ φύσεως γράφει μεθ’ ὧν εἴπαμεν καὶ τοῖς Ἡρακλείτου συνοικεῖων... καὶ τὸν πόλεμον καὶ τὸν Δία τὸν αὐτὸν εἶναι, καθάπερ καὶ τὸν Ἡρακλείτου λέγειν.

583 Could some have been textual criticism, as Zeno and Chrysippus seem to have practiced on Homer’s text? Long points out (1996: 65-66) that all we know about Zeno’s five books on Homer is that they discussed textual cruces, and that the eight examples of Chrysippus’ work on Homer are all emendations or grammatical explanations.

299
Long thinks was based on Heraclides’ earlier work in four books.\textsuperscript{584} \textit{S.V.F.} I. 620 reports that Sphaerus wrote five books on Heraclitus (Περὶ Ὅρφεως ἐπισκηπτεῖν ἐπὶ οὔτω καὶ Ἡσιόδου καὶ συνεξάπτουσαν). And in Plutarch’s \textit{De defectu oraculorum} 415F Cleombratos says: “ἀκούω ταῦτα πολλῶν καὶ ὀρῶ τὴν Στωικήν ἐκπύρωσιν ὡσπερ τὰ Ὅρφεως ἐπισκηπτεῖν ἐπὶ οὔτω καὶ Ὡσιόδου καὶ συνεξάπτουσαν.”\textsuperscript{585}

Epicurus himself had discussed ἀμφιβολία. Arrighetti text 31. 14 (1973: 307) reads: . . . ἀλλ’ οὕτω μόνον διὰ μετάφοράς | ποιάς, ἀς [ἐπήγα]ν ἐπὶ τὰ ἄγνωστα | (τῇ αὐτῇ ἀπὸ αὐτῶν) | καὶ πλάνας, | ἀς λέγομεν ἐν τοῖς Περὶ ἀμφιβολίας ἦμῖν ἀναγεγραμμένοις . . . Sedley (1976b: 146-147) notes that Diodorus Cronus, the leading member of the Megarians (the so-called διαλεκτικοί) was teacher of Zeno the Stoic: meaning of word is nothing more than that uttered by speaker. Sedley argues that Diodorus was the reason why Epicurus was “busily revising and tightening up his epistemological doctrines”. Chrysippus presumably had a reply to Epicurus’ views since he wrote widely on the topic. If later Epicureans defended Epicurus’ position against the Stoics, this may be how Lucretius became familiar with the issue.

Lucretius may not have drawn a sharp distinction between ambiguous ‘riddles’

\textsuperscript{584} Heraclides of Pontus is said to have written four books of ἐπισκηπτεῖν on Heraclitus in Diogenes Laertius V. 88. Diogenes Laertius IX. 15 reports that Heraclides’ work was preceded by a commentary on Heraclitus’ οὐγγαρμα by Antisthenes.

\textsuperscript{585} Rescigno 1995: 134.
and allegorical interpretation, since the two were not sharply separated in antiquity. Enigma, proverb and irony are subdivisions of allegory; irony is included because it is the expression of a meaning opposite to what is said (Innes 2003: 20, note 22). Quintilian VIII. 6. 52 considers riddles as allegory taken to excess and made obscure.\footnote{Innes indicates that the influence was Aristotle who had classed proverb and enigma under 'saying what is not said' and linked them with metaphor. Aristotle \textit{Poetics} 22. 1458a25-26 connects \textit{αἴνιγμα} with excessive use of \textit{μεταφοράι}.}

The Stoics were certainly interested in metonymy, in connection with their reading of myths.\footnote{Whether the Stoics earlier than the first century A.D. (the time of the allegorist Heraclitus) ever practiced allegory in the sense attested in rhetorical texts is doubtful (Boys-Stones 2003: 215). Boys-Stones (2003: 2) has it that the word \textit{άλληγορία} is not attested before the first century B.C., and that the earliest attestations, by rhetoricians, indicate that allegory was understood as sustained use of metaphors. Cicero in \textit{Orator} 94 says that the Greeks used the term in such a way. As for the first occurrence of \textit{άλληγορία}, it seems at least possible that this is in Demetrius Laco \textit{Περί ποιημάτων} II, column I.I (Romeo 1988: 118): \textit{ταύτα μετά τρόπων καὶ ἀλληγοριῶν καὶ τόνων λέγεται ποιημάτα δι[ά] τὴν κατὰ νόμον ἐντροχάζουσαν κοινότητα. πρός[ή]τον μὲν γὰρ λέγει[ό]μεν [τι] ποιημά[τοι] βία[ν ἔχειν]. Demetrius Laco was probably contemporary with Zeno of Sidon, who lived from 150 B.C. to \textit{circa} 75 B.C. (Puglia 1988a: 39-41).}
natura deorum 40.\textsuperscript{588} Crates’ interest in metonymy is also well known,\textsuperscript{589} whether or not he represents orthodox Stoic practice.\textsuperscript{590} There is evidence in Strabo III. 4. 4 that Crates tried to show that Homer knew that the earth and the entire world are spherical, by using allegory and etymology.\textsuperscript{591}

There is also internal evidence from \textit{DRN} which suggests that metonymy is not the sole, or main, reference in \textit{inversis sub verbis}. Lucretius uses metonymy himself. Venus in the prologue\textsuperscript{592} is clearly not the goddess, but stands for \textit{amor} (\(=\) \textit{umor}), as the final section of \textit{DRN} IV reveals. Woltjer (1887: 178) had already seen how Lucretius often explains his metonymies, referring to the end of book IV as explanation of the metonymy of Venus. Thury (1987: 271) rightly highlights the importance of the expression \textit{naturae species ratioque} in Lucretius’ poem. Lucretius gives a description

\textsuperscript{588} And Cicero \textit{De natura deorum} 41 shows that Chrysippus explained the names, and possibly the myths, transmitted by Homer and other poets. Long (1996: 66-67) however argues that Philodemus, Cicero’s source, shows Chrysippus did not take Homer to be a crypto-Stoics (Cicero is tendentiously misrepresenting). Long (1996: 59-61) argues that the Stoics were not practising allegory on Homer, and (1996: 73) that the later Stoic Cornutus too considered Homer and Hesiod transmitters of myths (rather than crypto-Stoics).

\textsuperscript{589} Janko (2000: 123, note 4) points out that “for Crates, Homer presented the truth only by presenting the \(\lambda\omega\gamma\iota\kappa\alpha\ \theta\epsilon\omega\rho\omicron\mu\iota\alpha\) whereby the truth about the world is indirectly conveyed through allegory”. It may be that Crates saw the allegorical message as the content the ear was aware of when judging poetry (above page 292).

\textsuperscript{590} Broggiato 2001: lxi, referring to her F3, F12, F26 F59, F 131. See also Mangoni 1993: 72, note 211.

\textsuperscript{591} Broggiato 2001: lxiv.

\textsuperscript{592} Note in this context the words \textit{amorem} and \textit{cupide} in \textit{DRN} I 19-20.
of the *species* of Venus in the prologue, but the poem must infuse *ratio* as well: after the
aspects assigned to Venus in the prologue are reevaluated, in the final section of book
IV Venus “is as much a generative force as she was at the end of the first *proemium*, but
the significance of such generation is diminished in the new context of the full scientific
explanation of the workings of the universe”.593 Lucretius locates Venus in a accurate
picture of reality.

By revealing the real nature of Venus at the end of *DRN* IV, Lucretius follows
to the letter the practice he concedes is, only just, acceptable for a poet to follow in *DRN*
II 655-659. In *DRN* II 655-659 Lucretius spells out that one should get rid of any
possible religious implications when using metonymies, such as Cybele to mean earth,
or Neptune to mean sea, or Ceres to mean corn, or Bacchus to mean wine.

West (1969: 104) has it that “Lucretius does not believe in this allegory, and he
makes this explicit by stating several times that in this passage (612, 616, 641), that these
allegories are what was meant by the *poets*. But Lucretius after saying *concedamus ut*
*dictitet*, as long as one does not make undue assumptions about *religio* (which
means taking such myths literally), goes on to use the *terra mater* image at *DRN* II 991-
998 and often elsewhere.594 Lucretius’ discussion implies condemnation of metonymy


594 See *DRN* 11 251 (*matris terrae*), *DRN* II 598-599 (*quare magna deum mater materque ferarum
*et nostri genetrix haec dicta est corporis una*), II 998 (*maternum nomen adepta est*), V 795 (*Mater terra*),
V 821-822 (*maternum nomen adepta / terra tenet merito . . .*) and V 1402 (*Mater terra*). Other uses of
metonymy by Lucretius are *DRN* II 472 (*Neptuni corpus acerbum*), III 221 (*Bacchi floe*), V 742 (*pulverulenta
Ceres*) and VI 1076 (*Neptuni facta*). According to Gale (1994: 31-32) Lucretius practices a kind of allegorism,
when it is used with unclear references. Lucretius in the Cybele passage was making clear where he stood on the issue, and how the reader should take Venus. Since Lucretius expresses in detail his views on metonymy in the Cybele passage,\footnote{595} I doubt that he is refuting metonymy or metaphorical language generally outright when condemning the meaning the \textit{stolidi} found \textit{sub inversis verbis}.\footnote{596}

There is evidence that members of the Stoic school engaged in interpretation of whole myths, following Chrysippus' example.\footnote{597} One may think that Lucretius was distancing himself only from allegorical interpretations of entire myths, although this means extracting a considerable amount from \textit{sub inversis verbis}. But again, Lucretius' poem presents whole mythical stories to be interpreted, e.g. the myths from the underworld in \textit{DRN} III 978-1023, Tantalus, Tityos, Sisyphus etc.\footnote{598} West (1969: 103)

\footnote{595} Gigandet (1998: 13) thinks that in 655-660 Lucretius is speaking of his own practice, and is not concerned with the Stoics' allegoresis (above note 49). It is not clear to me why one should exclude the other.

\footnote{596} A further point against thinking that Lucretius was referring to allegorical, or metaphorical, language with \textit{sub inversis verbis} is that such a criticism would apply much more readily to Empedocles, whose use of metaphorical language is well documented, and criticised by Aristotle.

\footnote{597} Long (1996: 75-76) points out that the only cosmological allegory Chrysippus is known to have proposed was that of a painting in Argos depicting Hera fellating Zeus (\textit{S.V.F.} II. 1071-1074), where he interpreted the story as a representation of the interaction between Zeus/god and Hera/matter (contrary to the standard Stoic etymology, Hera/aer).

\footnote{598} Cumont (1920: 229-230) thinks \textit{DRN} III 978-1023 derives from a source different from the one used for the end of \textit{DRN} III. He thinks that the source was the Pythagorean Ennius. Boyancé (1941: 147), on the other hand, connects \textit{DRN} III 978-1023 with Stoic allegorical interpretations. But can one be sure that
remarks that Lucretius did not believe such myths, but thought that they correspond to events of human life. He emphasises that while the Stoics save the myths and make them conform to their ideology, Lucretius rejects them. West thinks Lucretius is not providing an allegorical interpretation, but only arguing that men conceive all manners of false fears and foolish desires, and invent an underworld where these are endlessly punished. However Lucretius makes clear that such inventions are an accurate reflection of the human life of the non-Epicurean (...in vita sunt omnia nobis of line 979). I side with Gale (1994: 74) who holds that “mythical imagery is acceptable provided it is used to illustrate vera ratio, not as means of discovering it”. Lucretius reduces stories about the underworld to our human world, to take out any possible religious implication, but still provides an interpretation of those myths by giving corresponding examples from human life.  

Lucretius was not condemning allegorical interpretation of entire myths. Even if the Stoics are Lucretius’ real target here, it seems easier, given the Heraclitean context, to suppose a reference to some analysis or interpretation by the Stoics on Heraclitus’ text.  

It seems unlikely that anything in the book of Heraclitus, which was made up of brief statements, would have offered itself to similar interpretation. It is more

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Lucretius was not in fact using an Epicurean source, which put the myths into context?

599 Lucretius’ attitude in the case of the myth of Phaethon, which he presents in DRN V 396-415, is completely destructive.

600 Schrijvers (above note 570) assumes that the criticism is an illustration of the content of Heraclitus’ book.
likely that the reference is to ambiguous language and riddles provoked by the unusual syntax and the constant use of *oxymoron* in Heraclitus’ sayings.

It is far from certain that Lucretius was criticising the Stoics’ own rhetorical precepts, i.e. the way in which they themselves wrote, as Milanese seems to imply. Lines 641-644 refer to the attitude of the *stolidi* to the works of *others*. Lucretius may well simply be attacking the Stoics’ interest in, and appreciation of, the ambiguous language in Heraclitus’ work and similar texts. Atherton (1988: 394) notes how the Stoics overlooked contemporary stylistic precepts and reverted to earlier rhetorical models of discourse, placing emphasis on clarity, plainness and conciseness.601

Plutarch *Moralia* XIII 1047B reports remarks in the first book of Chrysippus’ *Περὶ ρητορικῆς*. Chrysippus is accused of being inconsistent because he thought disposition and delivery of a speech important, but allowed for obscurities and solecism (Cherniss 1976: 385-386). One should disregard — Chrysippus is reported to have said — not only hiatus, but also ἀσάφεια τι, ἐλλείψεις and even σολοικισμοὶ which others found appalling. This passage suggests, against the testimony of Diogenes Laertius VII. 59, that Chrysippus did not require ἑλληνισμός and σαφήνεια. *S.V.F.* I. 81, as Cherniss points out, indicates that by defending solecisms Chrysippus was following Zeno’s example. If Plutarch’s testimony is trustworthy, it is hard to see how

601 Atherton’s conclusion (1988: 425-426) is that, if one understands rhetoric as a study of ways to persuade there is no such thing as Stoic rhetoric.
clarity could have been paramount for Chrysippus.\footnote{Seneca \textit{Epistulae morales} 108. 10, referred to by Asmis (1992a: 400), is not easy to square with the Stoics rating clarity above all else: "Nam ut dicebat Cleanthes "quemadmodum spiritus noster clariorem sonum reddit, cum illum tuba per longi canalis angustias tractum patentiore novissime exitu effudit, sic sensus nostros clariores carminis arta necessitas efficit. Eadem neglegentius audiuntur minusque percutiunt, quando soluta oratione dicuntur: ubi accessere numeri et egregium sensum adstrinxere certi pedes, eadem illa sententia velut lacerto excussiore torquetur."} It looks as though different members of the Stoic school saw the matter differently.

Lucretius’ criticism of Heraclitus’ ambiguous riddles and the people who considered them true certainly fits well with thinking that the \textit{stolidi} and \textit{inanés Graii} are the Stoics. I conclude that Lucretius is referring to the Stoics in lines 639-642,\footnote{The coincidence of terminology between Lucretius and Philodemus leads Milanese (1989: 138) to discount the possibility that lines 639-644 derive from the polemic of early Epicureanism against the Sophists. I am not sure one has to assume that Lucretius was following a Greek source text at this point. As for the possibility that the target should be identified with the Sophists, who certainly placed much importance on effects of sound and style, I find this unlikely because there is no reason to link the Sophists to Heraclitus.} and intentionally avoids naming them. It is easier to put down such a way of proceeding to Lucretius, than to his source: allusion is a device more appropriate to poetry than to Epicurean philosophical prose (although opponents often are not named in Epicurean polemics). What is more, as Pizzani (1981: 472) rightly points out, the \textit{paronomasia} in \textit{stolidi} only works in Latin. It was Lucretius’ idea to introduce this reference.

Further indication that Lucretius is here independent of his Greek source comes from the way in which he speaks of ‘the Greeks’ from a distinctly Roman point of view,
in lines 639-640. When one adds these considerations to the extensive use of the metaphor, and the parody of Heraclitus it is tempting to conclude that Lucretius elaborated *ex novo* the section introducing Heraclitus and his admirers, a section which serves also as introduction to the whole *critique*. We shall see below how the passage which introduces Empedocles similarly seems to be Lucretius' 'original' contribution.604

4.3 The theme of the path, and the search for truth

Brown has it that the personal flavour of the introductory vignettes of Heraclitus as a "pretentious impostor" does not carry on in the following philosophical criticisms.605 He is right that the personal character of the introductory portrayal of Heraclitus is not sustained throughout the series of arguments which makes up the confutation. But Lucretius does occasionally pick up on the topics of the introduction. This is apparent in lines 657-659 and 690-700.

604 Anaxagoras' personality, on the other hand, receives no introduction; see below pages 340-341 on how this should be explained.

605 Brown 1983: 149. Brown seems to intend "personal" with reference to (a) the attack being on an individual personality, or style of writing rather than (b) the fact the arguments apply to a specific version of monism, or pluralism. The fact that arguments against Anaxagoras are personal in sense (b) is surely due to the fact that, as pointed out above (note 111), Anaxagoras was the only representative of unlimited pluralism.

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4.3.1 Lines 657-659

I have mentioned above (note 490) how Lucretius introduces the metaphor from travelling in line 636. *Lapsi a vera ratione videntur* suggests travellers losing their sense of direction.\(^{606}\) The image is taken up and expanded upon by the more explicit metaphor of line 657-659\(^ {607}\) *cemunt contraria . . . ardua dum metuunt amittunt vera viai*. Those who follow Heraclitus as their *dux* lose the right footpath because they are too scared to face obstacles they create for themselves.\(^ {608}\) The image from journeying figures in a negative way.\(^ {609}\) And it is interesting that Lucretius takes up the image from journeying in *derrasse* of line 711 in relation to the limited pluralists.\(^ {610}\)

\(^{606}\) Compare *DRN* II 82 *avius a vera longe ratione vagaris*.

\(^{607}\) The verb *fugitam* may also be connected to the imagery of the introduction: Heraclitus’ troops run away in fear of obstacles or the enemy.

\(^{608}\) The simile in line 663 *aestifer ignis uti lumen jacit atque vapor* also calls for comment. Lucretius is perhaps being ironic in pointing out that Heraclitus’ fire itself shows the existence of void, which Heraclitus, in Lucretius’ presentation, stubbornly denied. This in turn makes the reader think back to the problem of condensation and rarefaction and how far it can alter fire: fire and void can only make up things the nature of which is ‘fire-like’ such as *lumen* and *vapor*.

\(^{609}\) West (1969: 93) remarks that: “. . . anybody would be justified in feeling that this is a pure coincidence that *contraria* [in the sense of obstacles] can refer to journeying . . .”. I think the image from journeying is at work, here and indeed this is part of the irony in the reference of *dux*.

\(^{610}\) Lines 920-951, for which, as we have seen, the *critique* is, in a sense, a platform, draw from images applied to poetry. No doubt *avia Pieridum . . . loca* refers mainly to poetical achievements. But in *avia*
The ‘theme of the path’ has a long pedigree in Greek literature. It goes back to Hesiod *Works and Days* 287-292, and is most celebrated in Prodicus’ story of Heracles at the cross-roads.\(^{611}\) The image of *poetry* as path appears in Pindar. The ‘theme of the path’ was central to Parmenides (DK B1), who may have been the first to apply it to philosophical development.\(^{612}\) It also appears in Empedocles DK B2 line 6 (παντοσ’ ἐλευνόμενοι) and line 8 (ἔλειασθης), and DK B35 line 1 (αὐτὰρ ἐγὼ παλίνορος ἐλεύσομαι ἐς πόρον ὅμων . . . ).

Lenaghan has it that the majority of occurrences regard losing the way (*erro, avius, vagor*) and suggests that Lucretius altered the conventional philosophical image to suit his purposes. Lines *DRN* IV 508-510, where the person who does not believe in the senses cannot avoid cliffs, are a very good example of such use.\(^{613}\) It is certainly true that in Lucretius the image often appears ‘reversed’ but it is also used it in a positive

\(^{611}\) Lenaghan 1967: 227-228, note 26.

\(^{612}\) Lenaghan makes the point that Lucretius’ use of the image is exclusively philosophical except for lines 926-927, despite granting that the literary and philosophical aspects of the image are difficult to distinguish. Indeed *DRN* I 402 describes the arguments of his poem as tracks which indicate the right philosophical path (Thury 1989: 277): philosophical and poetic path are fused into one.

\(^{613}\) West 1969: 72.
way, in *DRN* VI 27-28 Epicurus’ route is a short run on a straight path to supreme good, and in *DRN* V 102-103 the sense of touch is equated with “the shortest well-built road of belief into the breast of man, the site of his intelligence”. Once again there seems to be an implicit comparison between Heraclitus, who gets his followers lost, and Epicurus, who leads straight to the truth, and consequently happiness.

4.3.2 Lines 690-700

It looks as though lines 690-700 in particular, where Lucretius attacks Heraclitus for claiming that fire is all things and only fire exists, take up themes from the introductory characterisation of Heraclitus. The argument in lines 690-700 is personal in the sense that these lines refer specifically to a belief of Heraclitus. Lucretius’ *hic idem* in line 692, which is striking after his use of ‘generic’ plurals, points in this direction. The expression draws attention to Heraclitus’ *persona*. The reader is thus encouraged to think of Lucretius’ earlier depiction of Heraclitus’. The *perdelirum* of line 692 is taken up and expanded in *tum vanum cum delirum* of 698. The argument is framed by ring-composition on madness. Both *delirum* and *vanum*, although here applied to theories, could well be taking up the characterisation of the admirers (the *delirum* is perhaps

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614 ... *nisi credere sensibus ausis / praecipitesque locos vitare et cetera quae sint / in genere hoc fugienda, sequi contraria quae sint* (“and to make for the ones which are opposite (i.e. safe”).

615 On this argument, above pages 80-82.
comparable to *stolidi*, the *vanum* recalls *inanes*).\(^{616}\)

The rhetorical questions in 699-700, where Lucretius and the reader (*nobis*) are faced with distinguishing what is true from what is false reflects the themes of the introduction of Heraclitus:

\[
\text{quo referemus enim? quid nobis certius ipsis}
\]
\[
sensibus esse potest, qui vera ac falsa notemus?
\]

The phrasing recalls the unsuccessful search for the truth of lines 635-644. According to Lenaghan (1967: 230) *nilo clara minus* of line 697 recalls line 642 and is a further play on Heraclitus’ obscurity. It is perhaps rather line 639 that line 697 picks up. Lucretius is going back to the themes from the introduction of Heraclitus to round off the section by taking up in these lines the characterisation of Heraclitus as pretentious impostor, who claims there is truth in what is beyond the senses. The opposition *contra sensus ab sensibus* in 693 should be mentioned in this context,\(^{617}\) since it take up the use of *oxymoron* in the introductory passage. It seems reasonable to think that the colouring was added by Lucretius, assuming that the argument appeared in the source at all.

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\(^{616}\) It could also be that Lucretius’ onomatopoeic alliteration *adiectu tangere tactus* in line 689, meant to illustrate the sense of touch, takes up the use of *tangere* in 643.

\(^{617}\) It seems very likely that a metaphor from construction is at work in *labefactat . . . pendent*, compare DRN IV 513-519.
4.4 Empedocles and Sicily

In lines 716-741 Lucretius grandiloquently praises Empedocles, and Empedocles’ land, Sicily, before announcing that both Empedocles and other quadruple pluralists got it badly wrong on the elements. It seems almost inconceivable that Lucretius imported such a profuse praise of Empedocles, and the extensive description of Sicily, from his philosophical source. Lucretius intentionally mixed unrelated material with the philosophical discussion. He may have composed lines 716-741 ex novo, although it is difficult to rule out that a closer model for these lines was provided by a (now lost) description of Sicily by an earlier author.

