

Venus as Epicurean Nature: Lucretius' Empedocles at *De rerum natura* 1.1–9

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Abstract: Scholars have long recognized that Lucretius alludes to Empedocles' four-root theory at *DRN* 1.1–5 and 1.6–9. And they have suggested that he, in doing so, shows respect for Empedocles, either as a philosophical predecessor, as a literary predecessor, or