I very much doubt that the inclusion of lines 716-741 should be explained simply

618 Edwards (1989: 108) claims that Empedocles DK B112 (quoted below page 315) was Lucretius’ “prototype” for lines 716-733, which would be an example of allusion with variation: Lucretius’ insistence on videtur would be mocking Empedocles’ ὅπερ ἔσχα. Edwards explains that “those to whom Empedocles is a god are told that it seems so; those to whom Sicily seems to have produced no greater wonder than Empedocles are the few who see the prophet with his own eyes”. Play on the sense of videtur is perhaps possible in view of Lucretius’ tendency to parody opponents, but the implication Edwards sees behind Lucretius’ use of videtur seems rather elaborate. The form videtur often means no more than “is seen” in DRN. There are not enough points of contact between the two texts to hold that DK B112 was Lucretius’ model for 716-733 unless one understands ‘model’ very loosely. It is only for lines 729-733 that there is a strong case for thinking that Lucretius is picking up on Empedocles’ words, and perhaps DK B112 specifically. If DK B112 was his only source, Lucretius can be said to have composed lines 716-733 ex novo.

619 On why this author was probably not Empedocles, above note 48.
as respite from philosophical arguments. Lucretius abandoned the *signa pressa*, and introduced lines 716-741 to make a number of important points. These lines are essential for understanding Lucretius' own views and methods, therefore similar in this respect to the introduction of Heraclitus and the programmatic passages throughout *DRN*.

**4.4.1 Empedoclean style and language**

Lucretius made the most of the opportunity to refer to his predecessor's writings and style, as he had done when introducing Heraclitus. In the case of Empedocles, however, the tone is remarkably different, not surprisingly given that he was Lucretius' poetic model. In lines 716-748 Lucretius imitates Empedocles' own style, which was 'Homeric' and 'metaphorical' in Aristotle's eyes. The imitation is apparent in Lucretius' use of

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620 Lines 716-733 are the second-longest break from series of arguments so far in *DRN* I, lines 398-417 being the longest. Lucretius might in some sense be preparing the reader for the lengthy list of arguments against Empedocles, but I agree with Snyder (1972:217) that "Lucretius is not given to mere travelogues" and one should look for the underlying purpose of the passage.

621 Brown 1983: 148. Aristotle *Poetics* 1447b 17-20, on the other hand, indicates that Homer and Empedocles have nothing in common but the metre, διὸ τὸν μὲν (Homer) ποιητὴν δίκαιον καλείν, τὸν δὲ (Empedocles) φυσιολόγον μᾶλλον ἡ ποιητήν. Aristotle seems to comment on the inconsistency of defining everything in metre as poetry, or perhaps, as Obbink (1993: 51, note 4) suggests, on the inconsistency of thinking of both as dramatic poets.
metaphors, his echoes of Homer, and his use of religious and oracular imagery.

The deployment of religious and oracular imagery is what strikes me the most. Lucretius intentionally focused on this topic to emphasise Empedocles’ mysticism. That Empedocles saw himself as a god and an oracle is shown by DK B112:

οἱ φίλοι οἱ μέγα ἁστυ κατὰ ξανθοῦ ’Ακράγαντος 

ναίετ’ ἄν’ ἀκρα πόλεος, ἀγαθῶν μελεδήμονες ἔργων 

ξείνων αἰδοὶ πλημένες, κακότητος ἀπειροι, 

χαίρετ’ ἐγὼ δ’ ὑμῖν θεὸς ἀμβροτος, οὐκέτι θνητὸς 

πολεύμα μετὰ πάσι τετίμενος, ὅσπερ δοικα 

tαινιαὶς τε περιστετος στέφεσιν τε θαλείοις·

<πάσι δὲ> τοῖς ἄν ἰκωμαί ἐς ἀστεα τηλεθάοντα, 

ἀνθράσιν ἅδε γυναιξί, σεβίζομαι, οἱ ἄμ' ἐπονταί 

οἱ μὲν μαντοσυνέων κεχρημένοι, οἱ δ' ἐπὶ νούσων 

μύριοι, ἐρέοντες, ὅπι πρὸς κέρδος ἀταρπός, 

παντοίων ἐπύθοντο κλυείν εὐηκέα βαζεν.

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622 Minantur in line 722, iras in 723, vomat in 724 (assuming, as I think one should, that vomat is the right restoration of O Q G omnit, Bignone Empedocle 138-9 argues for citat), munita in 728.

623 'Ο λογὴν . . . Χάρυβδιν Odyssey XII, 113, 428; κεῖτο μέγας μεγαλωτί Iliad XVI 776.

624 Brown thinks Lucretius reproduces the “overall quality of Empedocles’ verse” although the reference is not as specific as the earlier reference to Heraclitus’ style.

625 Sanctum in line 730; divini pectoris in 731, vix humana . . . stirpe creatus in 733, divinitus in 736, ex adyto cordis in 737, sanctius profatur in 739-740.
And there are other references to oracles and prophecies in Empedocles. Lenaghan also refers to DK B3 lines 1-5; and B146 where Clement reports that Empedocles claimed that the souls of the wise are gods: εἰς δὲ τέλος μάντεις τε καὶ ύμνόποιοι καὶ ἵπτεροι / καὶ πρόμοι ἀνθρώποισιν ἑπιχοθονίοις πέλονται / ἔνθεν ἀναβλαστούσι θεοὶ τιμήσι φέριστοι. Empedocles DK B15 line 1 (οὐκ ἀν ἀνήρ τοιαῦτα σοφὸς φρεσὶ μαντεύσατο) also suggests that in his view the wise man should take over the role of the oracle.\(^{626}\) And DK B147 speaks of sharing tables with the gods. It seems beyond doubt that Lucretius intentionally referred to the fact that Empedocles thought of himself as a god (DRN I 730-733), and as an oracle making revelations which are more divine than the Pythia’s (DRN I 738-740).\(^{627}\)

It is significant that Lucretius, as Kranz (1944: 69-70) remarks, uses the oracular image of lines 738 and 739 again, in lines 111-112 of book V, to describe his own poem. DRN V 110-121 make the readers think of Empedocles. Apart from the verbatim repetition, solacia in line 113 reminds us of Empedocles’ role as a healer, which Lucretius is taking over. Moreover Empedocles held the theory Lucretius so

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\(^{626}\) Kranz (1944: 103) compares this expression with DRN I 737.

\(^{627}\) Line 737 presents a bold metaphorical expression, although somehow softened by tamquam: ex aedyl tamquam cordis responsa dedere. The idea is that cor, probably closer to “mind” than “heart” here, has an inner chamber from where oracles are delivered. Equating cor to a temple is certainly a daring image, and it seems part of Lucretius’ intention of substituting religion with philosophy. It is philosophical understanding, and not oracles, that communicates divine truths.
emphatically rebuffs. The fact that DRN V 101-103 (Smith 1992a: 387, note c) strongly resemble Empedocles DK B133 has set the Empedoclean tone. Lucretius sets up a comparison between Empedocles and himself at the outset of his cosmology.\footnote{628}

It is interesting in this context that Lucretius could be following a trend detectable in the Epicurean school.\footnote{629} Smith (1992a: 60-61, note b) gives evidence for use of oracular language within the Epicurean school, referring to Epicurus Sententiae Vaticanae 29 and Cicero De finibus II. 20 (\textit{in alio vero libro, in quo breviter comprehensis gravissimis sententis quasi oracula edidisse sapientiae dicitur}). Sedley (1998: 13-14, note 59) rightly points out that in many of the passages which mention oracles are ironical. There is irony in Philodemus' \textit{Περὶ εὖσεβείας} 2044-2045 (Obbink 1996: 568-569). Diogenes Laertius X.135 (quoted above page 252) shows this as far as Epicurus is concerned. And in Plutarch's De Pythiae oraculis 397D Theon accuses Boethus, a \προφήτας τοῦ Ὑπερκύρου, of blaming the ancient \προφῆτηδεια because the poems they used were worthless, and of blaming the contemporary \προφῆτηδεια who give their oracles \καταλογάδην καὶ διὰ τῶν ἐπιτυχόντων ὀνομάτων. Lucretius' scornful of conventional oracles of DRN VI 379-382: \textit{Hoc est igniferi naturam fulminis ipsam / perspicere et qua vi faciat rem quamque videre / non} \footnote{628 Note also how Lucretius remodells DRN I 737 as DRN V 110. The version used for Empedocles in book I could not apply to Lucretius, who does not give his own pronouncement, but Epicurus'. It may well be significant that Lucretius reserved the expression \textit{oracula} for a context where Epicurus' \textit{ratio} (= pronouncements) has to guide the Epicurean, though based on the evidence of the senses.}

\footnote{629} B. Farrington (\textit{The Faith of Epicurus}, 1961) suggests that Epicurus should be read as an anti-empiricist.
The Epicureans were heavily critical of conventional oracles, but at the same time they appropriated the imagery for themselves (Smith 1996:130 and 130, note 75). The only oracle is Epicurus’ atomistic theory is the only oracle. Lucretius used oracular imagery generally in a positive (as well as a negative way), to stress that philosophical poetry is the only truly oracular medium. The implication of the intertextuality is, in my view, that Empedocles’ was a good attempt but not good enough.

Lucretius saw himself as following Empedocles in appropriating the role which formerly was that of oracles. And it may be significant in this context that there was a connection between the Pythia and the Muses (i.e. poetry). Plutarch in in De Pythiae oraculis 397, where he discusses why the Pythia stopped using verses for responses, reports that in Delphi, there was a temple to the Muses. The Sybil had come from Helicon (or according to some ἐκ Μαλλεων) where she was fed by the Muses. The Pythia was connected with poetry. Transferring the powers of revelation of the Muses from religion to philosophical poetry is where Empedocles’ excellence lies according to Lucretius.

The tone with which the prologue to DRN ends is that of someone making a revelation (DRN 143-150). Lucretius’ use of the oracular image in book V sets his own carmina up against Empedocles’. Only Lucretius is pronouncing fata which are truly divine, because they are not Lucretius’ own, but they derive from the only god, Epicurus.
4.4.2 Lucretius' praise

The fact that Lucretius reveals in book V that he has surpassed Empedocles’ achievement does not in my view mean that Lucretius is being underhand in his praise of Empedocles in the critique, that he was criticising rather than praising Empedocles, as Edwards (1989) suggests. Edwards has the merit of highlighting that Lucretius’ poem hints repeatedly at the fact that he has surpassed Empedocles’ work, but some of the sniping at Empedocles which he finds hidden in Lucretius’ praise is unconvincing.

Edwards (1989: 106-107) argues that Empedocles’ theories enjoyed popularity in his time, referring to the fact that the learned augur Nigidius Figulus, who inspired Cicero’s interest in Plato’s Timaeus (Cicero Timaeus I. 1), would have been interested in Empedocles’ theories and that Sallust’s Empedoclea derived its content from Empedocles. That Empedocles’ theories were of any more than historical interest at Lucretius’ time, and that Lucretius would have seen his theories as a serious contemporary threat, seems at the very least disputable.

Edwards argues that Lucretius (a) first outdoes Empedocles in his own style in

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630 Edwards 1989: 106. Edwards (1989: 105) claims that Epicurus denied Plato originality by attributing the system of the four elements to Empedocles in book XIV (Arrighetti text [29] [28] = Leone column XL). But there is no evidence that Epicurus has the problem of the four elements in mind in this specific fragment. Epicurus is describing, hypothetically, how an undetermined thinker may borrow from another (referring to borrowings from Empedocles by way of example; above note 223).
the opening of the poem (DRN I 6-9), and (b) proceeds to criticise such a style, the poets' use of metonymy, in DRN II 655-659, where his target would be the Pythagoreans, who gave mythological names to common things. That (a) the the opening of Lucretius' poem is modeled on Empedocles has long been suspected, but whether one can extrapolate from a critical attitude on Lucretius' part towards Empedocles seems doubtful. This seems somewhat similar to saying that Vergil was critical of Homer. As for (b), it seems possible that DRN II 655-659 refer to Empedocles' extensive use of metonymy. Later doxographers were struggling to make sense of Empedocles' equation of his four elements with gods in DK B6. Lucretius may be referring to such disputes and criticising the fact that Empedocles' use of metonymy, contrary to his own (above pages 303-304), was not sufficiently clear. Lucretius was correcting Empedocles' use. This does not entail that Lucretius could not also have had the Stoics in mind in the Cybele passage, especially if they offered interpretations of Empedocles' metonymies.

I agree with Edwards' suggestion (1989: 111) that DRN I 921-934 imply that Lucretius has outdone both Heraclitus and Empedocles. There are indications that Lucretius is thinking especially of his relationship to Empedocles in book I. Lines 921-

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631 Below pages 323-325.

632 Two different interpretations are attested, one in ps-Plutarch (878A = D.G. 287 lines 6-16) and one in Qosta ibn Luqa, (agreeing with Stobaeus Ecl. I. 10. 11a-b). It may be that these competing interpretations were in existence by the time of Lucretius, although Mansfeld (1995: 110-114) argues against Kingsley (1994: 236-237) that neither interpretation goes back to Theophrastus.
925 suggest poetic innovation and supremacy. The idea is expressed three times: untrodden (poetic) paths (926-927), pure springs (927), and untouched flowers (928).633

We have seen (above, pages 246) that one of the reasons, perhaps the main reason, why Lucretius introduced the critique is to set up a platform for lines 921-950.

Lucretius' relation to Empedocles is remarkably different from the veneration he shows for Epicurus. Lucretius goes out of his way to point out that he can do no more than follow the footsteps of the truly divine Epicurus: the emphatic double simile in *hirundo cynnis* and *equus haedi* in lines 5-6 of DRN III shows that there is no contest.634 But when it comes to Empedocles Lucretius implies he has challenged and surpassed him: he has composed *carmina* which are more divine and everlasting than Empedocles'.635 Lucretius' superiority is partly due to the fact that he is conveying the truly divine message of Epicurus (above page 318). But one also gets the impression that Empedocles had been outdone also as far as the poetry is concerned.

Despite Lucretius' hint at the fact that he has surpassed Empedocles, the influence Empedocles exerted on him is such that I find it difficult to think that the praise of Empedocles in the critique is not genuine. Kranz (1944) and Bartolini Niccolini

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633 The language recalls that used in describing Ennius in *DRN* I 117-119, where Gale has detected a hidden reference to Empedocles (below pages 326-327).

634 See Cabisius 1979: 240.

635 One should note in this context how Lucretius drinks from *untouched* springs when describing his poetry (where his model is Empedocles). This is the opposite of following Epicurus' *vestigia* (*DRN* III 4).
(1955) point to a number of imports.\(^{636}\)

One can also now compare from the Strasbourg papyrus lines 291-292
\[\Sigma\pi\epsilon\upsilon\delta\varepsilon\delta'\delta\upsigma\omega\varsigma\mu\nu\mu\omicron\omicron\omicron\omicron\nu\nu\alpha\nu'\omicron\delta\upsilon\tau\alpha\ [\mu\omicron\delta\varsigma\xi\kappa\eta\tau\alpha\ i\ ]\ [\hat{\eta}\delta\varepsilon\]\mu\nu\epsilon\varsigma\delta\omicron\nu\tau\alpha\kappa\lambda\upsilon\omega\nu\nu\ [v]\eta\mu\epsilon\rho\mu\tau[\varepsilon\alpha\ \delta\epsilon\kappa\rho\kappa\varepsilon\nu\] and 299-300 \(\varepsilon\kappa\tau\omega\nu\ \alpha\varphi\varepsilon\upsilon\delta\nu\varepsilon\ \kappa\omicron\mu\iota\sigma\iota\sigma\ a\ \phi\nu\varepsilon\nu\ \delta\epsilon\iota\gamma\mu\mu\tau\alpha\ \mu\omicron\delta\omega\nu\nu\cdot\] \(\delta\psi\epsilon\iota\gamma\ \xi\omicron\nu\omicron\omicron\nu\delta\nu\) \(\tau\epsilon\ \delta\iota\alpha\pi\tau\nu\zeta\iota\nu\ \tau\gamma\epsilon\varepsilon\theta\lambda\eta\varsigma[\xi]\) to Lucretius' addresses to Memmius.\(^{637}\) It seems agreed that Lucretius' direct addresses to Memmius (i.e. the internal addressee),\(^{638}\) and to divinities, imitate the very extensive use of such narrative devices in Empedocles.\(^{639}\)

\(^{636}\) Kranz connects e.g. Empedocles DK B17, line 14 with DRN II 66; (comparing Hesiod Erg. 106-107 and Parmenides DK B2 line 1) DK 20, lines 6-7 and DK 21, lines 10-12 to DRN II 342-344 and DRN I, 161-163; DK 35 line 1 and DRN V 780 (1944: 86); DK B133 with in DRN V 101-103 (1944: 97); DK B131 with Lucretius' invocation of Calliope in DRN VI 92-95 (1944: 103), and DK B1 with DRN I 50 (1944: 103), referring also to Hesiod Erg. 27. Bartolini Niccolini (1955: 281-282) links DK B17, line 26 with DRN I 331-333; DK B23 line 9 with DRN I 370 and I 1052; DK B71 (\(\epsilon\iota\ \delta\epsilon\ \tau\omicron\nu\omicron\omicron\nu\ \delta\upsilon\omicron\upsilon\ \lambda\iota\pi\omicron\alpha\upsilon\lambda\omicron\upsilon\omicron\omicron\upsilon\omicron\)) with DRN I 267; DK B23, line 11 (\(\alpha\lambda\lambda\alpha\ \tau\omicron\ro\varsigma\ \tau\alpha\upsilon\tau\varsigma\ \iota\sigma\theta\iota\iota\iota\), \(\theta\omicron\upsilon\omicron\ \pi\alpha\rho\alpha\ \mu\omicron\delta\omega\nu\nu\ \alpha\kappa\omicron\omicron\omicron\omicron\alpha\omega\alpha\)) and DK B110, line 4 with DRN I 1115 and 1117.

\(^{637}\) This rules out, in my view, Woltjer’s (1877: 181) assumption that Lucretius was not familiar with Empedocles' poem(s). Giancotti (1959: 80) is willing to consider the possibility that Empedoclean influence on Lucretius was through Ennius (his Epicharmus being influenced by the Καθάρμοι and his Euhemerus by Περὶ φύσεως). It seems beyond doubt that Lucretius read Empedocles.

\(^{638}\) The role of Memmius in DRN certainly seems comparable to that of Pausanias in Empedocles' poem (Obbink 1993: 76). Obbink (1993: 74-75) questions whether Empedocles intended his audience to identify themselves with Pausanias. On Lucretius' relationship with Memmius, below pages 377-383.

\(^{639}\) Obbink 1993: 54-55.
Campbell (2003: 102) rightly draws attention to the fact that DRN II 1081-1083 almost translates Empedocles' τούτο μὲν [αν] θηρῶν ὀριπλάγτων ἀγρότερ' εἰδη, τούτο δ' ἀν ἄθροίπων διδύμον φύμα. [τούτο δ' ἀν ἄγρων] | ριζοφόρων γέννημα καὶ ἀμπελοβάμ[ονα βότρυν] (Περὶ φύσεως book I lines 296-298; Martin and Primavesi, 1998: 139). The remarkable coincidence of terminology between Lucretius and Empedocles makes it certain, in my view, that there is a deliberate allusion to Empedocles in these lines.

The opening of DRN shows immediately that Lucretius meant his poem to be read against Empedocles, through the mention of the four elements in the opening lines and the invocation of Venus. The metonymy in Venus, and the explanation of it, is part of Lucretius' intertextuality with Empedocles. It seems significant that Aëtius I. 3. 20 defines Empedocles' Νήπτις and spring of mortals as sperm and water: this presumably reflects remarks to that effect in Empedocles' poem(s). This should perhaps be

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640 Lucretius' modifications, though, suggest to Campbell that Lucretius is in fact translating a similar passage from Empedocles' zoogyony, now lost, where Empedocles used the equivalents of Lucretius' squamigerum pecudes and corpora . . . volantum (DRN II 1083). It seems interesting, however, that there is no attested case of Lucretius directly translating from Empedocles. This may be coincidence, since much of Empedocles' production is lost, but it is also conceivable that it was a deliberate choice on Lucretius' part.

641 Sedley (1998: 11) argues that Lucretius derived his use of the 'multiple-correspondence simile' (on which see West 1970: 272-274, considering DRN I 272-275), from Empedocles DK B84, where Empedocles describes the eyes' structure and function as that of the lantern.

connected with Lucretius’ identification of *amor* and *umor*. Lucretius may well have intentionally conflated Empedocles’ *Νήστις* and *Φιλότης/Φιλία* in his addressee, Venus. It looks as though Lucretius has reduced Empedocles’ two divine natures to the most blunt physical terms, those of *umor*. Lucretius may well be picking up on line 3 of DK B6 (Νήστις θ’ ἡ δακρύοις τέγγει κρούνωσια Βρότειον).

And the similarity may extend beyond the opening lines of the poem. Martin and Primavesi (1998: 112-114) endorse Sedley’s suggestion of a lengthy prologue to Empedocles’ *Περὶ φύσεως*, which dealt with daimons and transmigration of souls, DK B115 being one of such fragments. They take it that some or even all of DK B118-B126, which are usually attributed to Empedocles’ *Καθαρμοί*, come from the prologue of

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643 Above pages 276-278.

644 See DK B17 lines 20-24: . . . καὶ Φιλότης ἐν τοῖσιν, ίση μὴκός τε πλάτος τε· τήν σύνων δέρκευ. μηδ’ ἄμμασιν ἦσο τεθεῖκα· ήτες καὶ θνητοίσι νομίζεται ἐσμένος ἄρθροις· τήν τε φύλα φρονέουσι καὶ ἀρθμα ἄργα τελεθοί. Γηθοσύνην καλέοντες ἐπώνυμον ἦδ’ Ἀφροδίτην . . . And a connection between Aphrodite and water seems suggested by Empedocles DK B73: ὡς δὲ τότε χθόνια Κύπρια, ἐπεὶ τ’ ἐδίπνευν ἐν δημβρῶι, ἐιδεια ποιησοῦσα δοῦλι πυρὶ δῶκε κρατύναι.

645 Venus should perhaps also be identified with his *natura creatrix* of *DRN* I 1629 and V 1362 and Calliope of *DRN* VI 92-95. Gale (1994: 67-68) suggests that Lucretius’ *natura creatrix* of *DRN* I 1629, *DRN* II 1117, *DRN* V 1362 is an alter ego of Venus, an “Epicurean counterpart” of Empedocles’ *Φιλία*. Gale (1994: 68) also suggests that *Venus* also takes up role of the Muse (comparing Calliope in Empedocles DK B131).

646 One of the characteristics of Catullus’ poetry is providing a further twist in a stock *genre* (shock tactics): Lucretius’ use of portrayal of Venus shows a comparable attitude.

I le p i (|>uo€Ci>£, and suggest that Empedocles may have given the transmigration of souls as the reason why he had special knowledge (the same function as Parmenides’ ὁδὸς . . . δαμονος).648 Sedley’s further suggestion that Empedocles’ Περὶ φύσεως itself opened with an invocation to Aphrodite is possible, but it seems risky to make such an assumption without any direct supporting evidence.649

Lucretius’ praised, and imitated, Empedocles because Empedocles had in his view successfully fused philosophy and poetry. The poetic qualities of the section introducing Empedocles alert us to the combination of philosophy and poetry elsewhere in Lucretius’ poem. Praising Empedocles’ achievements as a poet writing philosophy was high on Lucretius’ agenda, and perhaps his main reason for introducing lines 716-741. The description of Empedocles’ reperta as praeclara suggests that poetry is an acceptable medium — or, perhaps, the medium — to communicate the truths of philosophy, a view with which Epicurus and Philodemus would have disagreed (see above pages 9-12, and 261-263).650

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648 Above page 310.


650 Lucretius stresses the importance of his role as a poet for spreading Epicurus’ message. He thought that power of poetry can confer eternal life on Epicurus’ pronouncements (Gale 2001: 171). In lines 934 and 935 musaeo contingens cuncta lepore / id quoque enim non ab nulla ratione videtur Lucretius is stressing, in my view, that “there is much point”. Line 925 sounds prosaic because Lucretius is implying that we should rethink our notion of poetry. Cabisius (1979: 242) makes a convincing case for thinking that in DRN Lucretius’ and Epicurus’ missions are presented as parallel, although they regard different fields (philosophy and poetry respectively), pointing in particular to DRN V 335-337. I think Cabisius’ reading is shown to be correct by the
Lucretius was attracted to Empedocles' "concept of himself" and "use of poetry for revelation" (Lenaghan 1967: 231-232).\textsuperscript{651} The 'divinity' of Empedocles (\ldots \textit{divini pectoris eius}) refers to the fact that Empedocles fused religion and philosophy, and in turn fused philosophy and poetry: the Muses were detached from their connection with conventional oracles in favour of philosophical poetry. Comparison with the mention of Ennius earlier on in book I,\textsuperscript{652} leaves one in no doubt that Lucretius rated Empedocles highly as a model.

It is interesting that there seems to be etymological word play in \textit{DRN} I 112-119, intended to make the shadow of Empedocles hang over Ennius. Gale (2001: 168-169) argues that \textit{perenni fronde} (\textit{DRN} I 118) and \textit{quae clara clueret} (\textit{DRN} I 119) taken together suggest the name of Empedocles, \textit{\epsilon\mu\pi\epsilon\delta\omicron\varsigma \kappa\lambda\omicron\omicron\varsigma}, referring to Empedocles' use of \textit{\epsilon\mu\pi\epsilon\delta\phi\omicron\lambda\lambda\omicron\varsigma} and \textit{\epsilon\mu\pi\epsilon\delta\delta\acute{\kappa}\rho\alpha\tau\omicron\varsigma} in DK B77. According to Gale (2001: 170) thinks that Lucretius uses etymological word play here to indicate a line of poetic succession leading from Homer, to Empedocles to Ennius and Lucretius himself.\textsuperscript{653} This fact that he picks up the \textit{arta claustra} which Epicurus smashes in \textit{DRN} I 170-71 with \textit{artis nodis} of \textit{DRN} I 931-932.

\textsuperscript{651} Lenaghan wonders at the omission of Empedocles' other idea, the philosopher as a healer, since Lucretius considers healer and religious intermediary closely related. But an introduction of the healing aspect in introducing Empedocles would have reduced the impact of the medical simile in \textit{DRN} I 936-942.

\textsuperscript{652} \textit{DRN} I 117-126, with the praise in lines 117-119, coming in the context of exposing Ennius' inconsistency.

\textsuperscript{653} According to Gale the implication of the pun on Carus is that Empedocles is a Lucretian poet. Gale (2001: 172) seems inclined to believe that Lucretius inherited etymological word play from the
should perhaps be accepted, although it seems worth pointing out that Lucretius’
presentation implies that Empedocles had surpassed by far Ennius and Homer, who are
clearly presented as creating and propagating false belief. This seems tendentious since
Empedocles held exactly the theory of reincarnation which Ennius gets criticised for
holding. That Lucretius was being implicitly critical of Empedocles in this passage
cannot be ruled out.

The tone Lucretius uses in reference to epic poets, is different from the one he
uses when referring to philosophical poetry such as Empedocles’.654 Lucretius follows
in the tradition of Parmenides655 and Empedocles’ appropriation of myth and poetical
language for philosophy. Lucretius’ rejection of conventional religious ideas goes further
than theirs, by denying that the gods are involved with the world at all.

Given the extent to which Empedocles had pointed the way for Lucretius, it is
not surprising that the structure and style of lines 716-741 indicates high praise. Lines
716-741 are one of the points where Lucretius’ poem comes closest, in content and
style, to encomium. Similar encomiastic passages are reserved for Epicurus, see
especially the prologue to DRN V.

The encomium of Empedocles is expressed in a structure that resembles that of

Alexandrians. But is it perhaps more likely that it derives from atomist poetics, and Epicurean views on
language?


655 Craca (2000: 20) thinks Parmenides is represented in Lucretius by the light-truth motif (above note
532), and by DRN VI 46 and the lines lost in the lacuna following it (the image of the chariot).

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the Pindaric priamel. Empedocles is favourably compared with the marvels of Sicily (Charybdis and Aetna, which seem to be the reference of the allusion in 726-727), the richness of Sicily, and the strength of its men in defending it. That Lucretius should dedicate four lines to the description of Sicily is not surprising: Sicily would have suggested itself as a topic by being Empedocles’ birthplace and home. But the emphasis on Sicily may be intended to evoke a positive response from the Roman reader, because customarily associated with production of grain for the capital. It was only during the empire that Africa and Egypt replaced Sicily as Italy’s major supplier of corn. The terminology in line 728 suggests that Lucretius was thinking of Sicily in such terms.

The use of alliteration in the description of Sicily produces a genuine impression of grandeur, which supports the encomiastic tone of the passage. The rich alliterations in 726 (magna modis multis mirandd) and 728 (multa munita virum vi) are perhaps intended to reproduce the wealth of Sicily.

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656 Sedley (1998: 11) refers to this section as a “paean of praise”. Giancotti (1959: 79) comments on the encomiastic τόπος of comparing thinkers with place of origin (Empedocles and Epicurus in VI).

657 It may be relevant that Empedocles is said to have broken up “an otherwise unknown organisation called the Thousand” (KRS: 282).

658 Cabisius (1979: 247) suggests, perhaps rightly, that Sicily (and Empedocles) are presented as “spiritual and geographical bridge” between Greece and Lucretius, pointing out how close Sicily is to Italy in the description of lines 720-721.

659 Cicero Verrines II. 2. 5: Itaque ille M. Cato Sapiens cellam penariam rei publicae nostrae, nutricem plebis romanae Siciliam nominabat nutrix plebis Romanae.

660 Contrast the use in the introduction of Heraclitus (above page 274).
4.4.3 Aetna

Lucretius' elaborate description of Aetna takes up three and half lines (722 latter half - 725). That Lucretius had a liking for describing the eruptions of Aetna is shown by DRN II 593 and DRN VI 669. He may even have known of the direct experiences of those who witnessed such an event. As West (1969: 7) points out an eruption of Aetna had destroyed Catana in 122 B.C., and Lucretius' faucibus eruptos iterum vis ut vomat ignis / ad caelumque ferat flammal fulgura rursum are "a precise and vivid description" of the rapid horizontal flashes of lightning, and electrical scintillations in borders of clouds, which accompany eruptions. Lines 720-721 and 726 are a remarkable example of Lucretius' use of onomatopoeic alliteration. Line 721 reproduces the rumbling-sound of the volcano before the eruption: minantur / murmura flammul mursum. . . Line 726 imitates the blazing of the flames with the insistence on the letter f: ferat flammal fulgura. In line 723 metaphorically presents the murmura of Aetna as "gathering up their anger" (colligere iras), so that the strength (of fire) once again vomits the flames which

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662 Compare the occurrences of 'theme and variation' mentioned in notes 487 and 527.

663 Compare the onomatopoeic alliteration flammal flore fulserunt in line 900, where the effect is emphasised even further by the repetition of the letters fl.
are burst forward from its jaws. Aetna is presented in terms similar to an angry creature/monster. It seems significant that there is no reference to any divine aspect of Aetna: explained in same terms as a mortal creature, again philosophy mixed in with the descriptive passage.

The elaborate, and impressive, description of Aetna seems pointed: Lucretius foreshadows lines 680-702 of DRN VI, where he explains what the marvel of Aetna really is. Once again there seems to be intertextuality here between two books of Lucretius' poem. The procedure is comparable to the explanation of the real identity of Venus known from the prologue in the final section of book IV. The fact that Aetna is juxtaposed to Charybdis might have suggested a reference to Hephaistos and his works with fire, therefore Lucretius comes back to the topic in book VI and dispels any implication of divine origin.

Sedley's (1998: 14, note 61) tentative suggestion that the imminent explosion of Aetna is a hint at the rebirth of Empedoclean poetry through Lucretius is possible, but there is nothing in the text to link Lucretius' poem with the eruption of Aetna. I am not sure what to make of Edwards' suggestion (1989: 109) that Lucretius is referring to the story of Empedocles' fatal leap into Aetna. It is certainly possible that Lucretius knew

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664 This seems the sense of Bailey's text. The construction is strained, so much so that Brieger's eructans for eruptos seems attractive (it would make ignis a genitive dependent on vis). What is more Lambinus' vomat for MSS omniat is not certain; Bignone suggests ciet. Neither is entirely convincing palaeographically, although sense might have played a part in the corruption.

665 It might be that Lucretius added the reference to Aetna specifically to what in his source was the explanation of volcanoes in general.
of this report, but once again it is hard to subscribe to this theory when there is no reference or hint to Empedocles' death in the text.

4.4.4 Praise of Empedocles' theories?

The priamel comparing Empedocles to other wonders of Sicily produces a *crescendo* which leads to the emphatic praise at the end of the introductory passage, in lines 729-733. Empedocles is introduced one again, after the attention had shifted away from him, since the mention by name in 716 is by now distant. In lines 729-733 Empedocles is seen to be a divine marvel, because his *carmina* cry aloud, or are sung, and express

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666 Wright (1995: 16) argues was that this report was an invention by Heraclides Ponticus (fourth century B.C.). Lapini (2003: 114) also thinks is a (later) fabrication: Empedocles was taken to be a melancholic. Horace *Ars poetica* 464-466 suggests, however, that the report would have been known to Lucretius.

667 Or perhaps "and indeed"? This is an example of the use of *quin* for corroboration. It is used "especially in reaching a climax or adding a stronger assertion of proof" (Lewis and Short). Compare the *quin etiam* in 782, where the repetition may be intentional.

668 Other occurrences of the portentous *vociferari* in *DRN* seem to be deponents. It is used in II 450 (*aeraque quae claustris restantia vociferantur*) and II 1050-1051 (*... uti docui, res ipsaque per se / vociferatur, et elucet naturam profundi*). It could be that the verb is a deponent also in line 732. What seems significant is that it is used of Epicurus in III 14 (*nam simul ac ratio tua coepit vociferari / naturam rerum ...*). The verb seems to imply a wide-resounding noise.
findings (reperta) which are praeclara. On the face of it this may look like a commendation for Empedocles’ theories. But the fact that a doctrine is exceedingly famous should perhaps not be equated with its truthfulness. Indeed the implication may be that Empedocles’ reperta have become praeclara because of their poetical qualities: further acknowledgment of Empedocles as poetic model.

Praise of discoveries occurs again in line 736: quamquam multa bene ac divinitus invenientes. It is uncertain whether the invenientes refers specifically to Empedocles. Sedley (1998: 21), who holds against Furley that Lucretius’ praise regards Empedocles’ poetics, and not distinctive features of Empedocles’ philosophy, explains line 736 by suggesting that Lucretius is expressing “qualified respect” for the Presocratic physicists generally, praising the fact that they sought physical, and not theological, explanations of cosmic phenomena. Sedley’s reading is more feasible if one reads inferiores, with Bailey, as referring to all the philosophers referred to in lines 705-711, since looking for physical explanations for these phenomena could be attributed to the earlier Presocratics generally, as much as the quadruplists.

669 Contrast this with the customary association of divina with reperta in DRN V 13 and DRN VI 7 referring to Epicurus’ ‘findings’. For divini pectoris, however, compare DRN III 15 . . . divina mente coortam.

670 Lucretius may be playing on the meaning of clarus familiar from the introduction of Heraclitus here (above page 284).

671 E.g. both Epicurus (Ad Pythoclem 101) and Lucretius (DRN VI 204-212) give as possible Empedocles’ explanation of lightning that it is fire from the sun trapped in the clouds.

672 Even though not all monists were ‘pure physicists’ (e.g. Anaximenes’ air was divine), Lucretius would have thought of the monists as originators of “the tendency to seek physical explanations”.

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It is hard to rule out, however, that the praise of discoveries in 736 regards the quadruple pluralists, and in particular Empedocles. Indeed if the Pythia in 739 stands for Heraclitus it seems natural to take the polar comparison with Heraclitus’ style as referring primarily to Empedocles. Since the subject of *invenientes* in 736, *dedere* in 737 and *facere* in 740 is the same it seems logical to read *invenientes* as referring primarily to Empedocles. It seems limiting to assume that the reference here is solely to Empedocles’ clarity, his use of poetry for revelation, and his attitude towards conventional religion; it seems more likely that we have praise here of some of Empedocles’ theory.

Sedley (1998: 142-143) suggests that Lucretius’ mixture of praise and criticism...
of Empedocles derives from Epicurus, because of two parallels from ΠΦ.675 Sedley re-edits Arrighetti text [34] [30], lines 7-15 (1973: 352-353), from ΠΦ XXV:

.. οὶ δ' αἰτιολογησαντες ἢς ἀρχὴς ἱκανῶς
πολὺ διενεχαντες ἀλλὰ καὶ τῶν

10 ὅστερον πολλαπλασιω[CLUD]σ[CLUD]σ[CLUD]ον[CLUD]ν,
ἐλαθ[CLUD]ον
ἐαυτοὺς, καὶ περ ἐν πολλοῖς, με-γαλα κουφίσαντες ἐ[CLUD]ς τὸ τῇ[CLUD]ν ἀ-
νάγκην καὶ ταυτόμοις[CLUD]ον πάν-

τα α[CLUD]τα α[CLUD]σθαι . . . .

Sedley also refers to Arrigetti text [26] [44], lines 17-26 (1973: 250), from ΠΦ XI:

. . . . . [CLUD]ς ἀν [καὶ ἀ-

πὸ το[CLUD]ς ὥς ὁρθῶς ἐπ[CLUD]ν ἔχω-
χωσιν, [CLUD]ς[CLUD]ν δεὶ βελ-
teίους τούτων εἶναι

νομίζειν

675 Would Lucretius take the 'liberty' of praising Empedocles' (philosophical) discoveries if Epicurus himself had not?

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It may be that the mixture of praise and criticism of Empedocles derives from Epicurus, or a later Epicurean source. Furley (1970) argues that Empedocles was a precursor of Epicurean atomism. Empedocles and the atomists certainly shared the interpretation of coming-to-be as rearrangement of things which do not change (Pascal 1904: 11).676

It is perhaps conceivable that the reperta of line 736 are Empedocles’ theories about zoogony, and that Lucretius (rather than Epicurus) decided to praise Empedocles on this point. Campbell (2003: 1) suggests that Lucretius borrowed from Empedocles in his zoogony, although he grants that Lucretius’ ‘main’ source was probably Epicurus’ ΠΦ (books XI and XII). Campbell (2003: 2) acknowledges that the mention of

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676 Epicureans were certainly critical of many aspects of Empedocles’ thought. Plutarch Adversus Coloten 28 (1123B) shows that some of Empedocles’ theories were the object of Epicurean derision... ταύτα μέντοι καὶ πολλὰ τούτων ἐτέρα τραγικότερα τοῖς Ἐμπεδοκλέους, such as the τεράσματα, were mocked by the Epicureans. Edwards (1989: 106) refers to Hermarchus’ 22 books against Empedocles (above note 96), and to Adversus Coloten 1111F-1113E for the Epicurean school’s critical attitude towards Empedocles. Cicero De natura deorum I. 93 reinforces the impression that Empedocles was criticised by the Epicureans: non modo Epicurus et Metrodorus et Hermarchus contra Pythagoram, Platonem Empedoclemque dixerunt...
Empedoclean and Democritean theories in Plato’s *Timaeus* complicates the issue, but
seems convinced that the intertextuality between Lucretius’ zoogony and Empedocles
reflects the fact that Lucretius considered Empedocles a model for his anti-teleological
system.\(^{677}\) According to Campbell (2003: 102) it is unlikely that Epicurus would have
incorporated the Empedoclean phrasing of *DRN V* line 839 (taking up DK B61 lines 3-4
and Aëtius V. 19. 5),\(^{678}\) line 842 (taking up DK B60), line 845, line 847 (taking up DK
B71), and lines 864-866, where the terminology, especially the use of compound
adjectives, recalls Empedocles. He considers 837-841 almost a paraphrase of DK B57.
I am not convinced that there is conclusive evidence that Lucretius followed
Empedocles, rather than Epicurus, as a source for content in his zoogony, although there
is a strong case for Lucretius once again deliberately echoing Empedocles.

*DRN I 567, DRN V 443-448, and DRN V 449-494* lead Giussani (1898: 77) to
think that Epicurus considered the four elements as intermediary between atoms and
compounds, believing that he thought they existed right from the start.\(^ {679}\) Bailey (1947:

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\(^{677}\) Campbell (2003: 101) notes how Plutarch *Adversus Coloten* 28. 1123B points to the closeness
of Empedoclean and Epicurean theories, when he uses ‘man-faced ox-creatures’ to criticise the positivist theory
of sense perception of the Epicurean Colotes.

\(^{678}\) That *DRN V* 839 ff. (and 502 ff.) derive from Empedocles had already been suggested by Giussani
(1898: 97).

\(^{679}\) Giussani grants that the concept should not be taken too rigorously, since in *DRN V* 492-494
Lucretius implies that stones are formed right from the start. But, although rocks are referred to, it is not clear
that they are different from earth. Lucretius is here discussing the physical shape of the surface of the earth
rather than materials.

336
729) further refers to *DRN* V 235-239, and seems to accept (1947: 740) that in Epicurean atomism the four elements are "existences intermediate between the atoms and compound things". But there is no evidence for Epicurus emphasising the role of the four Empedoclean elements in particular.

The references to the four elements in *DRN* V are the sort of thing Lucretius may well have added for poetic colour. Even if Lucretius imported these references from Epicurus it is conceivable that the emphasis on the four elements in the passages from book V derives from Theophrastus. Sedley (1998: 174) argues that it is from Theophrastus that Lucretius got the order earth-water-air-fire, which describes the cosmic *strata* outwards from the earth to the heavens (this order is used elsewhere in *DRN* only at V 449-459 and 495-498). I am not convinced Lucretius would have counted the four element as a philosophical discovery the Epicureans accepted. He may perhaps have thought that Empedocles was right in seeing that the four elements were important, but he certainly thought that Empedocles was wrong in regarding them as elements, since he says that the great fall of such thinkers was precisely *principiis in rerum* (*DRN* I 740).

### 4.4.5 The four elements

MacKay (1955: 210) detected a hidden portrayal of Empedocles’ four elements in lines

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717-725, the description of Sicily, which, he remarks, receives more notable praise than Lucretius' Italy, and Epicurus' Athens. Mackay thinks Lucretius' intention, in introducing the oblique reference, was to praise Empedocles because he derived his theory "ex conspectu rerum nauralium, id est de sensuum testimo". Sedley (1998: 14-15), similarly to Mackay, thinks that Lucretius is establishing a connection between Empedocles' thought and the landscape in which he lived. Reading a reference to Empedocles' air in line 725 (ad caelum) is certainly possible. Although in DRN I 9, in an Empedoclean context, caelum is connected with fire (assuming, with Furley, that we

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681 Snyder (1972: 217-218) independently finds a pictorial catalogue of Empedocles' four elements in these lines, pointing out that the pairing of "heavier" and lighter elements in Lucretius (water in 718-720, earth in 721, fire in 724, and air in 725) corresponds to the pairing of the elements in DK B115, the opposite of that in Empedocles' cosmogony. But certainly a case can be made for the main mention of earth in the passage being that in line 717 (which according to Snider "introduces the subject of the description, the insula"). This would make the order earth - water - fire - air.

682 Lucretius certainly makes this point in line 762, and reinforced by poetic devices. The considerable length of line 762 of conveys the impression of the elements flying apart from one another in a storm. And Lucretius' use of connectives results in ventosque sounding like an unexpected addition to fulmina ... atque imbris. What appears to be a fourth-foot caesura, after imbris, turns out not to mark a break in the sense. The syntax of lines 770-771 also calls for comment. The fact that ignis and terrae depend on the same noun, corpus, gives at first the impression of the elements coming together, but then pleonasm in auras aeris and roremque liquoris, conveys the idea that such combination of the elements is impossible. For the four elements fighting one another compare DRN V 380-395.

have one element per line in 6-9), line 446 of *DRN V* provides a parallel\(^684\) for Lucretius using *(altum) caelum* to refer to the element air (compare also *nubila caeli* in *DRN I 6*).\(^685\) And Empedocles’ uses οὐράνος to refer to his element air in DK B22 line 2 (Sedley 1998: 14-15).

There are two objections to detecting the theory of the four elements in these lines. First earth appears at two points in the list, in both line 717 and line 721 (note 682). Second, air receives comparatively very little space, the emphasis being on water and fire. While water receives four and a half lines (718-722),\(^686\) and fire similarly three and a half lines (722-725). *Caelum* is presented only as the direction where Aetna ‘vomits’ its flames in line 725, lessening the impact of the mention.\(^687\)

\(^{684}\) Snyder (1972: 218, note 1) refers to *DRN VI* 50 and 61 to support the interpretation of *caelum* as the element air, rather than heavenly bodies. But in these lines *caelum* seems to refer to the seat of heavenly bodies.

\(^{685}\) It also seem worth noting that, as Professor Sharples points out to me, αἰθήρ usually means not simply air, but the clear upper air/sky as opposed to *aer* which is damp and misty lower air: this makes a link with *caelum* all the more easy. And Empedocles used αἰθήρ to refer to the element air, i.e. in DK B71 εἰ δὲ τί σοι περὶ τῶν διπόξυλων ἐπετο πῖστις, / πῶς δδατος γαῖης τη καὶ αἰθέρος ἤλιου τε/ κυνάμενων εἰδή τε γενοιατο χρούτα τε θνητών / τόσο', δαν νῦν γεγάσαι συμμαρμοσθέντι'. 'Αφροδίτη... (see also DK B98).

\(^{686}\) The coastline of the straits of Messina, together with Aetna, is the most striking feature of Sicily, and therefore the most apt comparison for Empedocles’ achievement.

\(^{687}\) Lucretius was partial to images from coastlines. West (1969: 11) refers to *DRN IV* 220-221 frigus ut a fluvii, calor ab sole, aestus ab undis, aequoris exesor litora circum as an example of the “nicety of detail” of Lucretius’ imagery. And there is the ubiquitous *luminis oras* (e.g. *DRN I* 22, 170, 179).
It cannot be excluded, however, that Lucretius was here intentionally referring to the four elements, rather than giving an exact catalogue of them, and setting up the theory so that he could knock it down later in the passage.\footnote{\textsuperscript{688}} In 740-741 Empedocles and other limited pluralists crash to the ground in the manner of Homeric heroes. Lucretius once again uses epic language ironically (see above pages 270 and 272). The fall of Empedocles and other pluralists is especially striking after the praise which Lucretius has bestowed on Empedocles thus far in the passage.

\textbf{4.5 Lucretius’ presentation of Anaxagoras’ theory}

The introduction of Anaxagoras stands apart from those of Heraclitus and Empedocles because Anaxagoras’ personality and mode of expression do not receive explicit attention,\footnote{\textsuperscript{689}} while his theory immediately takes centre stage. Brown (1983:150) thinks that Lucretius’ introduction of Anaxagoras is abrupt and unadorned because (a) Lucretius did not feel a personal relationship, whether positive or negative, towards Anaxagoras, or perhaps because (b) Lucretius had no reason to praise or blame Anaxagoras.

\footnote{\textsuperscript{688}} It may be pointed that in Lucretius’ description of Sicily the impression is that of violent phenomena in which the elements appear to clash against one another. This may well be intended to anticipate the remarkable simile of lines 760-761, where Lucretius points out that Empedocles’ four elements would fly apart just as wind, thunder and rain fly apart when there is a storm (a simile which is, as often with Lucretius, integral part of the argument).

\footnote{\textsuperscript{689}} See below pages 345-347 on how Lucretius imitates Anaxagoras’ style to parody it, just as he imitates the style of Heraclitus and Empedocles.
Anaxagoras' philosophical ideas, or (c) there were no exploits in popular tradition for Lucretius to refer to.

That Lucretius (b) had no reason to praise or blame Anaxagoras is doubtful: the fact that there were agreements hardly means that there would be no reason to criticise,690 and in fact Lucretius' presentation in the remainder of the confutation is heavily critical, in its use of parody and satire.691 There is some truth in (c): Anaxagoras was less of a 'personality' than Heraclitus or Empedocles. The dramatic event in Anaxagoras' life, his being charged with impiety in Athens, is an aspect which Lucretius would rather not emphasise, since the role of opposing superstition (religio) in the poem was reserved for Epicurus,692 and, through Epicurus, Lucretius himself. Expressing qualified praise of this aspect specifically would weaken the impact of the presentation of Epicurus as the hero defeating religio. Reasons (a) and (c) together explain why Lucretius' abstains from commenting on Anaxagoras' persona.

The lack of emphasis on Anaxagoras' persona should be connected with Lucretius' use of latet in reference to Anaxagoras in 875: he constantly tries to hide. Pinning Anaxagoras down proves impossible. There may well be implicit criticism here of the fact that there are issues which are unclear in Anaxagoras' theory, in particular the

690 Brown himself (1983: 150) points out that there was an "ambivalent relationship" between Epicureans and Anaxagoras, referring to Diogenes Laertius X. 12.

691 Below pages 345-351.

692 Above page 272.
nature of his *primordia*.\(^{693}\)

Lucretius’ *scrutemur* literally means “search amongst rags or trash”. The verb implies a search beneath the surface, into the details: it is a “live poetic word” since according to Anaxagoras every substance is made up of particles of itself beneath the surface (West 1969: 125). The metaphor is well suited for examining thoroughly a theory on the level of elements.\(^{694}\) More importantly the use of *scrutemur* fits perfectly with the idea of Anaxagoras trying to hide of line 875.\(^{695}\)

Anaxagoras’ attempt to run away from scrutiny is unsuccessful. Although he himself hides, his portions cannot themselves hide, and when they are revealed, in the closing lines of the *critique*, the *primordia* die in a burst with immoderate laughter at realising their own state of mortality (below 4.6).\(^{696}\)

\(^{693}\) While atomism constructs matter from definite and simple building-blocks (at least in theory), Anaxagoras does not. There does not seem to be direct evidence that Anaxagoras’ theory was found as difficult in antiquity as it is today. There was certainly a difficulty in fitting his views into the standard classification: cf. Aristotle, *Metaphysics* A 8 989a30ff. and the parallels in Theophrastus FHS&G 228 AB. But that may say more about the classification than about Anaxagoras.

\(^{694}\) Brown (1983: 153) rightly adds that the verb produces a slightly grotesque effect when flanked by the Greek name and technical term (see below note 698 on the odd rhythm of the line).

\(^{695}\) The idea of Anaxagoras trying to hide from scrutiny may be reflected in Lucretius’ positioning of words: the *hic* in line 836 and *putat* in 839 are hidden in the list of examples.

\(^{696}\) Indeed the fact that the *critique* ended with the *primordia* dying (*pereunt*) suggests that Anaxagoras is the climax of an argument that eliminates all non-atomist principles.
4.5.1 Lucretius' transliteration *homoeomeria*

Lucretius' use of *homoeomeria (rerum)* to refer to Anaxagoras' theory in lines 830 and 834 has attracted scholarly attention, since it is the only attested use of the noun, in the singular, in such a sense. We have seen above (page 55) how it is perhaps conceivable that Lucretius himself introduced such a use of the noun, but it is more likely that Lucretius inherited the usage from his Greek source. Even if the term was used in exactly the same sense in Lucretius' source, the implications of the use of a transliterated Greek term at this point are interesting.

Lucretius only transliterates two philosophical terms in *DRN*. Both are extraneous to Epicureanism: *homoeomeria* here, and *harmonia* in *DRN* III 98-135 (Sedley 1998: 48). Although Lucretius' use of *homoeomeria* was certainly at least in part dictated by the difficulty of finding a replacement, he had further reason for transliterating the Greek term, namely implying that Anaxagoras' theory is not worth

697 The complaint about the poverty of Latin language at 831-832 (... *nec nostra dicere lingua / concedit*), echoes a theme mentioned elsewhere in the poem. The second hemistich appears again at *DRN* III 260; compare also *propter egestatem linguae rerum novitatem* in *DRN* I 139. It is not inconceivable that by explicitly remarking on the power of the Latin language Lucretius is intentionally recalling the earlier passage. The tone of lines 831-832 is different from that of line 129. In lines 831-832 Lucretius points out that the idea is easy to explain, the problem is finding a single Latin term for it. The implication is that it is not worth the effort to translate technical words except Epicurus'.

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translating or importing. Throughout the poem Lucretius uses Greek words in critical contexts; this carries a suggestion that the two Greek philosophical terms which Lucretius transliterates, *homoeomeria* and *harmonia*, should also be rejected. This is in stark contrast to the great care Lucretius takes to translate into Latin all of Epicurus’ technical jargon, which is worth importing. Sedley (1998: 59) is exactly right in remarking that while the Greek world is alien (transliteration), Epicurus’ philosophy transcends cultural barriers (fully translated). Lucretius’ transliteration of *homoeomeria* is ironic in exactly the same way as *harmonia* in *DRN* III 117 and 131. The use of *res* to refer to Anaxagoras’ theory may also be significant in this context. Lucretius is looking at what is the *res* behind the fancy name *homoeomeria*. Trying to find what is hidden seems to be the over-riding theme of the critique of Anaxagoras.

It seems worth pointing out that using the transliterated term provides Lucretius with the opportunity of engaging in a detailed description of the theory for which there is no name. Since there is no Latin equivalent for Anaxagoras’ theory Lucretius feels justified to allot as many as 9 lines (834–842) to a description of it.

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698 West (1969: 125) points to the unusual rhythm of line 830 produced by two Greek words. Sedley (1998: 48) suggests that line 830 is intentionally ungainly, to convey the point that just like the horrible word is not at home in the Latin language, so the underlying concept is unwelcome (as the rest of the passage shows).

699 When one looks at Lucretius’ transliteration of Greek non-philosophical terms the implication is the same. Lucretius transliterates Greek non-philosophical terms extensively in passages where he is being critical. Transliterated Greek in Lucretius indicates what is foreign, and to be rejected or despised.

4.5.2 Parody of Anaxagoras

The most striking feature of the explanation of Anaxagoras' theory is the amount of repetition. The repetitions certainly presented Lucretius with a chance to play on words, such as the *chiasmus* in 835-837 with *ossa* preceding *ossibus*, but *viscus* following *visceribus*. Yet the extent to which the passage is repetitive suggests that Brown (1983: 154-155) is right in thinking that the lines are obtrusive to the point of affectation, comparing the stiff and monotonous style of 835-842 to the flexible and varied style of lines 812-816,\(^{701}\) where Lucretius describes the Epicurean *primordia*.\(^{702}\) Brown concludes that Lucretius reproduced and parodied the style of Anaxagoras, or the style he found in his doxographical source.\(^{703}\)

It seems questionable whether it would be reasonable for Lucretius to be parodying the style which he found in a doxographical source. A doxographical text is

\(^{701}\) There is an issue about the text here. Bollack (1978: 249) in favour of retaining MSS *multimodis* in 814 (for Lambinus' *multa modis*), and QG' *multa* for O's *mixta* in 815. But this does not seem to seriously affect the argument.

\(^{702}\) Lines 835-837 are an example of how the syntax of the Latin appears to reflect the concept expressed in Lucretius' verses: "the line about bone has the same sound and appearance as the line about flesh", because bone is made up of tiny pieces of bone and flesh is made up of tiny pieces of flesh, while in lines 814-816 the syntax reflects the fact that "many things have similar atoms in different combinations and the Latin has three similar elements in different relationships" (West 1969: 118-119).

perhaps unlikely to have reproduced Anaxagoras' language. The idea that Lucretius is parodying Anaxagoras' style tallies much better with Lucretius having first hand acquaintance with Anaxagoras' work. Whether Anaxagoras' text would have been available to Lucretius is uncertain (above note 83). Even if it was not, it is conceivable that Lucretius could read a work by another author which quoted Anaxagoras extensively. However Lucretius may have acquired familiarity with Anaxagoras' language, it seems likely that by introducing the long list of examples, he was reproducing and caricaturing Anaxagoras' long-winded, stiff and monotonous style, and thus silently condemning it.

4.6 The mortality of Anaxagoras' primordia

Lucretius presents the first two arguments against Anaxagoras very succinctly, in lines 843-846. He had used the same arguments before, in the confutation of Heraclitus and Empedocles, and he therefore cross-refers, in lines 845 and 846, to his earlier remarks to that effect. In the case of the third argument against Anaxagoras Lucretius proceeds

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KRS (page 356) suggest that brevity was a quality of Anaxagoras' book (the surviving fragments could make up much more than an eighth of the whole); the book only cost 1 drachma (which suggests it could be copied in considerably less than one day). Whatever the length of Anaxagoras' book, the remaining fragments are rather repetitive and monotonous. Schofield (1980: 3) comments on Anaxagoras' dogmatism and ambiguity (perhaps what Lucretius had in mind in using latet?). But this does not necessarily entail that Anaxagoras did not use repetition extensively. Lucretius could indeed be making the point that although Anaxagoras goes on at length in a tediously repetitive way, it still is not clear what he is getting at.
very differently. Although he had already used the same argument before, in lines 753-758, Lucretius decides to expand on the point, and dedicates 12 lines to it (847-858). Lucretius expanded on this argument because he saw how well it applied to Anaxagoras' elements. Since Anaxagoras considered fundamental, or at least could be interpreted as considering fundamental, many, or even all, different kinds of substance, his *primordia* displayed clear signs of their mortality. Lucretius' extended metaphor in lines 847-852, a metaphor which repeatedly portrays Anaxagoras' *primordia* as mortal creatures, has to be read in this context.

Lucretius says clearly that there is a problem with Anaxagoras' *primordia* being ultimately *res*. And he makes the point more vivid by using images of mortal creatures suffering and dying. The extended metaphor starts with *imbecilla* of 847 and with the verbs *laborant, pereunt* in lines 849-850, it carries on in the question of 850-852, and will come up again in the powerful climax of the confutation of Anaxagoras, and of the whole *critique*, in lines 918-920. It is significant that the two passages are linked by the

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705 I find it hard to explain why Lucretius omitted the example of flesh in these lines, since flesh as an example would have fitted the argument well, being so obviously perishable.

706 Empedocles' principles resemble citizens in DK B17 line 27-29 (Trépanier 2003: 419).

707 Lines 848-849.

708 This seems to have the further point of being juxtaposed to language of creation (*gigni* and *creari* in line 837, *concrescere* in line 840) in the outline of Anaxagoras' theory.

709 These two verbs could refer to any other living being, but the image of 919 makes it likely that Lucretius was alluding to human beings here too.

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ring composition in *pereunt* of (858 and 918), which signals the death of every conceivable principle different from Epicurus’ atoms. Since Anaxagoras made every substance fundamental, the material elements proposed by all other thinkers perish together with his own.

The language of lines 850-852 creates a mood of pain and suffering by ‘personifying’ death, or, more exactly, presenting death as a predator capable of a strong bite (*oppressu valido*), from whose jaws there is no escape. The bite of wild animals on the dead corpse in *DRN* III 888 seems worth comparing. West (1969: 55) mentions Lucretius’ interest in animals. It is interesting to compare *DRN* V 1326-1327: *et validis socios caedebant dentibus apri / tela infracta suo tingentes sanguine saevi*.

And lines 990-991 of book V provide a further parallel: *unus enim tum quisque magis deprensus eorum / pabula viva feris praebebat, dentibus haustus*. Lucretius was partial to images from biting (whether by humans or by wild animals). In *DRN* III 694 Lucretius, to prove the point that sensation, and with it the soul, extends throughout the whole body, points out that there is sensation in teeth: *morbus ut indicat et gelidai stringor aquai / et lapis oppressus subsit si frugibus asper*.

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710 The ring composition also signals the end of the *critique*; and perhaps the use of *perire* is significant in this respect. It is worth noting that the *critique* seems to lack a formal close just as it lacks a formal introduction (compare the ending of books of *DRN*).

711 Assuming this was how the text ran. Line 1328 *in se fracta suo tingentes sanguine tela* looks like a variant for 1327.

712 The use in *DRN* IV 1080, in Lucretius’ description of the lovers, is perhaps also worth comparing: *et dentes inlidunt saepe labellis*. 

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The way in which Anaxagoras’ *primordia* perish in the conclusion of lines 917-920 is remarkable: all that Anaxagoras’ theory raises is the immoderate laughter, a *grotesque* effect. The implication here is, as mentioned above,\(^{713}\) that Anaxagoras’ particles laugh at their own state of utter mortality. The importance of causing laughter in rhetorical debate is apparent in Cicero *De oratore* II. 262: being laughed at seems to equate to blatant defeat in the argument.\(^{714}\)

A similar personification of the *primordia* occurs in *DRN* II 973-990, with lines 919-920 repeated in *DRN* II 976-977, with the slight variation *spargunt rorantibus* in line 977, for *salsis umectent* of 920. Giussani (1896: 94-95 and 1898: 118) argues that the lines were originally written in book II, where they fit perfectly with the argument that *primordia* do not have senses.\(^{715}\) If one reads the use of the image in lines 917-920 in the context of the earlier metaphor in lines 847-856 where Anaxagoras’ *primordia* are

\(^{713}\) Page 342.

\(^{714}\) Lenaghan (1967: 233) writes: “Anaxagoras is dismissed with laughter (915-20), an effective rhetorical device, if not logically compelling.” This does not do justice to the ending, in my view.

\(^{715}\) Giussani (1898: 116) argues that originally the conclusion of the *critique* was 893-896. When Lucretius allegedly added lines 897-914 (see below page 371), he would have thought that line 914 did not provide a fitting conclusion, and added lines 915-920 to provide one. I am not sure that 907-914 would provide less of a conclusion than 915-920 do. Giussani (1898: 117) thinks that 915-920 are directed against both *homoeomeria* and ἐν πάντι παντὸς μοῖρα. The mistake is thinking that secondary qualities persist on the level of the elements (lines 916-917), which would make the *primordia* perishable. It is unclear why, on Giussani’s theory, Lucretius would have omitted this important point, which ruled out both aspects of Anaxagoras’ thought, in the ‘first draft’, especially if it appeared in his source.
presented as suffering and dying, the use of the image in line 917-920 is understandable. The implication of the image is that the *primordia* are laughing, as mortal creatures do, and moreover laughing at their own mortality. The use of the image in book II refers back to the *critique*, where the lines first appear, with the implication that the presence of feeling would involve the death of the (supposed) *primordia*, just as Anaxagoras’ *primordia* could not escape the jaws of death. It is especially interesting in this context that in book two Lucretius carries the personification of the *primordia* to the point of presenting them as discussing *the problem of the elements* (*DRN* II 978-979).\footnote{16}

Lucretius personifies the *primordia* again in *DRN* I 1021-1022: *nam certe neque consilio primordia rerum / ordine se suo quaeque sagaci mente locarunt.* He is making the point that particles *do not* behave in this way.\footnote{17} This seems comparable to the use in the *critique*. Lucretius repeatedly uses, with critical intent, the image of *primordia* being at the mercy of passions. In lines 792-794 of *DRN* IV it is the *simulacra* that are personified: *scilicet arte madent simulacra ac docta vagantur / nocturno facere ut possint in tempore ludos.* Lucretius is presenting the *simulacra* as actors in these lines.\footnote{18} These parallels support the inference that the personification of Anaxagoras’ principles is Lucretius’ own.

\footnote{16} It is not unlikely that, as Smith (1992a: 170, note a) suggests, Lucretius had Anaxagoras in mind when writing the passage in book II. Smith (1992a: 164-165, note a) similarly argues that the section 865-930 is aimed at Anaxagoras.

\footnote{17} It is perhaps worth comparing the presentation here to that of the Epicurean *minimae partes* as efficient soldiers in *DRN* I 606 *agnine condenso.*

\footnote{18} Lucretius’ use of *scilicet* here seems ironical, if not sarcastic (below page 381 and note 800).
Lucretius' depiction of the mortality of Anaxagoras' *primordia* in lines 847-856, and of their breaking into tears because of bursts of laughter in line 918-920 is part of a rhetorical technique which recalls satire. Brown (1983: 156-157) rightly draws attention to how line 848 ironically casts doubt on whether Anaxagoras' principles deserve to be called *primordia*, line 850 has the picturesque verb *refrenat*, and lines 851-853 formulate a series of belittling rhetorical questions. The use of *fingit* in line 847 can also be mentioned in this context. Lucretius considerably elaborated lines 847-858, poetically and rhetorically, through his ironical use of imagery.\textsuperscript{719}

4.7 Lucretius' strategy in 859-874

The style of lines 859-874, the fourth argument against Anaxagoras, is “an exaggerated and distorted version” of lines 835-838 (the description of Anaxagoras’ *homoeomeria*), but while in 835-838 the repetition stressed the homogeneous composition of things, in the latter the same repeated words stress the opposite contention, namely that things must be made up of elements of a different nature (Brown 1983:157). By using the same style he had used in the description of Anaxagoras’ theory Lucretius implies that he is criticising Anaxagoras on his own terms.

\textsuperscript{719} One may argue that lines 854-856 — Lucretius’ answer to ‘the rhetorical questions’, with resulting impression of omniscience of the poet — and especially lines 857-858 sound rather prosaic, and somehow spoil the effect of the imagery. But it may be that Lucretius felt he should introduce the cross-reference to make the point stick in the reader’s mind.
Lines 859-875 present a series of dilemmas, although only of the first dilemma are both horns present in the text as we have it. First (1) either (1a) *venae sanguen ossa* [nervi] are made up of things of a different nature, i.e. of *cibus* \(^{720}\) (lines 859-860 and lacuna), or (1b) *cibus* has in it *venae* etc. (lines 861-866); second (2b) if the trees etc. do grow from *terra*, *terra* has to be made up of things alien in kind, i.e. of trees etc. (lines 867-869); and (3b) if *flamma fumus cinis* are hidden in *lignum*, *lignum* is made up of things alien in kind (lines 870-873). The use of a series of dilemmas conveys the impression of Anaxagoras being shut in a corner despite his attempt to flee from scrutiny. The impression resulting from the series of dilemmas is that of omniscience of the narrator, as typical in the didactic genre. The understanding of Lucretius' rhetoric here is hampered by the fact that the text suffered in transmission, but the passage seems intended for rhetorical effect.

Brown further points out (1983: 157) that, if line 874 is transposed to precede 873, \(^{721}\) the text provides a fitting climax to the strategy: two lines where the "parallel structure and dense repetition" recall the description of *homoeomeria*, especially lines 835-836. He draws attention to the fact that the resulting sense of 'ring composition' is only formal. I would suggest that there is a further point of irony in Lucretius' choice of words. After the affected repetitiveness of the introduction, and of 859-875 the series of dilemmas repeats often the expression *ex alienigenis*. The repetition stresses genesis

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\(^{720}\) It looks as though it is more likely that Lucretius' formulation would have been *ex alienigenis* or the like, rather than *ex cibo*, in view of the remainder of the paragraph.

\(^{721}\) See above note 457.
from elements different in nature, rebuffing the emphasis in Anaxagoras’ long-winded repetitions, which stressed that the nature of elements and compounds is identical. This is part of Lucretius’ strategy to demolish Anaxagoras’ theory.

Lucretius’ employment of parody in the fourth argument may be a rhetorical technique. We have seen how Anaxagoras himself had addressed the problem of nutrition, and it is perhaps conceivable that Lucretius is presenting as an independent objection what in the source would have been attributed to Anaxagoras. If the presentation in these terms is down to Lucretius, it should be connected with the portrayal of Anaxagoras as trying to hide (latet) from scrutiny, rather than disclosing his theory. The presentation here seems comparable to the one in lines 875-876 where ‘in everything a portion of everything’ is presented as though Lucretius thought of it first. The implication seems to be that although Anaxagoras tries to hide, Lucretius (Epicurus’ spokesman) had thought in advance of his hiding place, so that Anaxagoras cannot escape scrutiny (scrutemur in line 830).

When one adds these remarks about lines 847-874 to the fact that lines 875-920 are, as critics have often pointed out, rhetorically very effective, one can see why Brown concludes that the philosophical arguments against Anaxagoras are on the whole

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722 As Anaxagoras himself apparently did, but the reader is not to find this out until later on in 875-896.

723 Above pages 82-83.

724 One cannot be certain that the ‘unfair’ slant was not already in Lucretius’ source.

725 According to Brown (1983: 152) the word play and imagery in lines 875 to 920 “disguise the unfairness of Lucretius’ criticism and present Anaxagoras’ in a ridiculous light”.

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livelier and more flamboyant than the corresponding arguments against Heraclitus and Empedocles. This is to some extent true although it seems to disregard the considerable elaboration reserved for lines 782-829 in the confutation of Empedocles and the limited pluralists.

The reason for the elaboration of lines 782-829, and of the arguments against Anaxagoras, is that Lucretius was intentionally building up to a deliberate climax in lines 921-950, which are the "centre piece" of the first book. Lucretius is building a crescendo effect, which leads from the rhetorical question in lines 798-802, to the most emphatic statement of the correctness of the Epicurean doctrine in lines 823-829, after Anaxagoras' primordia die in laughter in 917-920. Lucretius is thus building a platform stylistically for lines 921-950 where he will comment on his own work and its merits, just as he had built up a platform to its themes, by setting up Heraclitus and Empedocles comparison between his own message, and his way of expressing it.

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726 Above page 308.

727 There seems to be a structural pattern throughout the last three arguments against Empedocles. Lines 782-802 are neatly divided into three sections: 7 lines reporting the opposing theory, 5 lines refuting the opposing theory and 9 lines putting forward the Epicurean alternative. Similarly the dilemma in lines 763-781 ended by stressing that the Epicurean explanation is correct (lines 778-781). The positive Epicurean material is granted more space and more emphasis as the confutation proceeds, reaching its climax in the final argument (lines 814-829).

728 The repetition of these lines at the start of DRNIV 1-25 indicates that Lucretius was proud of them, and that he wanted them impressed in the hearer/reader's mind. On the significance of the repetition, see Appendix (a) pages 388-389.
confutation of Empedocles hamper the crescendo effect. A possible answer is that it is for deliberate effect that Lucretius sandwiched repetitive and ‘prosaic’ sections parodying Anaxagoras between lines 803-829 and 875-920, where Lucretius’ tone, especially in his descriptions of the Epicurean alternative, is rather grand. The superiority of the Epicurean explanation is corroborated by the superior language and style. This appears more clearly by being set against Anaxagoras’ inconclusive prolixity.729

4.8 The analogy of letters and atoms.

Even considering Lucertius’ partiality for ‘atomologising’ and his fondness of repetition, it is striking that he uses twice, in the space of 90 lines, the analogy from letters of the alphabet to represent the atoms. The use of this analogy in an atomistic context may have been prompted by Epicurus’ or a later Epicurean’s use of it, which could have occurred either in the specific source text which Lucretius used for the critique, or in a different text. If the latter is the case, Lucretius imported the analogy to the critique.730

729 In the case of Heraclitus and Empedocles, as we have seen, Lucretius imitated the Presocratics in his introductory sections, and only occasionally took up the characterisation in the following arguments (whether by imitation of their language or by other means).

730 That Epicurus, or later Epicureans, used such an analogy may be shown by De Pythiae oraculis 399E: ἐπεὶ τι καλὺὲι λέγειν ἔτερον, ὡς οὐκ ἔγραψε τὰς Κυρίας ὑμῖν Ἠπίκουρος, ὡς Ἡθοθε, δόξας, ἀλλ’ ἀπὸ τύχης καὶ αὐτομάτως οὕτως πρὸς ἀλληλα τῶν γραμμάτων συνεμπεσόντων ἀπετελέσθη τὸ βιβλίον; According to Snyder (1980: 37) Plutarch probably imported the criticism from a source which ridiculed the Epicurean position, by taking over Democritus’ analogy and distorting it as evidence

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The letters of the alphabet can produce an immense, though not infinite, variety of combinations, although the letters are limited as far as the number of shapes is concerned. This fits Epicurus’ system perfectly since his atoms were limited in number of shapes, while those of the earlier atomists, Democritus and Leucippus, were not (Armstrong 1995: 225). Yet there is no direct evidence for Epicurus having himself used the illustration from the letters of the alphabet.

It has been doubted that Epicurus took over Plato’s use of the term στοιχείον.731 It is used to refer to atoms only in Ad Pythoclem 86.732 Elsewhere in Epicurus it means simply “basic principles” or refers to Empedocles’ four elements.733 Even in Ad Pythoclem 86 the meaning is no more than “basic principles are indivisible”. There is no evidence that Epicurus used the word στοιχείον, by itself, to refer to atoms. This does not rule out that Epicurus himself used the analogy of letters and words to describe the additions and subtractions, and movements of the atoms in compounds, but the possibility that, if Epicurus was his source for the critique, Lucretius introduced the analogy himself, whether in just one case or in both, is a possibility worth

source which ridiculed the Epicurean position, by taking over Democritus’ analogy and distorting it as evidence against atomism.

731 The first attested uses of στοιχείον to indicate metaphorically the minima of matter are in Plato Theaetetus 201E, Cratylus 424D and Cratylus 424E-425A. That Epicurus felt the need to justify his borrowings from earlier thinkers immediately after using στοιχείον in ΠΦ XIV (above note 249) may suggest that he was not comfortable with using it.


733 Epicurus uses the term in ΠΦ XIV (above pages 136 and 138), but not to refer to atoms.
considering.

A first point to note is that Lucretius may be innovating by using *elementum* to refer to Epicurean atoms. The word *elementum* is not attested before Lucretius and Cicero (*De oratore* I. 163). Cicero uses *elementa* metaphorically to refer to "rules" or "elements", although he seems aware of the basic meaning: "letters of the alphabet" (Snyder 1980: 33-34). That Lucretius was the first Roman author to import the use of *elementum* to refer to Epicurean atoms is conceivable. How likely depends on the nature of Epicurean works earlier than Lucretius.

4.8.1 Lines 823-829

Lucretius' first use of the analogy in the *critique*, in lines 823-829, is part of the argument that the presence of *primordia* of many *res*, mixed in various ways, in *res* explains how different things are nourished by different things (lines 809-829). The

734 In Cicero *De natura deorum* II. 93 the analogy from the letters of the alphabet is used to rebuke the notion of chance collision of atoms creating the world (Snyder 1980: 35-36): the speaker comments on the absurdity of thinking that the letters of the alphabet may combine by chance to produce the whole of the *Annales* of Ennius.

735 Above page 13 and pages 16-18.

736 Although there is no "as" in the text, *tantum - plura* in 826-827 clearly implies a comparison, so that it seems correct to speak in term of analogy.

737 And note in this context the atomistic use of language in 813 (*certis ab rebus, certis aliae atque aliae res*) with elisions emphasising the effect, picked up in 816 (*ideo variis variæ res rebus aluntur*).
fact that what does the nourishing is so different from what is nourished must be explained by realising how much impact *cum quibus, quali positura,* and *motus* have in determining the nature of compounds.\(^{738}\) Lucretius' use of the analogy here is much more explicitly stated than his very first use of it, in *DRN* I 196-198.\(^{739}\) Lucretius refers for the first time to the fact that examples of verbal atomism can be found in his own verses.

The point of the analogy in lines 823-829 is that just as the same 22 letters of the alphabet can make up compounds as different as the words, and lines, of Lucretius' poem, so the *primordia rerum* can produce compounds which are very different from other compounds the same *primordia* also combine to make. The analogy is accurate since it is clear from lines 826-827 that it illustrates only one aspect of the process, namely the difference *ordo* makes to the nature of the compound. On its literal and primary level the analogy plays on the fact that all the words of the poem are made up by the same 22 letters.

It is not altogether clear whether *ordo* should be read as including both *cum quibus* and *quali positura.* This depends on whether the exact reference of *positura* is *(a)* the position of the *elementa* in relation to one another i.e. exactly the same atoms (choice not being involved) can make two different words, or *(b)* the position of the *elementa* in relation to themselves.\(^{740}\) The analogy could extend to *(b)*, with Democritus'
Z and N example, but there is no trace of this in Lucretius. Indeed it would be impossible to report such an idea in hexameters. I am inclined to believe Lucretius used *positura* in sense (a), see further below, pages 363-364. If by *ordo* Lucretius is referring to both choice and position the argument by analogy is sound, and understandable before reading book II. It is a case of *multa modis communia multis*, to take up Lucretius' formulation in line 814.

The difference *ordo* can make to the nature of the compound is also tacitly illustrated in my view by the fact that *versibus* of line 822 shares 6 of its 7 *elementa* with *verbis* of 823, although “words and verses are very different *et re et sonitu sonanti*”. The implication is that *ordo* can bring about a great difference in the resulting concept, as in the resulting word. It seems surprising that neither Friedländer nor Snyder considers whether *paronomasia* is at work here, although it is used to illustrate that similar *elementa* can make up very different compounds through *ordo*.

The analogy has further implications. Just as the same set of letters of the alphabet, by mixing, can make up the whole of Lucretius’ poem (*De rerum natura*) so the *primordia rerum* can make up the whole natural world (cosmos), which is represented by Lucretius’ *asyndeton* in lines 820 and 821. Lucretius was here taking up

\[\text{Footnotes:}\]
741 Snyder (1980: 41) makes the point that *permutato ordine* does not refer to permutations of letters within a single word, but slightly different selection to get different words: such as *versus* and *verba* (line 825) and *sonitu . . . sonanti* (line 826). She seems to overlook the fact that ultimately both words and verses are made up of the same *elementa* (i.e. the 22 letters of the alphabet).

742 *Versus* is the term Lucretius conventionally uses to refer to his own poetry; *carmina* is rarer (Lenaghan 1967: 251).
the analogy which we have seen the early atomists had used (or perhaps even introduced) between poem and cosmos. Armstrong (1995: 225-226) comments on how Lucretius consciously considers the words of his verses “something like molecules made of separate atoms which are the letters of the alphabet”. According to Armstrong, Lucretius alludes directly to the impossibility of metathesis in the same terms as Philodemus.

It is important that Lucretius draws attention to the words and verses of his own poem here. The structure of the poem on nature resembles nature itself. It is even conceivable that words represent molecules, and verses represent compounds. The same letters can make up the entirety of Lucretius’ poem (cosmos), as well as the verses (compounds) and the words (molecules) just as Epicurus’ atoms make up everything in our experience, from small compounds to the whole universe. Lucretius intended his poem to be an accurate image (simulacrum) of reality.

There is a further sense in which the letters of the poem behave just like the atoms that make up the world. Schiesaro (1994: 83-85) seems right in interpreting the

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743 Armstrong (1995: 215) thinks that for Lucretius, just like Democritus the essence of poetry, rather than being oral, or aural is “to be found in the play of letters, elementa, on the page”. It looks as though this is disputable, at least as far as Lucretius is concerned. The word elementum itself is more often associated with sound in the use by grammarians (Thesaurus Linguae Latinae), and Lucretius emphasises sound in most of the occurrences of the analogy.

744 Thury (1989: 271) notes that DRN “in its representation of reality . . . functions as a simulacrum of the rerum natura in the technical sense”, i.e. it presents images (word-pictures) of the real world that impinge on the reader and are susceptible to evaluation, just as the images sent around from objects.
repetition of sounds, formulae, passages and themes in an atomistic sense, as representing material bodies "whose components constantly rearrange themselves in cyclical fashion without ever being reduced in nihilum. . . The De rerum natura renews itself as a didactic experience that the reader is programmatically enticed to repeat over and over again". Formularity reinforces the atomistic message. The repetition of words, verses and passages also resembled the atomistic process of the formation of things. There seems to be a relationship between letters, words, verses, formulae and poem which is meant to symbolise the universe, from the smallest components to the whole universe. Part of the analogy is that just as the universe is created again, so is the poem.745

4.8.2 Intertextuality

Lucretius repeats lines 823-825 verbatim as part of his fourth deployment of the analogy (DRN II 688-690), and modifies line 826 to confiteare alia ex aliis constare elementis in DRN II 691. The modification is coherent and indeed required, since Lucretius is now showing that dissimiles formae come together to make a compound. He proceeds to expand on the formulation of DRN I 823-827 in DRN II 692-699: not because there are few letters which are shared or because no two words are made from the same letters, but because in most cases they do not share all their letters.

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745 On the significance of the repetition of DRN I 926-950 at DRN IV 1-25 see below Appendix (a), pages 388-389.
The analogy refers again to the relationship between the 22 letters of the alphabet and the words of Lucretius' poem, but takes up a different aspect. In book II the point is that although there are many common elementa in many verba (and versus), one has to admit that different words (and different verses) are made up of different elementa, while in book I Lucretius' point is that, although there are many common elementa in verba (and versus), the end product is different in both physical appearance and in sound. In book I the possibility that words share all their letters is not mentioned, but it is not ruled out either. The analogy is probably also meant to illustrate that res are made up of diversae figurae, just as the letters of the alphabet have a limited number of different shapes. It is significant in this context that DRN II 692 is very similar to DRN II 336 and DRN II 694 repeats DRN II 337: Lucretius intentionally repeats from the passage where the figurae and formae are first introduced (DRN II 333-335). This is the point in which the analogy is especially appropriate to Epicurean atomism (above page 356).

Let us now turn to the fifth and final use of the analogy, in DRN II 1013-1022 where once again Lucretius repeats extensively from the critique. DRN II 1013 repeats line 824 with passim changed to refert, and DRN II 1015-1016 repeat lines 820-821 with

746 Snyder 1980: 43.

747 The association of the physical aspect to the sound of the letters seems to come appropriately in line 826 where it stresses that words are different from (other) words, and verses from (other) verses, and anticipates the reference to sound in distincta voce notemus of line 914.

the change of *constituunt* to *significant* in 1015. Lucretius has again in mind how the letters of the alphabet can make up all the words of his poem, so the atoms make up the whole world.

Lucretius sets out with a reference to *cum quibus* and *quali ordine* in line 1014, he goes on to point out that most of the letters are similar in most cases, and concludes by saying that *res* (presumably the “things” of his poem, which fits in very well with Thury’s reading, above note 744) are different because of *positura*. Since the emphasis this time falls on the difference *positura* makes to the meaning of the poem, Lucretius changes *constituunt* to *significant*. The emphasis of the analogy falls temporarily on the poem, before going back to the physical world of *res* with lines 1019-1022. The fact that Lucretius gives more prominence to the phenomena of the world of the poem may well be meant to balance the fact that Lucretius has gradually shifted the meaning of *elementum* from the field of letters to the field of physical elements. With his final use of the analogy he redresses the balance, and firmly establishes that there is no difference

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749 Note also that *DRN* II 1008-1009 = *DRN* I 818-819. On the connection between the *critique* and the second part of *DRN* II see below pages 369-370.

750 Armstrong (1995: 227) draws attention to the change and notes that *DRN* II 1013-1021 is the occurrence of the analogy that most insists on the possibility of metathesis: this passage is parallel with Philodemus’ view that the rearrangement of words always modifies the thought. Although Lucretius seems to be concerned with arrangement of letters rather than words in our passage (Armstrong 1995: 225), it may be that he applied the concept to words.

751 Snyder 1980: 46. All the occurrences in *DRN* I refer to letters, 2 out of six occurrences in *DRN* II to letters, all but one of the occurrences in the remaining books refer to physical elements.
between the field of the poem and that of the physical world.

The analogy from letters of the poem is used here to show that *positura* can make such a great difference that the *corpora prima* do not need everlasting secondary qualities to create the world (lines 1007-1012). Lucretius is saying here that the same (or almost exactly the same) *primordia* can make all things through *positura*. It is unclear whether this is the same point as in the third occurrence of the analogy. It may be that the third occurrence of the analogy refers to both the choice (*cum quibus*) and position in relation to one another (*positura*) of the *elementa*, while the final occurrence refers only to the position in relation to one another (cf. *DRN* II 693; see above pages 357-359). Such interpretations however may imply that Lucretius was more consistent in his use of terms than he actually was.

### 4.8.3 Lines 906-914

Lucretius' second use of the analogy in the *critique*, the third in the poem, comes in lines 912-914 in the context of his criticism of Anaxagoras' ἐν πᾶντι παντὸς μοίρα, where it is most effective, since Anaxagoras' theory would involve that every word contained every letter. Lucretius here explicitly provides an example of *paronomasia*,152 in line 914.753 This has been foreshadowed in lines 891-892, where the two words *ignis* and

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152 Snyder 1980: 41.

753 Lucretius seems to have had the significant similarity *ignis lignum* in mind also in *DRN* II 386-387 (Friedländer 1941: 17), and *DRN* II 881-882 (Ferguson 1987: 100).
lignis share four elementa, again in line 901, where ignis and lignis appear in the same line, which, perhaps significantly, stresses that fire itself is not in wood.\textsuperscript{754}

The analogy is intended to explain the physical process of how wood can produce fire. This is the third time Lucretius mentions the phenomenon of wood producing fire in the critique. He has already done so in lines 871-873, where Lucretius uses flamma in place of ignis,\textsuperscript{755} and in lines 891-892. The emphasis of the passage in lines 896-914 is on the fact that there is no fire in wood.

In the case of lines 912-914 Lucretius decides to describe specifically the outbursts of fire in the forest, a phenomenon which captured his imagination. The phenomenon is portrayed in a more elaborate form in DRN V 1096-1110, and again in DRN V 1243-1249, although in book V the rubbing together of branches is not listed among the causes, perhaps for variety.

That wood can produce fire is explained by the fact that the corresponding words are inter se paulo mutatis elementis. This is reflected in the fact that ignis and ligna

\textsuperscript{754} The metaphor flammat fulserunt flore coorto of line 900, highlighted by (perhaps onomatopoeic) alliteration, deserves attention in this context. West (1969: 23) points out how the metaphor, which is imported from an alternative reading to Iliad IX 212 (from Plutarch's citation of it in Moralia 934 B and schol. Aeschylus PV 7) works together with the argument. Lucretius, who is arguing against the view that every substance contains particles of any other substance and that therefore wood contains fire, is aware of the implications of the image. There is certainly no flamma in flos, although, one may add, the two words share two of their letters as they probably do on the atomic level of the primordia rerum). And there is the further point that flowers grow from plants.

\textsuperscript{755} Ferguson 1987: 100.
share the letters *i*, *g* and *n*.\textsuperscript{756} Take the *elementa* *l* and *a* out of wood, add *s* and *i*, which is a basic component of it anyway, and you get fire. It is worth stressing that the elision in the line brings it about that the two words and *atque* become a single word, and the *a* of *ligna* would have effectively disappeared. The change would have sounded even smaller.

That the permutation is not exact but involves a small change fitted the Epicurean theory well, in fact it makes the analogy very accurate. Lucretius is set on showing the importance of (1) choice (2) positioning (3) movements of the atoms and that the same atoms make up fire and wood *paulo inter se mutata*. It looks as though Lucretius with this expression refers to all three points. The analogy would illustrate (1) with the introduction of new letters and (2) with the moving around of the letter *i*.

Given the widespread use of the analogy in philosophical texts (above page 258) it is certainly possible that Lucretius' source text used the analogy from letters of the alphabet as part of the criticism of both limited pluralism and Anaxagoras. However, given Lucretius' fascination with letters, and words, it is certainly possible that he introduced at least one occurrence, if not both.\textsuperscript{757} It seems likely, at any rate, that the specific example of *verbis* / *versibus*, with reference to the hexameters of his own poem is Lucretius' own contribution, and the same applies to the word play in *ignis lignum*.

\textsuperscript{756} One should probably read, with Bailey, *Ignis* as the accusative plural in line 912 (rather than Martin's and Smith's *ignes*).

\textsuperscript{757} Above page 259. On whether Lucretius himself introduced lines 803-829 and 897-914 (or 897-920), below pages 371-372.
There is no clue that the significant word play on *ignis lignum* had been elaborated by earlier Latin authors.\(^{758}\)

4.9 Repetitions

Throughout his poem Lucretius often repeats lines or portions of lines, adopting a device referred to as formularity. Recent scholarly opinion is inclined, rightly in my view, to explain the repetitions in *DRN* as a deliberate narrative strategy on Lucretius' part, and not as due to lack of revision, or to interpolation. The genuineness of repeated passages is usually signaled by minor variation in the phrasing of repeated passages.

Repetition was central to didactic poetry.\(^{759}\) Hesiod, who represented the canon of the genre, employed repetition extensively. There are indications that Empedocles did the same, although it is impossible to determine the exact amount of repetition, because we only have portions of his production.\(^{760}\) Repetition was probably one of the traits which made Aristotle describe Empedocles' style as Homeric.\(^{761}\) By using formularity

\(^{758}\) Clay (1995: 13) refers to a parallel for *ignis lignum* in Pliny *Natural History* "1. 37. 42". This is perhaps a mistake. Pliny writes in XVI. 208... *tertitur ergo lignum ignemque concipit adtritu*... , but he could easily have taken this over from Lucretius.

\(^{759}\) Schiesaro 1994: 98.

\(^{760}\) Gale (1994: 63) draws attention to Empedocles DK B25 and DK B35 lines 1 and 2, where Empedocles offers a kind of apology for the use of repetition.

\(^{761}\) Bollack's (1965: 322-323) comment on Empedocles' use of repetition suggest that Empedocles and Lucretius used repetition in a similar way. He points out that "les longs fragments (comme 31 = 37)
extensively Lucretius was following the tradition of earlier didactic poetry, the tradition in which he wrote.

Lucretius clearly saw how repetitions had a didactic value by nature, and that it was a useful tool for the poet to show that two passages are connected, to create intertextuality. We have already seen conclusive examples of this, e.g. the repetition of *DRN* I at 738-739 at *DRN* V 111-112, and in his repetition of the letters analogy.

Repetition is a device by which the poet can produce a 'good' didactic plot. Schiesaro (1994: 99) shows that repetition of important tenets is a deliberate strategy on Lucretius' part. He draws attention to how Lucretius repeats the methodological principle in *DRN* I 146-148 in exactly the same relative position, at the beginning of the first principal argument of the book (*DRN* II 59-61; *DRN* III 91-93 and *DRN* VI 39-41).

A similar strategy is at play with a pair of lines that Lucretius repeats in the *critique*, and elsewhere. By repeating lines 670-671 at 792-793 Lucretius reinforces a fundamental tenet, which rules out any kind of theory which involves transformation of the *primordia*. Given the importance of this point it is hardly surprising that the lines montrent que ces répétitions se suivaient souvent de très près, rituelles et obsédantes", thus they represent invariable laws, and the cycle of life. On Empedocles' use of repetition see also Dionigi 1988: 106-107.


763 Clay (1983: 192-193) comments on Lucretius' repetition of lines 670-671 which he calls the 'axiom of change'. He argues that the inclusion of this principle as part of the confutation of Heraclitus shows Lucretius mastered the fundamental theoretical principles (στοιχειωματα). It is surprising that this tenet does not appear in Epicurus' letters, although the impossibility of change is mentioned in a somewhat different context in *Ad Herodotum* 39.
are repeated again in the poem, in DRN II 753-754 and DRN III lines 519-520.

Repeating the lines within the critique also creates the impression that both Heraclitus and Empedocles go astray on the same point of allowing transformation. The repetition of line 673 at 797 is probably intended to reinforce the impression that Heraclitus and Empedocles get it wrong on the same, elementary, point.

Line 635, the opening line of the critique, is repeated at 705, to produce ring-composition. Lucretius reinforces the structural signpost link by repeating line 637, with modifications, at 711. The repetition serves two purposes: it signals the end of the series of arguments against monism, and links the confutation of Heraclitus to that of other monists who are introduced in lines 707-710. The repetition of line 635 at 705 is an aid to Lucretius' didactic strategy. It induces the impression that all other monists commit the same mistakes as Heraclitus.

There is a considerable number of reminiscences of the critique in the final part of book II, many of which we have already noted: (a) 685 = DRN II 1021 (and nowhere else); (b) 789-793 (of which 792-793 = 670-671) = DRN II 750-754; (c) 673 (= 797) = DRN II 756 and 864 (and nowhere else); (d) 814-815 = DRN II 695-696; (e) 817-819 (of which 819 = 909) = DRN II 760-762 (of which 761 = DRN II 1008 and nowhere else); (f) 823-825 = DRN II 688-690 (of which 688 = DRN II 1021); (g) 919-920 = II 976-977. Moreover (h) DRN I 790-797 = DRN II 751-756, the passage in DRN II

764 DRN II 229 avius a vera longe ratione recedit should also perhaps be compared to line 637. Note the image from journeying.

765 And both 826 and DRN II 691 start with confiteare.
being shorter and, arguably, in a more specialised context. The amount of repetition is such that it cannot be explained simply as a consequence of the fact that both the *critique* and the latter part of book II refer to the motions and combinations of atoms. Lucretius is deliberately making a series of references back to the *critique*. The use of repetition serves a structural function. It betrays Lucretius’ intention of presenting the first two books of his poem as mirroring each other (Sedley 1998: 192).

4.10 The parallelism between lines 803-829 and 897-920

Lucretius intentionally made the two sets of lines 803-829 and 897-920 resemble one another, to convey an impression of parallelism. These two sets of lines are comparable in style, length, tone, and structural function. Both display the intervention of an imaginary objector, who introduces an example from sense-experience. In both passages the objector ‘interrupts’ the poet with *at*, and Lucretius picks up again with *scilicet*. And in both passages Lucretius’ reply includes the analogy from how letters of the alphabet combine to make up words, to show the superiority of the Epicurean theory.

766 It should also be noted that, as Schiesaro (1994: 100) notes, the number of repeated passages in *DRN* is higher in the first half of the poem than in the second, because the process of repetition and assimilation is especially important at the beginning. Lucretius certainly saw the didactic value of repetitions.

767 Giussani 1898: 116-117.

768 Giussani 1896: 94.

769 One significant difference is that in 897-920 we get two arguments (lines 915-920 being a new point), while lines 803-829 are the concluding argument against limited pluralism.
What is more *magni refert* of line 817 is picked up by *permagni referre* of 908 (with cross-reference in 907), lines 819-820 are repeated *verbatim* at 909-910, and line 918 is a remodeling of 818. Lucretius went out of his way to make the reader notice that the two passages are connected. The confutation of Empedocles ends with a description of the Epicurean *primordia* in all their strength (especially line 827 *tantum elementa queunt*), while the confutation of Anaxagoras ends with Anaxagoras’ own *primordia* perishing by laughing so immoderately that they are reduced to tears.

The similarity of the two sections led Giussani to work out an elaborate composition-theory, according to which Lucretius added 803-829 and 897-920 only after having written a substantial part of *DRNU*. Bailey (1947: 739 and 755) considers this probable, and Dalzell (1987: 21) thinks “Giussani may be right”. I have dealt with Giussani’s (1896: 92-95) arguments at various points of the discussion. I have not yet considered his (1896: 94) argument that lines 782-802 are aimed at both those who believed in transformation of the four elements into things, and those who believed in transformation of the four elements into one another: i.e. at the ‘transformationist’ principle generally.

According to Giussani lines 782-802 look like the conclusion of the argument

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770 The similarity between lines 814-815 and lines 895-896, which immediately precede the intervention of the imaginary opponent defending Anaxagoras, is perhaps relevant in this context. Lucretius may be signaling in 895-896 the start of the parallelism.

771 Brown (1983: 152, note 42) refers to Perelli’s (1969) view that Lucretius abandons the plane of logic for the extravagant and grotesque (coming close to surrealism).

772 Above note 422 and note 715.
against the ‘quadruplists’, while the objection in lines 803-829 is not connected with
lines 782-802. This would show that 803-829 are a later addition. The argument in 803-
829 is that the four elements cannot explain nutrition of vegetation and humans as well
as atomism does. Giussani seems to assume that the argument excludes the possibility
of transformation of the four elements, but this is perhaps not necessary. Lucretius (or
rather his source) similarly concludes the confutation of Heraclitus with an argument that
applies to all forms of fire-monism (lines 701-704). 773

It is unclear whether Giussani envisages a wholesale revision of DRN I, of the
whole poem, 774 or just an afterthought. Unless one thinks in terms of (a) or (b) one faces
the problem of explaining how additions of 27 lines and 23 lines could have been made
to Lucretius’ original copy, unless they were made on the back of the papyrus roll. 775
Theories such as Giussani’s are ultimately very hard to disprove, but there is no
compelling evidence that creating a formulaic effect of parallelism by having the two
concluding passages mirror one another is the result of a later stage of composition.
There is no reason to doubt that this was his strategy all along, rather than an
afterthought. Lucretius on this occasion complements a direct cross-reference in line 907
with the mirroring structure and style for the two passages. The similarity of the two
arguments could perhaps be taken as a clue that Lucretius was composing independently
of his source in these two sections.

773 On this argument, above note 146.
774 Below Appendix (a), pages 389-391.
775 Below Appendix (a), note 811.
Munro (1886b: 102) explains the similarity between the two sets of lines by saying that Lucretius thought that the same objections applied to Anaxagoras’ primordia and Empedocles’ four elements, since both attributed to the elements “those secondary qualities which only belong to things in being”. This is certainly true, but it is not only the rejection of the idea that elements have secondary qualities that links the two passages. Lucretius is emphasising the fact that in both cases even the phenomena which appear to support opposing theories are in fact better explained by Epicurus’ teachings. These phenomena can be explained only thanks to the *positura* and *motus* of the atoms (above pages 236-238). This explains the cross-reference and the repetition of the lines. The similarity signals that again and again the Epicurean theory is infallible in providing a better explanation of the observed facts.

4.11 The critique as ‘dialogue’

An imaginary objector intervenes in direct speech in lines 803-808 and 897-900, to provide examples which prima facie oppose the poet’s view. The two sets of lines are

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776 Introducing an example contrary to the Epicurean theory, to then explain it, is not untypical of Lucretius’ rhetoric (see above page 245). The fact that an imaginary objector introduces the counter-examples makes the restatements of the Epicurean theory more emphatic. One should note how lines 803-829 are carefully structured so that they reinforce the demonstration of the existence of atoms. There are three sections: (a) the first 6 lines granted to the ‘imaginary objector’ (803-808), then (b) 5 lines where Lucretius recognises that the observed facts are as the objector says and introduces a further example (809-813), and finally (c) 16 lines of positive Epicurean doctrine in which Lucretius explains how atomism accounts perfectly for these facts.
remarkable in that they are the first time in the poem that the voice of someone other
than Lucretius is heard, a sudden shift in focalisation. The use of such devices is unusual
in Lucretius, except in the final part of book III. The intervention by an imaginary
objector in DRN III 356 is certainly comparable. And exactly the same device as in the
critique is used in DRN VI 673 “at nimis est ingens incendi turbidus ardor”. What is
more Lucretius picks up with scilicet in line 674, just as he does in the critique in lines
809 and 901, after the two interventions.

Scholars have doubted that the interventions in lines 803-808 and 897-900 are
by the internal addressee, that is, Memmius, suggesting instead that the objector should
be identified with a disciple of the two Presocratics. I can see no objection to thinking
that the imaginary objector is in fact the internal addressee of the poem.

According to Bailey (1947: 738) lines 803-808 derive from Empedocles. This,
if true, may be taken to suggest that the imaginary objector should be identified with
Empedocles himself: Bailey refers to (a) Aristotle De anima B. 4. 415b28, (b) Plutarch
(814-829), introduced by a very emphatic nimirum.

777 Lines 894-899 report in direct speech the words of others (aiunt of 898), and lines 901 and 904-
908 report, again in direct speech, additions which those people should make to their statement. Remarks by
hominio are again reported in direct speech in line 914-915. And in lines 933-949 and 955-962 Lucretius
reports in direct speech nature’s reply. In lines 1025-1052 words are put by Lucretius in the mouth of the
imaginary interlocutor, so that he may repeat them to himself.

778 In this case, as in DRN I 803, the objection follows a question by Lucretius.

Aristotle's point in passage (a) is that ψυχή is needed as a principle to explain the growth of living things, and that Empedocles' explanation of the growth of plants by the opposed movements of earth and fire is inadequate. Lines 803-808, on the other hand, describe the contribution of all four elements to growth, and make no reference to the movements of earth and fire. In passage (b) the emphasis seems again to be on the importance of water for the process of growth, rather than on the contribution of all four the elements. Passage (c) is not a close parallel either: there is nothing in 803-808 as counter-intuitive as saying that plants are nourished by fire/heat from the earth or that fruits are made from fire. The evidence that Lucretius was translating Empedocles in lines 803-808 is very slim, although there may be stylistic imitation as often elsewhere (above note 636).

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780 τιρεῖται δὲ (ἡ τροφή) τοῖς μὲν φυτοῖς ἀνασθῆται εἰκ τού περιέχοντος, ὡς φησιν Ἕμπεδοκλῆς, ὁδρευομένοις τὸ πρόσφορον. 781 Ἕμπεδοκλῆς πρῶτα τὰ δένδρα τῶν ζῴων εἰκ γῆς ἀναφύναι φησι... αὐξεῖται δὲ ὑπὸ τοῦ ἐν τῇ γῇ θερμοῦ διαμόρφωσι ὡστε γῆς εἶναι μέρη... τοὺς δὲ καρποὺς περιττόματα εἶναι τοῦ ἐν τοῖς φυτοῖς ὀδατός καὶ πυρὸς. 782 I owe this point to Professor Sharples. 783 The intervention in 803-808 presents elaborate poetic expressions in auras aeris (with enjambement of the second term), tempestas indulget tempore fausto, tabe nimborum, and the asyndeton fruges arbusta animantes. The poetic embellishment is either due to a deliberate decision on Lucretius' part to reproduce some actual lines of Empedocles' poem, or to Lucretius' intention of signaling that poetic language is no substitute for argument, or to both reasons. It is noteworthy that Lucretius' response displays fewer 'poetic' features, and is marked by the colloquial expressions such as the dismissive scilicet, dubio.
As for the intervention in lines 897-900, Calder's (1984: 485-486) claim that the rubbing together of branches to produce fire comes from the text of Anaxagoras is unwarranted by the evidence. A description of this phenomenon is found in Thucydides II. 77. 4, a gloss which made its way into the transmitted text. Calder suggests that the gloss was introduced by Antyllos, a physician of the second century A.D., who was influenced by Anaxagoras (Marcellinus, *Vita* 22. 6-8 Luschnat), and commented on Thucydides. However, since there is no evidence whatsoever for the 'rubbing of branches' being in Anaxagoras, except this passage from *DRN* there is no reason to assume that Lucretius is reproducing Anaxagoras' words in the intervention.

It seems conceivable that Lucretius elaborated the objections *ex novo*. One cannot rule out, however, that he derived the actual examples he puts in the mouth of the objector from his Greek source. Even if he did find the points raised by the imaginary objector in his source, Lucretius considerably reworked them through his description of the contribution of the four elements to growth (lines 803-808), and through his description of the violent storms which cause the top branches of trees to rub against one

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*procul, nimirum quia,* picked up by *ideo,* and *quin etiam* reinforce the impression Lucretius is winning the argument by presenting the naked truth.

784 As Calder remarks *χειροποιητόν* makes the addition redundant, the sentiment is suspect and the sense runs smoothly if the passage is excised. According to Hornblower (1991: 360) it "may well be a gloss".

785 It seems conceivable that the gloss was earlier and Lucretius got the image through a text of Thucydides, whom we know Lucretius read (above page 23).
another so forcefully that flames are sparked (lines 898-900).\textsuperscript{786}

There seems to be no reason to doubt that the interventions are put by Lucretius in the mouth of the internal addressee, Memmius.\textsuperscript{787} Memmius has been addressed very often in the poem thus far: in the prologue in lines 50-55, 80-83, 102-106 and 140-145. And it seems reasonable to assume that the addresses in the second person in the following lines, such as 265-270, 327, 331-333, 347, 357, 370-372, 450-451 and 499-502, also refer to Memmius.\textsuperscript{788} He is certainly the addressee of lines 398-417 where he is named in the vocative in line 411.

The internal addressee has figured little in the first part of the critique. The second person singular is only used in line 673, followed by the imperative \textit{adde} in line 712. But the use of the second person becomes much more frequent as the critique proceeds: \textit{conicere ut possis ex hoc, quae cernere non quis} in line 751, \textit{habebis} in 758, \textit{sin ita forte putas} in 770 and \textit{tibi} in 773, \textit{constituas} in 799, \textit{vides} in 824, \textit{transfer} in 870, \textit{iamne vides igitur . . . ?} in 907, \textit{ putas} in 916 and \textit{fingas} in 917.

\textsuperscript{786} Above pages 355-356.

\textsuperscript{787} On Lucretius' addresses to Memmius see Keen 1985: 1.

\textsuperscript{788} Some addresses serve a clear structural function: for example those in lines 265-270, lines 331-333, lines 370-372 and lines 483-502, which introduce a new section or topic. Use of the second person signals the start of the 'second prologue' (\textit{DRN I} 921) and the resumption of the main account from (951 ff.). It is also worth noting that the criticism of geocentric cosmology is introduced by an address to Memmius in which he is actually named in the vocative (\textit{DRN I} 1052): this may support the inference that the 'imaginary objector' in the critique is Memmius (i.e. the internal addressee). Uses in \textit{DRN II} confirm that addresses to Memmius serve a structural function: e.g. those in \textit{DRN II} 60-66, 142-143 and 181-187.
The direct questions should be read as presented to Memmius. One such question may well have opened the series of arguments in critique. A case can be made for punctuating lines 645-646 as a direct question to the internal addressee: “how could things which are so varied exist if they are created by pure fire alone”? Everything in lines 647-689 unsuccessfully tries to answer this initial question.

Direct questions of a more or less rhetorical nature occur in lines 699-700 (two questions), 701-703, 763-766, 797-802, 852-853 (four questions) and 907-912. The interventions by the imaginary objector in 803-808 and in 897-900, in conjunction with the widespread use of the second person and of direct questions, make the latter part of the critique closer to dialogue format.

The impression of dialogue is reinforced by the fact that both interventions occur

789 This would be contrary to the procedure of Diogenes of Oenoanda who addresses Heraclitus in the second person in his counter-argument (fragment 6 (III) lines 9-11; Smith 1992b: 157).

790 Lachmann, Diels, Giussani and Martin punctuate as a direct question. The imperfect subjunctive of the ‘mixed’ conditional clause in these lines is not easier to explain with cur depending on requiro than with cur introducing a direct question, and requiro being parenthetic. Vidale (2000: 101) seems right that through the use of the first person singular requiro “il poeta si mette personalmente in campo”.

791 The second possibility in the question provides Lucretius with the opportunity of introducing the idea of a monistic theory based on another element, and to harshly rebuke such a possibility, as well as fire-monism, in line 704. This introduces very neatly the mention of other monists in 707-709.

792 The tone is remarkably similar to that of the question in 701-703, signaling that the choice of elements is arbitrary.

793 Editors mark the question mark after line 912. But a case can certainly be made for punctuating after 914. Certainly the comparison of quo pacto seems to be logically and syntactically part of the question.
after a restating of Epicurean theory, and, in the case of line 803, the objector is seemingly objecting that the answer to the forceful question put by Lucretius in 798-802 should be "no" because the senses indicate otherwise. But the poet is prompt in silencing the internal addressee: *scilicet*. . . And in the case of 897-900 the objection seems suggested to the objector by Lucretius himself in lines 891-892. Here too Lucretius promptly sets him right in 901-903.

These lines should be read in the context of the distinction Clay and Mitsis draw between the internal addressee of the poem, and the actual reader of the poem. The internal addressee is clearly detached from the reader himself in our passages, since the reader is actually reading Memmius' own words. The interventions in the *critique* are one of the points of the poem where Lucretius' therapeutic method with the internal addressee is most clear to see. In our lines a second voice speaks. There is a dialogue between teacher and pupil of which the reader of the poem is a spectator.

According to Mitsis (1993: 112 and 116-118) throughout *DRN* there is no cooperative interchange between the poet and the internal addressee: Lucretius'

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794 Giussani 1898: 117.

795 Mitsis (1993 :122-123) endorses Clay's (1983: 212) insight that the didactic addressee — "mock reader" in Clay's terminology — mediates between the poet and his intended audience and helps control the reader's individual responses to the message of the poem. The readers of *DRN* witness the process of instruction itself. It is surprising that Mitsis does not lay importance on the direct interventions in the *critique*. Presumably he thinks that they are not by the internal addressee.
condescending tone does not fit a conversation between equals. Mitsis (1993: 120-126) argues that the authoritarian and coercive method of teaching, which reproduced Epicurus' stance was problematic for "a poet attempting to win over unconverted readers", and suggests that Memmius, and not the reader, is the target of Lucretius' abuse, even when Memmius is not named. The reader of the poem does not identify with the internal addressee (Memmius), but with the confident narrator, thinking that they are more like the doctors than the sick.

The choice of Memmius is pointed, since he was an ambitious politician, an erotic poet, accomplished in Greek but scornful of Latin literature, extravagant in his sexual behaviour and demolished Epicurus' house in Athens, where he was in exile from 52 B.C. (Smith 1992a: xlvi-xlvi). If Lucretius could persuade Memmius he could persuade anyone.

Mitsis draws attention to the passages describing children fearing the dark: \textit{DRN} II 55-58, \textit{DRN} III 87-90 and VI 35-38.

The people Memmius liked were love poets, such as Catullus and Cinna. It seems unlikely that he would have been Lucretius' patron. The use of \textit{amicitia} in \textit{DRN} I 141 may indicate that Memmius was Lucretius' patron, or at least intended patron, since \textit{amicitia} is customarily used for the relationship between patron and poet (see White 1978 and Sailer 1989). Smith (1992a: xlvi) takes \textit{amicitia} to refer to Epicurean friendship because of \textit{suavis} and \textit{voluptas}, independently reaching the same conclusion as Perelli (1969: 6-7). It seems likely that Lucretius' inspiration is the desire to make Memmius a fellow Epicurean. There is a possibility, in my view, that Lucretius is being ironic in using the term which suggested patronage. What might be seen as patronage was in fact an attempt to draw Memmius into Lucretius' circle of Epicureans.

Mitsis (1993: 123, note 19) does not endorse Farrington's claim that Lucretius is trying to convert Memmius, the historical figure. I am not sure this can be excluded. Memmius, as Keen (1985: 8) points out,
Mitsis highlights in my view an important characteristic of Lucretius' poem. His reading seems correct for many of the addresses to the reader in *DRN*. Certainly the reader does not wish to be the child in the dark. But Lucretius' strategy in the poem is not uniform. There are times when the reader does identify with the internal addressee, and where the internal addressee's own contribution is worth something. Mitsis does not discuss *DRN* V 91-109, where Lucretius' attitude to Memmius is certainly far from antagonistic and patronising. The attitude towards the pupil required by the process of instruction can change. In *DRN* I 402-409 the image used by Lucretius to describe how Memmius should conduct himself as a pupil is that of a hunting-dog in the woods (Schiesaro 2003: 59-60), an image which suggests exploring new paths. Lucretius here presupposes some personal initiative on Memmius' part (although lines 398-417 as a whole suggest Memmius may not do what is required from him).

Let us come back to the interventions in the *critique*, to consider what kind of attitude towards the internal addressee we can trace in our lines. There is no doubt that Lucretius sets the objector right. The double use of *scilicet* seems sarcastic. The objector makes no telling contribution; he only provides examples so that Lucretius can

799 This implies a more interactive relationship than Lucretius has with his teacher Epicurus in whose *vestigia* he follows (above note 45).

800 Note *scilicet id falsa totum ratione receptum* in *DRN* I 377; and see above note 718.

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show that the Epicurean theory can explain such phenomena better.\textsuperscript{801} The impression is that the (omniscient) poet has it covered all along. The objector is treated as a \textit{νηπιος}.\textsuperscript{802}

Significantly the objector's \textit{manifesta palam res indicat} in line 803 is 'rebutted' by the poet later on in the \textit{critique}, in line 893: \textit{manifesta res docet}. The interlocutor thinks the facts themselves confirm his view, but the narrator makes sure he appropriates back the facts themselves for the Epicurean theory.\textsuperscript{803} The expression \textit{manifesta res} has not appeared so far in the poem (though cf. \textit{quorum nihil fieri manifestum est} . . . in line 188). Lucretius will use similar expressions again, to show how the Epicurean theory is confirmed by the facts themselves, at e.g. \textit{DRN} III 690, \textit{DRN} IV 396, \textit{DRN} VI 139, \textit{DRN} VI 249.\textsuperscript{804}

And the fact that the 'Ennian' asyndeton \textit{fruges arbusta animantes},\textsuperscript{805} used by

\begin{itemize}
\item \textsuperscript{801} Lenaghan (1967: 234-235) notes that the objector tries in both cases to appeal to the senses in an Epicurean way but "must be set right, because he has not yet correctly understood that shifting atomic combinations account for different and changing phenomena".
\item \textsuperscript{802} By treating the internal addressee as \textit{νηπιος} Lucretius follows on in the tradition of Hesiod, Parmenides and Empedocles (Mitsis 1993: 114).
\item \textsuperscript{803} Kleve (1978: 58-59) tentatively suggests that Lucretius' use of dilemma and \textit{concessio} (for which he refers to \textit{DRN} I 803, I 897, II 541, IV 473) may be due to Carneades' influence on later Epicureans.
\item \textsuperscript{804} Ernout (1925: 157) refers to \textit{DRN} III 690; \textit{DRN} VI, 139, 249; \textit{DRN} II 565. Lenaghan (1967: 232-233, note 40) also refers to similar expressions in \textit{DRN} I 855; \textit{DRN} II 149, 246, 707, 867; \textit{DRN} III 30, 353; \textit{DRN} IV 504.
\item \textsuperscript{805} Ernout (1925: 160) refers to Ennius \textit{Annales} 543.
\end{itemize}
the interlocutor at 808 is used again at 821, by the poet, as part of his Epicurean response looks like another example of the same technique of silencing the objection by appropriating the expressions used by the objector. One should note, in this context, that the asyndeton in 821 completes the equally emphatic one at 820, giving the impression that the Epicurean theory can adequately and easily explain not only living and growing creatures, but the whole universe. Lucretius leaves his reader in no doubt that Epicurean doctrine explains phenomena more thoroughly.

Assuming that the objector is in fact Memmius, I wonder whether the actual reader of the poem thinks “look how useless Memmius is” in the case of the two interventions in the critique. The effect of Lucretius’ rhetoric at this point seems rather to be “you need guidance when interpreting the evidence of the senses”.

4.12 Conclusion

There can be no doubt that Lucretius intervened extensively on the material he found in his Greek source, when he composed the critique of earlier theories of matter. There is ample evidence that Lucretius added expression and imagery to his account not only in the introduction of the personalities of the Presocratics, but throughout the passage. In the critique there is a carefully though-out connection of imagery and philosophical points, and imagery and climax: the passage is not simply a series of unconnected arguments episodes, but displays a carefully devised and artistically ingenious plan.
Appendix (a). Two stages of composition?

Mewaldt suggested in 1908 that lines 26-44 and 45-53 of *DRN* IV are mutually exclusive, two alternative versions of the 'summary and syllabus' section to be included in the prologue to IV. One redaction (26-44) is meant to follow on from book III, while the other redaction (45-53) works only if it follows on from book II. In other words, Lucretius changed his mind on whether book IV should follow book II or book III.

Not all scholars share this view. Gaiser rejected the 'doublet theory' (or rather modified it to reduce its impact) and Gale likewise (1994b: 4). Lines 45-53, they claim, were not a single set of lines, but two separate marginalia added by Lucretius in his original copy. Lines 45-48 were intended as an addition to go before 26, while 49-53 should have replaced 29-32. Emended like this, the text is faultless. Conte (1992: 158, note 9) similarly endorses Gaiser's explanation: “hence his manuscript was probably loaded with corrections and additions, second thoughts and improvements. The first editor of *De Rerum Natura* (perhaps Cicero), intervening in this text with an excessive conservatism, in a mechanical and not always critical manner, seems to have paved the way for many of the incongruities and errors of the tradition”.

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80e Sedley 1998: 137, note 5.
Gaiser (1961: 24) accounts for the transposition of the set of lines by saying that either the editor/publisher or the copyist\footnote{At this stage in transmission, when Lucretius' original version was being copied, the 'editor' presumably. The person who was entrusted with Lucretius' original, presumably exercised close oversight, if not physically do the copying himself. He would probably have been responsible for the diffusion for further copying. This person may have been Atticus, since we know from Cicero (Ad Atticum IV. 4a, XII. 6a, XII. 40, XIII. 21a, XIII. 23) that he had enough slaves to take care of copying and diffusing texts.} inserted the two marginalia at the end of the section, after line 44.\footnote{Vielleicht darf angenommen werden, das ... bei der editorischen Redaktion vom Herausgeber oder auch seinem Kopisten einfach am Ende der ursprünglichen, in sich geschlossenen Überleitungspartie (25-44) eingefügt wurden”. I take this is a misprint for “(26-44)”.
} Admittedly the two hypothetical marginalia could have been close enough to be mistaken for a single block of lines, but Gaiser's explanation of how the lines ended up where they did seems far fetched. Would the editor — the person who distributed Lucretius' original written version of the text for copying — not have noticed how repetitive the passage became by inserting those lines at that point when he was looking through the text for the right place where to insert a marginal addition which, oddly, came 19 lines ahead of its intended place, and ended 10 lines ahead of it?\footnote{This is after all the 'editor' who, according to Gaiser, was careful enough to see that igitur of line 41 cannot be detached from line 40 when inserting what he considered a single addition. On Mewaldt's theory too the 'editor' must have failed to notice the repetitiousness of the doublet, since it must have been written separately. Yet there is a difference, in this respect, between (a) inserting a set of lines where they were indicated to go on the 'autograph' and (b) having to read through the text looking for the right place for the lines. The doublet makes one suspect that the policy of the 'editor' was to preserve everything he found in Lucretius' original copy.} Can a conservative attitude to textual criticism really explain this?

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There appears to be a way out for Gaiser’s view. It is conceivable that the editor introduced the lines where he did mechanically, if they were written in the intercolumnium of the roll. He added the marginal lines to the third rather than the second column of Lucretius’ autograph. This would imply that Lucretius’ autograph had about 20 lines per column, which is a rather low figure, but perhaps not impossible. It would also imply that the marginal additions were added, against convention, on the left of the column.

But some difficulties remain for Gaiser’s theory: one has to assume that Lucretius’ notarius, or Lucretius himself, did not take care to separate one set of lines from the other, and that he did not delete clearly lines 29-32 (or that the ‘editor’ missed or ignored such deletion). And, if lines 49-53 were a marginal correction of (i.e. an alternative to) lines 29-32, why did Lucretius repeat word by word lines 29 and 30 in the ‘correction’ as lines 49 and 50? A further consideration, which makes me suspicious of Gaiser’s explanation, is that it is a very lucky coincidence that lines 45-53 taken together make perfect sense, syntax and style.

The possibility of two alternative versions of the syllabus is certainly more economical. One faces the difficulty that the outdated version was never deleted, or the ‘editor’ missed the deletion. Another possibility is that Lucretius, still undecided, had not indicated which version should be deleted. Since each book of the DRN was almost certainly written on a separate roll, a switch in the order of books would have been a simple procedure.

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810 One possibility is perhaps that the repetition was a way of indicating that the lines were an addition, and where in the text they should be inserted. But one may wonder whether repeating one line (rather than two lines) would not have done for that purpose.
The ‘editor’ would have been presented with separate rolls for the different books, it was his decision whether III or IV should come first, although presumably the numbers of the books would have been indicated on the rolls. If Lucretius had not yet made up his mind, he probably would not have altered the numbers of the rolls.

It seems reasonable to assume that the second version of the syllabus was written either in the intercolumnium or on the back of the roll, unless the ‘editor’ recovered the text from the wax tablets Lucretius presumably used, which sounds rather far-fetched. It is surprising that the ‘editor’ kept both versions in the text, especially since one of them would have been written separately. Perhaps the ‘editor’, as Conte suggests, avoided interfering with the text of the ‘autograph’, since he included such an obviously repetitive passage (see above note 809).

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811 There is evidence for rolls *opisthographoi* from Herculaneum (Capasso 1991: 210). Writing on the back is additions by Philodemus to his own works. Examples are *P Herc*. 1670 (see Ferrario 1972), and *P Herc*. 1021 (Gallo 2002: 52-56). Dorandi (2001: 344) argues that *P Herc*. 1021 was Philodemus’ working copy (“copia di lavoro”) because of the disordered writing, the number of corrections, insertions and transpositions in the text. He seems to think that Philodemus had collected material on this roll from other sources, preparing for the composition of his work on Plato’s school.

812 Drafts would presumably have been made on re-usable wax tablets before committing the text to papyrus (which was expensive). It is reported (Diogenes Laertius III. 37) that Plato’s *Laws* were left on wax tablets, and that alternative orderings for the beginning of the *Republic* were found. Philodemus, however, seems to have worked his draft on papyrus in *P Herc*. 1021. Conventions may have been different for poetry (with poets committing their text to papyrus only when more wedded to it), but one cannot exclude that alterations other than the introduction of the ‘double syllabus’ had been made on the rolls Lucretius’ original copy.

813 Above page 384.
The state of the text shows that the poem was not handed out for further copying by Lucretius himself.814 Had Lucretius been the 'editor', the mistake would have not gone unnoticed. St. Jerome's statement815 that Lucretius' poem was edited posthumously (... cum aliquot libros... conscripsisset, quos postecf Cicero emendavit, ...), is corroborated by the state of the transmitted text.817

The faulty condition of the text at the start of book IV does not make it more likely that the first twenty-five lines of DRNIV, which are repeated almost verbatim from DRN I 926-950, were introduced by Lucretius as a stopgap, or by the 'editor' (the book having no opening). Lucretius himself put these lines at the start of book IV because he wanted them there.818

Schiesaro (1994: 101), following Conte, convincingly reads the repetition at the start of DRNIV as a 'proem in the middle', and comments on two features. First

814 I can see no reason to believe that either set of line could be an interpolation, although Giancotti (1994: 492) suggests this for lines 45-53.

815 In his entry in the Chronicon of Eusebius for 94 B.C., although a minority of MSS record the entry under the years 96 or 93 B.C.(Smith 1992a: x).

816 That St. Jerome used this postea with the meaning post obitum eius is argued in Scarcia (1964:104-6) on the parallel of the lemma for Varrus and Tucca: Varius et Tucca, Vergilii et Horatii contuberales, poetae habentur illustres, qui Aeneidos postea libros emendarunt sub lege ea ut nihil adderent.

817 This does not mean that material in St. Jerome's entry derives from Suetonius' De viris illustribus. That the poem had a posthumous editor might have been extrapolated from the state of the text or from the (probably fabricated) information on Lucretius' furor and suicide (Giancotti 1994: xx). Since the lemma cannot be traced back to Suetonius, the statement that a certain Cicero was the editor must be treated with caution.

818 It cannot be proved, however, that Lucretius would not have further reworked these lines.
there is no indication that this is in fact a second proem. Second, Lucretius’ poem repeats almost *verbatim* a passage that the reader has already met in book I, a passage which he has met towards the end of the book, rather than at the beginning. Lucretius uses the repetition to signal that the poem is ‘born again’ (*palingenesis*).

Let us come back to the implications of the ‘double redaction’ in book IV. The condition of the text shows only that (a) Lucretius decided to alter the order of books III and IV, at some point after he had written the first syllabus to what is now book IV, not that (b) Lucretius switched books III and IV while he intervened extensively in the first draft by making additions in some places and transferring topics or that (c) Lucretius engaged in a wholesale and linear revision of the poem,\(^819\) extensively re-writing the hexameters he had already produced in the first draft.

Sedley (1998: xvi-xvii) suggests that Lucretius worked his way through ΠΠΠ, following the sequence of topics there, although he omitted some topics and arguments. While writing this first draft, he saw how he should reorder the material in a six-book structure. This included the decision to reverse the material of books III and IV, an alteration to the order in Epicurus. Sedley suggests that “the fine detail of the restructuring” came in a second phase which Lucretius only carried out up to book III. According to Sedley the proems are the “latest stages” of his work; and the prologues of books V and VI (as well as IV) betray plans which Lucretius left unfulfilled.\(^820\)

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\(^{819}\) One may wonder whether Lucretius needed to come to the end of his poem before going back and ‘revising’ what he had already written, even if it was already committed to papyrus.

\(^{820}\) This supposition seems to present some difficulties. Where did Lucretius physically write them? On the same roll as the first-draft version? When were the newly elaborated prologues to books V
It is not wholly clear whether Sedley envisages that Lucretius wrote the poem at first following Epicurus closely, and then started going through it again, making extensive changes to the detail of his expression. It would appear from Sedley (1998: 160) that Lucretius’ reworking of Thucydidés’ description of the Athenian Plague in *DRN VI* 1138-1286 would have involved considerable change.821 This procedure seems implausible because it would involve constant change of detail.822 Lucretius would have been producing a carefully versified first draft, knowing that he would be not just discarding some of it, but re-composing even the verses that were retained.823 This sounds unlikely.

But many of the changes Sedley argues Lucretius made between the first and the second draft of books I-III, but allegedly did not carry out in IV-VI, relate either to the transposition of material which might involve some adjustment at the new joins, but not extensive reworking of whole passages, or to additions (e.g. on elaborated prologues to books V and VI written? Why did Lucretius decide to write them before he started work on the second version of those books? Did the editor replace the outdated versions of the prologue to books V and VI with the new version, or did Lucretius write the first draft without proems?

821 On Sedley’s theory (1998: 149) Lucretius would have added philosophical material on ‘ghosts’. He does not explain why Lucretius would have not taken over the material on ghosts when drawing the material from his Epicurean source.

822 The modifications of Epicurus’ original which Sedley discusses in pages 193-198 (the introduction of specifically atomistic ideas earlier than the argument warrants) could have been present already in Lucretius’ ‘first’ draft especially given that Sedley (1998: 201-202) attributes them also to the influence of Empedocles and so do not in themselves indicate extensive rewriting in a second draft.

823 Sedley (1998: 155) argues that the unrevised books are longer because Lucretius did some “trimming”.
‘ghosts’, on the abodes of the gods and on the moral lesson of the plague 1998: 160). These would not themselves involve changing what had already been written. That Lucretius would have added a moral message to his description of the Athenian Plague is debatable in my view. If an account of ‘ghosts’ is missing from book IV (as the second version of the syllabus implies), it may be that the writing of the new syllabus — so that he could introduce book III between book II and book IV — was Lucretius’ last contribution to his poem: his idea of expanding the section on ‘ghosts’ was never carried out. The evidence for a wholesale extensive reworking of a first draft of the poem is far from compelling.

\[\text{DRN V 153-155 is not found in DRN.}\]
Editors of *PHerc.* 1148 after Ohly avoid speculating on a possible reconstruction of the roll, probably because of Cavallo's remarks on the futility of trying to reconstruct rolls when — as is the case with *PHerc.* 1148 (and *PHerc.* 1151) — the final stichometric is preserved but the overall height of columns is unknown. Cavallo is right to object that precise reconstruction of rolls in this condition, such as Ohly attempted, are little more than guesswork. Yet it seems worthwhile to try to determine a maximum and minimum conceivable number of columns for our roll.

It is almost certain that the final *subscriptio* of *PHerc.* 1148 gives 3,800 as the total number of *στίχοι* for book XIV. The reading of the preserved

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823 Cavallo 1983: 9 and, especially, 21-22.

825 Leone (1984: 22, note 27) alerts us to the possibility of letters having been lost in a 15 mm gap after the final *etα*, but she rightly remarks that such a loss of letters seems rather improbable because it would spoil the symmetry of the *subscriptio*. Even if letters were lost, the difference is not enough to affect my overall argument. The highest conceivable total would be 3, 910 with a further *delta* as well as an *etα*, but it seems very unlikely two stichometric letters could have disappeared in the 15 mm gap.

827 It is agreed that the stichometric at the end of most Herculaneum papyri (and Greek prose texts generally) does not refer the actual number of lines on the papyrus, but rather to the number of *στίχοι*, that is, lines thought to equate the length of an average hexameter.
stichometric letters as XXXIIhHHH = 3,800 is beyond doubt. 828

It seems very likely that, if 'Anonimo' V (the scribe of PHer. 1148 and, most probably, PHer. 1151) counted the lines himself to work out the reckoning of the final stichometric, he would have taken 200 of his lines to correspond to 100 στίχοι. 829 This would make the text of our roll 7,600 lines long, to the closest hundred. The uncertainty concerning whether marginal stichometric indicators 830 appear in PHer. 1148, however, makes one doubt whether 'Anonimo V' counted

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828 Sedley (1973: 10) thought the stichometric of PHer. 1148 was XXXIIhHHH[ and that the total number of lines was 3,600 (the stichometric being corrupt through a dittography of ΠhH). Leone (1984: 64) is in no doubt that the stichometric is XXXIIhHHH. Her reading is certainly correct. Sedley, presumably convinced by Leone, changed his mind in 1998: 103 and takes 3,800 as the basis for his calculations about the length of book XIV (roughly 136,800 letters, i.e. 22,000 words long).

829 According to Cavallo (1983: 21) and Puglia 180 lines for 100 στίχοι was an alternative reckoning. Since the lines in PHer. 1148 average 19-20 letters, which is slightly more than half an average hexameter, one might think our papyrus could have used the alternative reckoning. But there seems to be little evidence for the 180 lines reckoning — the only examples being PHer. 1424 (Cavallo 1983: 14-16), and PHer. 1414 according to Puglia (1997: 127) — while the 200 lines for 100 στίχοι reckoning, as well as appearing more practical, is widely attested in prose rolls from Herculaneum. 200 lines for 100 στίχοι seems to have been the norm in texts of Philodemus: e.g. Περὶ ἐνορίεσθαι (Obbink 1996: 62-63) where the average line is 'only' 13-14 letters, and Περὶ τοιμαστῶν where the average is 17.7-19.5 letters per line (Janko2000: 118). The logical papyrus P.Par 2 = P.Louvre Inv. 2326, which is dated on the basis of a document on the back to the close of the third century B.C. (the postulated date of PHer. 1148 and 1151), has stichometric dots every two hundred lines. Here the number of letters per lines varies between 10 and 22 (Domini Maccio - Funghi 1985: 130). And Dionysius of Halicarnassus' report (Thucydides X. 40) that Thucydides I. 1-88 (= 51 pages of OCT), which forms two-thirds of the book, is 2,000 στίχοι long seems at least consistent with a reckoning of 100 στίχοι for 200 lines.

830 See below note 855 for a possible indicator of the number of columns.
his lines. The final stichometric may well have been, as Sedley (1998: 103, note 27)
suggests, part of the transmitted text. It is conceivable, and perhaps likely, that the
stichometric indicates the 'real' number of lines as written in the archetype of PHerc.
1148 (and PHerc. 1151), where the lines may have been written in units equivalent
to the 'hexameter-length'.

Even if the stichometric reckoning does not refer to the actual roll of PHerc.
1148, but to an earlier roll, the accuracy of the total figure is not completely
invalidated. Given that the average number of letters per line in PHerc. 1148 is 19,
and that 36 letters seems the working hypothesis for the average length of one
στίχως, the difference between the two reckonings cannot have been great. It is
very likely that the roll of PHerc. 1148 contained about 7,600 lines, and certain that
it included at least 7,000 lines.

Ohly suggested that PHerc. 1148 had a total of 7,600 lines spread over 211

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831 The fact that the name of the άρχων is abbreviated in the subscriptio to PHerc. 1151, but not
in that to 1148, strongly suggests that 'Anonimo V' copied the subscriptio exactly as it appeared in the
exemplar, and that therefore the reckoning preserved is that of the exemplar.

832 Van Sickle (1980: 7) refers to a copy of Plato's Phaedo of the III B.C. (note 21 on page 32:
P.Petrie 1.5-8, P. Lit. Lon. 145; Pack 1083), with 24-32 letters per line. Is this an example of a prose text
one line corresponded to one στίχως?

833 Leone 1984: 23 gives 19-20 as the average number of letters per line.

834 Graux proposed circa 34-38 letters; Diels circa 15-18 syllables, which are roughly equivalent
to 34-38 letters.

835 Sedley (1998: 103, note 27) is right in pointing out that one should allow for margin of error
in such calculations.
columns, each column containing 36 lines, in a roll 22.5-23 cm high.\textsuperscript{836} His starting point of 7,600 lines for the roll cannot be far off the mark. Let us now consider his suggestion that the roll was 22.5-23 cm high.\textsuperscript{837}

The size of the extant fragments of \textit{PHerc.} 1148 does not help in working out the height of the roll. The earliest surviving \textit{inventaria} of the Herculaneum papyri, which probably date to 1781, give the height of \textit{PHerc.} 1148 as 7\textit{once}.\textsuperscript{838} This corresponds exactly to the measurements of the papyrus as it survives today.\textsuperscript{839} The fabric of \textit{PHerc.} 1148 reaches 14 cm in some of the fragments.\textsuperscript{840} It seems very likely the roll was found already broken, or broken during recovery.\textsuperscript{841} Whether the lower

\textsuperscript{836} Ohly 1924: 211-212. Bassi (1909: 346) on the other hand had worked on the basis of 3,800 \textit{prose} lines, which invalidates his reconstruction of the roll.

\textsuperscript{837} No marginal stichometric letters can be seen in \textit{PHerc.} 1148. The only way to gather the approximate number of lines per column is by determining the height of the roll, and so the height of the columns and hence the number of lines per column.

\textsuperscript{838} Blank and Auricchio 2004: 89. \textit{PHerc.} 1151 (\textit{II}Φ \textit{XV}) is recorded as being 6 "\textit{once}" in height (1. 4/5 in width). Both rolls are described as "facile a sfogliarsi" which may suggests that no \textit{scorzatura} was undertaken on them, but they went straight to Piaggio's \textit{macchina}. The outermost layers were perhaps reduced to ashes by the pyroclastic flow.

\textsuperscript{839} This rules out Casanova, who unrolled the papyrus in 1803, or Hayter, Casanova's supervisor. It is perhaps still conceivable that Paderni, who worked on the Herculaneum rolls before Hayter's times, decided to cut the roll horizontally at its centre. But I know of no parallel for such a procedure.

\textsuperscript{840} These columns have 23 lines (Leone 1984: 22). Since the margin is 2.5 cm, 23 lines were fitted into 11.5 cm, approximately 1 line every half cm.

\textsuperscript{841} Arrighetti (1973: 577) has it that \textit{PHerc.} 1149/993 (\textit{II}Φ \textit{II}) "fu spezzato in due parti", implying this was done intentionally, but gives no supporting arguments for this. \textit{PHerc.} 1149, the top portion of the roll, preserved about two thirds of the total length of the column. \textit{PHerc.} 1479 (unrolled in
portion of the roll was ever retrieved, is amongst the unrolled midolli in the Officina or was destroyed in one of the attempts at opening the rolls which preceded Piaggio cannot be determined on the present evidence. One has to turn to the evidence from other rolls.

In rolls from Herculaneum a height of between 20 and 24 cm seems to be the norm. Bassi proposed 18-19 cm as the standard height, but Cavallo suggests rather between 19 and 24 cm, usually 21. Cavallo points out that the format with a height over 24 cm is rather rare (“assai raro”) in Greek-Egyptian papyri before the late first century A.D. and that this larger format appears not to be attested in Greek rolls from Herculaneum. Capasso similarly concludes (1991: 205) that the Greek rolls from Herculaneum are between 19-20 and 23-24 cm high, usually 21-22 cm.

Given that Egyptian rolls taller than 24 cm are attested, I shall take it, for 1804) and PHerc. 1417 (unrolled in 1808) are the upper and lower parts of the same roll broken in two (Sedley 1973: 6). Sedley (1973: 10) also points out that the central lines of each column, perhaps 3 or 4 lines out of 32-33, are missing. Presumably the fabric containing the central four lines crumbled and was lost. For the situation with PHerc. 1431 (of which we have only the top half of the midollo; see Leone 2002: 12). It may be that only the parts of the rolls which stuck out of the solidified ashes were recovered, and that the lower parts are still waiting in the villa.


843 Cavallo 1983: 47-48. Cavallo (1983: 15-16) gives as safely reconstructed rolls (all measurements are circa): PHerc. 1497: 10.5 meters x 23.5 cm; PHerc. 1050: 10 meters x 20 cm; PHerc. 1414: 9 metres x 19-22 cm; PHerc. 1424: 6.5 meters x 21 cm, PHerc. 1471: 11.5 meters x 21 cm.

844 Cavallo perhaps slightly underestimated the occurrence of rolls taller than 24 cm in Ptolemaic Egypt. He mentions, as an exception, PTebt. I (late second century B.C.), which is 30.5 cm high. Johnson (2004: 141-142) concludes that before the Roman era the standard for literary rolls was 19-25 cm (although in the Roman era papyri could surpass 33 cm). Out of 11 examples from Ptolemaic Egypt in his
the sake of argument — in my view the roll was not higher than 25 cm — that 28 cm was the height of the roll. My reason for taking a maximum height is that the number of columns is kept at a minimum and the surviving part is therefore a greater proportion of the whole book than it would be with a lesser height, and therefore the polemic represented a greater proportion of the whole book. A height of 28 cm would give a total of 175 columns for P Herc. 1148, with between 43 and 44 lines per page, and a roll 12.25 meters long. A height of 25 cm would make the total 200 columns, with 38 lines per page, and a roll circa 14 meters long.

The rolls from Herculaneum are only rarely over 10-11 meters in length, usually between 6 and 9 meters. The two longest safely attested rolls from Herculaneum are P Herc. 1426 and P Herc. 1425. P Herc. 1426 (Περὶ θητορικῆς ΠΙΙ) had 205 columns, but the total length of the roll did not exceed 13 meters, according to Hammerstaedt (1992: 13). Janko calculated that P Herc. 1425 (Περὶ ποιημάτων Ψ) had perhaps as many as 269 columns, which would result in a roll just under 14.5 meters, 14.1 meters being the length of the written space. This chart 3.6 (2004: 216) no papyrus reaches 30 cm, but three are in the 25 cm range, and 2 above it.

845 Taking a minimum total of 7,000 lines for the papyrus.
847 Obbink 1996: 70.
848 Janko 1991: 62, note 346. Both Janko and Mangoni propose alternative reconstructions, in which they adopt the 180 lines for 100 στιχοί standard. Del Mastro (2001: 379-380) has found stichometric dots every 20 lines on this papyrus, which suggests that the reckoning was 20 lines for 10 στιχοί. Del Mastro has also found three stichometric letters, but was unable to decipher them.
849 The columns in this papyrus are circa 4 cm wide and the intercolumnium is between 1 and 1.5 cm (Mangoni 1991: 67).
figure has been disputed by Mangoni (1992: 133 and 137, note 39), who calculates (from correspondence with the edition in PHerc. 1538) that the roll had 256 columns, i.e. that it was 13 meters long. Also of interest is PHerc. 1427 (Περὶ ῥητορικῆς Ἡ), which had XXXX (4,000) στίχοι. Puglia (1997: 124-125) corroborates Ohly's suggestion that the final subscriptio gave [σ]λζ (237) as the number of columns, and that the roll was 15.80 meters long. Yet Puglia does not rule out the possibility that the book was divided into two rolls. The roll of which PHerc. 1428 was the midollo, containing Philodemus' Περὶ εὐσεβείας, seems to have been one of two tomes (Obbink 1996: 70). In that case the reckoning of columns, and perhaps of lines, continued from one roll to the other.

The total reckoning of Περὶ εὐσεβείας was in excess of 5,000 στίχοι (Puglia 1997: 124). That the counting of columns did continue throughout is shown by the numbers τι (310), τξ (320) found in the lower margins of PHerc. 1428, which record the number of columns (Obbink 1996: 69). Puglia (1997: 125) finds also a τζ (360), and shows that τζ total number in the subscriptio. If it was not divided into

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850 Obbink (1996: 72, note 2) reports that at the end of PHerc. 1423, the first roll of Περὶ ῥητορικῆς Ἡ, we read τῶν εἰς δύο τὸ πρῶτον, but in the roll containing the second part of the book, PHerc. 1007, there is no sign of any such indication in the subscriptio either on the papyrus, or in the disegno. PHerc. 1538, on the other hand, carries the following subscriptio: Φιλοδήμου | Περὶ ποιημάτων | τούτῳ εἴ | [τῶν] εἰς δύο | [τζ]β.

851 There is no way of determining with which stichometric letter the second roll started, but there is no reason to suppose that the scribe intentionally finished the first tome at ω and made the second tome longer.
two tomes *PHerc.* 1428 would have been an example of a roll 23 meters long.\(^{852}\)

Parallels for rolls of such length are few and very uncertain. Johnson (2004: 146) suggests that *POxy.* 341 (Thucydides book VIII) and *POxy.* 2096+3374 (Herodotus book I) preserved the entire book, rather than parts of it. This would make the two rolls respectively 17.6 and 22.9 meters long. Johnson also refers, more tentatively, to *POxy.* 3156+3669, which according to his reconstruction would have been 25-26 meters long. He himself (2004: 146, note 58) mentions that these could have been two different rolls because of the different format of the writing in some of the fragments. The fragments may come from two different rolls presumably also in *POxy.* 2096+3374 so that conclusive evidence that rolls could stretch to more than 20 meters is still needed. This makes me very cautious about the possibility that *Πέρι εὐσεβείας* was in one enormous roll more than half of which was destroyed

\(^{852}\) All the scorze which Obbink attributes to *Πέρι εὐσεβείας* could perhaps belong to a single roll, of which *PHerc.* 1428 is the midollo. According to Obbink (1996: 72-73) we have remains from two rolls; he thinks that *scorzatura totale* was undertaken on the roll containing the first part of the treatise (*PHerc.* 229, 247/242, 437/452, 1077, 1098, 1610 and 1788), but that only *scorzatura parziale* was undertaken on the second roll (*PHerc.* 243, 433, 1088, 1602, 1609 and 1648), the midollo of which (*PHerc.* 1428) was unrolled in 1802. I have not personally inspected the relevant papyri, but it sounds as though there is a possibility that we are only reading remains from the roll containing the second part of the treatise, which may or may not have been longer than the first. If as Obbink (1996: 72) assumes, the scribe started again from α in the roll containing the second part (irrespective of the reckoning of the previous roll), the roll containing the second part of the treatise was longer. Remarks in Johnson (2004: 148, note 66) seem to imply that Obbink now adheres to the theory that the whole work was written in one roll. This would be based on a testimony of an *interprete* (one of the first scholars who worked on the papyri) who speaks of one roll. But one wonders what the *interprete* knew about the matter. Cavallo (1983: 37) had assigned the hand of *PHerc.* 242 and 247 to different groups.

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before it underwent scorzatura.

Janko (2000: 109 and 118) reconstructs the roll containing book I of Philodemus' Περὶ ποιημάτων. It had at least 213 columns: the column to column width was 7.4-7.8 cm (2000: 72), so that the roll would have come to at least 16.4 meters, excluding blanks at the beginning and the end (2000: 109). The evidence from \textit{PHerc.} 1428 though makes one consider the possibility that Περὶ ποιημάτων I too may have been divided into two tomes (and that some of the scorze which Janko groups together are from two different tomes). Scribes sometimes did not report that a roll was a second tome (above note 850). My objection to thinking that Περὶ ποιημάτων I was divided into two tomes is that the midollo of one of the two rolls would have gone missing.

Although rolls which are longer than 15 meters, assuming they are safely reconstructed, are exceptions and were produced much later than \textit{PHerc.} 1148 and 1151, one cannot rule out that \textit{PHerc.} 1148 stretched to over 15 meters in length. It is perhaps conceivable that \textit{PHerc.} 1148 had as many as 250 columns, with a roll 18 cm high and 17.50 meters long. Certainly the main objection to Ohly's reconstruction of \textit{PHerc.} 1148, namely that the roll becomes too long, seems untenable. What is more, there is no proof that ΠΦ book XIV could not have been

\footnote{Janko (2000: 115) finds the stichometric letters δ (400 στόχοι), θ (800) and μ (1,200), between short horizontal lines. He argues (2000: 118) that the scribe must have gone through the whole alphabet and then started again from α, since there are 213 extant columns. Del Mastro (2001: 380) points out that in \textit{PHerc.} 1425 (Περὶ ποιημάτων V) there is no trace of final reckoning. \textit{PHerc.} 1581 has a γ, and \textit{PHerc.} 403 has an ε (which Janko read as τ and υ). Both \textit{PHerc.} 1581 and 403 are scorze coming ahead of midollo (\textit{PHerc.} 1425). The scribe was probably going through the alphabet a second time here.}

\footnote{Unless, that it, one of the rolls underwent scorzatura totale, but there is no evidence for it.}
divided into two rolls.\footnote{The multispectral images of \textit{PHerc.} 1148 reveal traces of ink in the margin above column XI. The traces seem consistent with a \pi (see above page 98). Assuming that the \pi was used as the number 80, it probably refers to the number of the columns of the roll so far. A figure of 80 columns at column XI, which would make the total of the roll something like 115 columns, is certainly impossible, unless Bassi was right and Ohly wrong, and we have the number of prose lines (above note 836). There are two further possibilities. One is that \textit{II} \textit{XIV} was divided into two tomes and the scribe started the reckoning afresh with the second tome. Indeed there is further illegible writing beneath the last line of the subscriptio which could have referred to a division into two tomes. A possible objection to this view is that the reckoning in Philodemus' \textit{Περὶ εὐοεβεῖας} seems to have continued from one roll to the other (above note 852). \textit{Περὶ εὐοεβεῖας} however was written much later so that conventions may have been different. A further possibility is to assume that a letter \rho (=100) preceded the \pi (which would still allow but not require that the book was divided into two tomes) but there is no trace of ink to confirm such a supposition.}

Further indication may come from the size of the top margin in our roll.\footnote{None of the bottom margins of \textit{PHerc.} 1148 survives. Johnson (2004: 134) argues that the upper margin was often smaller than the top one in literary texts, but only by a ratio of 4:5 or 6:7.}

The columns usually take up 3/4 or 4/5 of the total height of the roll (Cavallo 1983: 19).\footnote{Capasso (1991: 208-209) cites \textit{PHerc.} 994/1676, 1423, 1425, 1426, 1427, 1497 as examples of the 3/4 standard and \textit{PHerc.} 1021, 1007/1673, 1050, 1065 as examples of the 4/5 standard. Capasso agrees with Cavallo that in some cases the margins do not survive complete. The examples in Johnson's (2004) chart 3.5d(2), pages 137-138 support Cavallo's view: out of twenty six examples of informally and unexceptionally written papyri from Oxyrhynchus only in one case is the height of the column below 60% of that of the whole roll.}

Given that the margin in \textit{PHerc.} 1148 is roughly 2.5 cm and that therefore the two margins presumably added up to 5 cm,\footnote{Cavallo does not comment on whether the top and bottom margin are always the same height. Leone (1984: 23) is concerned that we do not know whether the bottom margin was the same height as} the evidence again suggests a roll 20-
25 cm high. It is worth pointing out that *PHerc.* 1479/1417, which presents a top margin just over 2.5 cm, the bottom one being about 3 cm, had 32-33 lines per column (Sedley 1973: 10).\(^8\)

Cavallo (1983: 49) notes that rolls from Herculaneum keep to the 1/3 ratio between width and height of the column. This would suggest a column 17-18 cm high, with a roll approximately 23 cm high and 15 meters long. If the roll was 28 cm high the ratio of the width of the column to its length would, unusually, have been as little as 1/4. One should not however place too much weight on such calculations, since we cannot be certain that the margin survives complete.

Evidence from the number of lines per column in other papyri\(^6\) cannot be of much help, because it depends on size of the letters and of the interlinear space in the particular copy. At any rate 40 lines per column, with a roll of 28 cm high and

Even if the bottom margin was higher (say, about half a cm higher), we would be dealing with 1 line per column or thereabouts, which would not seriously affect the reckoning, especially considering that the number of lines per column would not be exactly the same for every column.

\(^8\) It is interesting that between the first and the second column of *cornice* 10, in correspondence to line 11, there is a sign made up of a circle with a horizontal bar above and one below. This was part of a *coronis* which probably extended to the further traces of ink above it in the margin; it very aptly marks the end of the criticism of Plato, and the switch to the section where Epicurus defends himself from charges of being un-original (the last four columns of *PHerc.* 1148). A comparable but more elaborate sign appears in correspondence of the last line of the book in *cornice* 11, to signal the end of the book.

\(^6\) Capasso (1991: 208) comments on how the number of lines per column is variable (as in Egyptian papyri): "la quantità minima è compresa tra le 25 e le 30 (*PHerc.* 994/1676, 1007/1673)), quella media oscilla tra le 30 e le 34 (*PHerc.* 1423, 1426, 1027), quella alta da 34 a 38 (*PHerc.* 1050, 1065, 1425, 1427), quella altissima arriva a 40 e va anche oltre (*PHerc.* 1021, 1424, 1497, 1672)".
12.25 meters long, would be a very high figure.861

Other rolls of Epicurus’ ΠΦ from Herculaneum are not much help. Unfortunately PHerc. 1037 and 1158, allegedly by ‘Anonimo V’, 862 are not complete.863 PHerc. 1191 (ΠΦ XXV) seems worth comparing, since it is part of Cavallo’s group A, which, although earlier than group D, is graphically similar. According to Laursen (1995: 9), the columns of PHerc. 1191 had “between 26 and 29 (possibly 30) lines of text”. PHerc. 1149/993,864 which was very probably from the same edition as PHerc. 1191, had probably a very similar format.

To conclude, it looks as though the number of columns making up book XIV would probably have fallen between 214 columns (with a roll, or two rolls, 23 cm high and 15 meters long) and 175 columns (with a roll 28 cm high and 12.25 meters long).

Let us now consider PHerc. 1151, the roll containing ΠΦ XV. The final

861 Especially when one considers the size of the letters on PHerc. 1148, which is above average for Herculaneum rolls.

862 One cannot assume that the scribe would always use rolls of the same format, height being what interests us here especially. The Greek importers of papyrus very probably would have kept stocks of various sizes. Pliny, Book XIII, 23 (75), is evidence for paper being imported from Alexandria and (77) sheets being joined together in Egypt. But perhaps when a complete edition of ΠΦ was undertaken, a stock of 37 rolls would have been acquired, and one would assume that the rolls had the same format, especially the same height. A further relevant question appears to be whether higher rolls were used only for longer works, so that such works could be fitted in one roll. But the fact that Philodemus’ Περὶ ὀργῆς ira had ‘only’ 124 columns of 40 lines seems to speak against this supposition. The size of book shelves would also have played a part.

863 No roll appears to be safely reconstructed among the papyri from ΠΦ in Cavallo’s Group D.

864 See above note 841 on how this papyrus broke.
stichometric is XXXHH = 3,200.\textsuperscript{865} This means that if the roll was 28 cm high the whole book would have been made up of 151.5 columns, with 43-44 lines each, making up 10.6 meters, if the roll was 25 cm high the whole book would have spread over 159 columns, with roughly 39 lines each, that is a roll longer than 11.1 meters, and if the roll was 22 cm high its length would have been just above 13 meters long (with \textit{circa} 189 columns containing 34 lines each).

\textsuperscript{865} Millot (1973: 26) warns that one or two letters may be lost at the end of the number. Sedley (1998: 102, note 25) assumes that Millot thought a digit might have been lost at the start, which would be much more problematic for reconstructing the roll. Although Millot is worried about the two horizontals before the first $\chi$, she rightly understands them as number-indicators. Millot does not suggest that they could be traces of a stichometric letter, and, at any rate, there is no space for one on \textit{PHerc}. 1151. As for the possibility of letters being lost at the end, the first of the Napoli disegni (N) does not show any gap in the fabric after the final \textit{eta}, and gives the stichometric as XXXHH=3,200. N draws gaps in the fabric elsewhere in the page, though, admittedly, one cannot assume N was always accurate.
Appendix (c). Do Epicurus’ *Ad Herodotum* and *Ad Pythoclem* reflect continuous books of ΠΦ?

The starting point for understanding how Epicurus redacted his ἑπιτομαὶ is the opening of *Ad Herodotum*, in particular sections 35 and 37. *Ad Herodotum* 35 — Sedley (1998: 109) argues — shows that Epicurus is reproducing the content of the books of ΠΦ he had composed by that time. It is certainly tempting to take ἔκαστα τῶν περὶ φύσεως ἀναγεγραμμένων and τὰς μεῖζους τῶν συντεταγμένων βιβλίους as referring specifically to the books of ΠΦ,\(^8\) rather than to Epicurus’ writings “about nature”, generally. The expression τῆς ὀλίγης πραγμάτειας in 35 can mean “treatise” and thus refer specifically to ΠΦ. The word is used for a lecture course in several books,\(^7\) such as Aristotle’s *Physics*, and therefore could apply to

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\(^8\) Sedley also proposes (1998: 99-100) that τὰς μεῖζους τῶν συντεταγμένων βιβλίους refers to particular books of ΠΦ, namely I-II, XI-XV and XXV, which were especially treasured and studied. His reasons for holding that these were especially treasured, is that there are multiple copies of some of these books from Herculaneum, and that I-II and XI-XV are the only books referred to in the scholia to *Ad Herodotum* and *Ad Pythoclem*. There seems to be no compelling reason to think that some books of ΠΦ were considered more important than others. Epicurus’ μεῖζους βιβλίους may refer to “larger books” or “books containing a fuller treatment” (i.e. presumably those of ΠΦ as opposed to less detailed works), rather than “books which are doctrinally more important”.

\(^7\) On the development in meaning of the word πραγματεία see Untersteiner (1980: 41), who endorses Jaeger’s view that the word originally referred to the way of carrying out research and the research itself, that from this sense derived the meaning ‘treatise’, and that the meaning extends to “field
The references to ὀλοσχερωτάτων δοξῶν in 35 and to ὀλων δοξῶν in 37, on the other hand, suggest perhaps a comprehensive account of the δόξαι, rather than a text which reproduced step by step the order of the treatment in ΠΦ.

Sedley argues further that Epicurus intentionally left out of the account in Ad Herodotum the detailed explanation of cosmological, meteorological and astronomical phenomena given in ΠΦ XI, XII and sections of XIII, which — Sedley has it — Epicurus had written by the time he composed Ad Herodotum. An objection to this theory is that Epicurus would be stating that he has summarised ἡ ὀλη πραγματεῖα, when in fact he had left out most of the material from the three books he had written last.

Epicurus’ usage in 86 (πολλὰ τῶν κατὰ μέρος ἐξαιρομένων κατὰ τὴν ὀλην πραγματείαν ἡμίν) is perhaps not inconsistent with this reading, although the fact itself that Epicurus says in the passage that the students should work this out themselves suggests that he was being selective.

Although Hicks (1931: 565 and 567) translates both terms with “whole”, according to LSJ ὀλοσχερῆς in this passage means “in rough (or general) outline”, their third meaning. Perhaps Epicurus having made the point that the summary has to be selective in 35 did not feel he needed to specify the point again at 37.

Sedley does not explain why Epicurus would have omitted these topics in Ad Herodotum. In fact some of the topics of ΠΦ XI and XII are mentioned in Ad Herodotum (origin and mortality of worlds in 73b, shape of worlds in 74, civilisation and language in 75-76a, astronomy in 76b-80). The fact that the scholiast in 74 notes that the treatment in ΠΦ XII is different from that in Ad Herodotum may suggest that Ad Herodotum was written before ΠΦ XII.

On the relative chronology of Ad Herodotum and ΠΦ, above page 217 and note 377.
Analysis of the contents of *Ad Herodotum* suggests that paragraphs 37-42 reproduced at many points the sequence of topics of ΠΦ I, and perhaps part of ΠΦ II (above page 224-226), but it is far from certain that *Ad Herodotum* 43-82 can be taken as reproducing the order of topics of the latter parts of ΠΦ II and the following books. Although all the topics of *DRN* II appear in *Ad Herodotum*, the sequence is different, as the chart in Bailey (1947: 23) shows. It is disputable in this case whether *Ad Herodotum* 43-82 or *DRN* II reflect the sequence of ΠΦ.

The treatment of images in the final part of ΠΦ II is divided into three

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872 Giussani (1923: 1-11) explained the 'disorder' he finds in *Ad Herodotum* as largely due to mishaps in transmission, whereby sections were lost and displaced. But Arrighetti (1973: 717-721) defends the structure of *Ad Herodotum*, arguing that the repetitions mirror the double treatment of some topics in ΠΦ (which suggests that *Ad Herodotum* reflected the sequence of ΠΦ).

873 Agreement of *Ad Herodotum* and *DRN* should probably be taken as representing the order of ΠΦ. *Ad Herodotum* and *DRN* I agree except for (1) the methodological remarks of *Ad Herodotum* 37(end)-38 (which are comparable to *Ad Pythoclem* 87), (2) τὸ πᾶν ἄξιον τοῦτον ἢν ὁλὸν νῦν ἐστίν, καὶ ἄξιον τοῦτον ἐστιν which comes in 39 in *Ad Herodotum*, but is not treated until *DRN* II 294-307 by Lucretius, (3) the section on the *minima* in *DRN* I 599-634 (below 3.1.2). Woltjer (1877: 11) argues that Epicurus had (1) preliminary remarks on language and methods of interpreting the evidence of senses in ΠΦ I. He thinks Lucretius omitted the first part and inserted what he had to say about canonic in book IV: “quo rursus factum est, ut multa in tribus prioribus libris scripta quarto demum libro perlecto bene intellexi potest”. Sedley (1998: 113) independently makes the same point. It is possible, and perhaps likely, that methodological remarks similar to (1) those in *Ad Herodotum* were the opening topic of ΠΦ I. Sedley (1998: 193) thinks that Lucretius omitted (2) because he did not understand it. Yet the idea appears again in the argument for the eternity of the universe at *DRN* V 359-363. One cannot be certain perhaps that τὸ πᾶν ἄξιον τοῦτον ἢν ὁλὸν νῦν ἐστιν, καὶ ἄξιον τοῦτον ἐστιν did not figure in ΠΦ I. On how *Ad Herodotum* and *DRN* are related, above note 34.
subsections.\(^{874}\) (a) existence, (b) speed of generation and (c) velocity of images. The sequence is inverted to (a), (c) and (b) in *Ad Herodotum*. Sedley (1998: 116) has to explain the discrepancy between the two texts by supposing that Epicurus worked from memory within each topic, although he had looked up the sequence of the topics in \(\Pi \Phi \).\(^{875}\) Given the discrepancies between *Ad Herodotum* and *DRN* II, and the fact that *DRN* has been shown to be closer to \(\Pi \Phi \) than *Ad Herodotum* where the treatment of images is concerned, one cannot assume that *Ad Herodotum* always reproduced accurately the order of \(\Pi \Phi \).\(^{876}\)

Let us now consider *Ad Pythoclem*. The order of topics of *Ad Pythoclem* and that of *DRN* V and VI only corresponds at times.\(^{877}\) It seems clear that *Ad Pythoclem* 88-98 reproduced \(\Pi \Phi \) XI and a part of \(\Pi \Phi \) XII (Arrighetti 1975: 43). However the proof of the origin, shape and mortality of the world comes ahead of astronomy in *Ad Pythoclem*, but after it, as far as we can tell, in \(\Pi \Phi \).\(^{878}\) *Ad Pythoclem* omits

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\(^{874}\) Sedley (1998: 111-112) argues convincingly against Arrighetti (1973: 580) that the \(\epsilon \iota \omega \omega \lambda \alpha \) took up only part of the book, finding support in the *scholium* to *Ad Herodotum* 73, according to which Epicurus defined \(\chi \rho \omicron \nu \omicron \varsigma \) as \(\iota \iota \omicron \omicron \tau i \varsigma \mu \nu \iota \tau \omega \omicron \alpha \) in \(\Pi \Phi \) II (above pages 223-225).

\(^{875}\) It seems worth pointing out that, just as *Ad Herodotum* does not have a separate section proving the fineness of images, so Epicurus’ summary of the account of images at the end of \(\Pi \Phi \) II does not mention fineness of images as a separate topic (Sedley 1998: 112).

\(^{876}\) According to Sedley *Ad Herodotum* reproduced \(\Pi \Phi \) up to book XIII (with the exclusion of XI, XII and parts of XIII).

\(^{877}\) The order of topics corresponds fairly well at the start of the letter (except for some understandable omissions): 88-90b—*DRN* V 91-508/91—omitted/92-93—*DRN* V 509-533/omitted—534-563/93—omitted/94-98a—*V* 575-770. Arrighetti (1975: 42) explains the fact that *DRN* V 91-508 are not very close to the treatment in the letters by supposing that Lucretius altered the disposition he found in \(\Pi \Phi \).

\(^{878}\) Arrighetti 1975: 39-41.
altogether the origin of civilisation and language, not surprisingly since the work is
dedicated to μετέωρα. Especially striking is the fact that Ad Pythoclem treats
clouds in chapter 99, before thunder, lightning and thunderbolts. It cannot be,
therefore, that both DRN VI and Ad Pythoclem reproduce the sequence of topics
found in ΠΦ on cosmology, astronomy and meteorology. Again it is certainly
conceivable that DRN, rather than Ad Pythoclem, preserves the order of ΠΦ. The
fact that DRN V 534-563 treats the μονή of the earth, which is discussed in ΠΦ XI
but is omitted in Ad Pythoclem may point in this direction.

Arrighetti (1975: 41) notes that Ad Herodotum 73b and DRN V 91-508 agree
in having an anti-Platonic focus against Ad Pythoclem 88b-90, where the polemic is
geread rather against the early atomists. Arrighetti explains this by suggesting that
the discussion in Ad Pythoclem 88b-90 reflects the fact that Epicurus came back to
the topic in ΠΦ, with a different polemical intent. He thinks that the anti-Platonic
sections of Ad Pythoclem and Ad Herodotum 73b depend on one of the early books
of ΠΦ (perhaps ΠΦ I). This leads Arrighetti (1975: 43) to endorse Usener’s insight
that Epicurus similarly treated astronomy twice in ΠΦ, and that the ‘double
treatment’ of astronomy in Ad Pythoclem (88-98 and 111-116) reflects this. The
second account considers not just the sun and the moon, but also the planets and the
stars. Arrighetti (1975: 44-45) argues that the methodology in XI and Ad Pythoclem
is different, which shows that such a methodology was developed when Epicurus
‘came back’ to astronomy in ΠΦ. This leads Arrighetti to tentatively date Ad

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879 Arrighetti 1975: 42.
880 Arrighetti text [26] [42] line 5 and [26] [43] line 16.
881 Arrighetti suggests that Epicurus came back to enquiries into astronomy a second time
because of the influence Eudoxus’ theories may have had on Pythocles.
Herodotum close to 290 B.C. Arrighetti’s theory, if accepted, would show that Epicurus was not simply summarising two or three continuous books of ΠΦ, but his remarks on the subject from the whole of the treatise (i.e. the books he had composed by that date).

Sedley sees it differently. To preserve the correspondence between DRN and ΠΦ, he argues that in Ad Pythoclem Epicurus only followed ΠΦ at times. Sedley (1998: 119-120) agrees with Arrighetti that Epicurus is epitomising ΠΦ XI in Ad Pythoclem 87 to 93, but reckons that he turned to a different source with chapter 94. Sedley tentatively suggests that with the plural ἐν ἄλλοις (Ad Pythoclem 84) Epicurus might be indicating that he drew the material for Ad Pythoclem from more than one source text. I find Sedley’s theory less persuasive than Arrighetti’s.

There is certainly at least a hint, in the case of Ad Pythoclem, as in that of Ad Herodotum, that Epicurus did not produce digests of specific sections of his ΠΦ (or other texts) which reflected exactly the order of topics in those works. Epicurus may have put together the material on a specific topic which was scattered throughout ΠΦ, omitted topics which were treated in the larger works, added topics from different sources and rearranged the order of the material.

882 I am not convinced by the theory, although it seems likely to me that Epicurus would have come back to some topics in his ΠΦ.

883 If one believes with Sedley that ‘size of heavenly bodies’ mentioned as a topic of ΠΦ XI in the scholium to Ad Pythoclem 91 came, as seems natural, just ahead of ‘motions of heavenly bodies’.

884 Sedley (1998: 120, note 68) remarks that similar plurals are sometimes used for a precise citation of a single text.

885 I do not mean by this that the letters are not at all useful as a guide for reconstructing the sequence of topics in ΠΦ.
Abbreviations


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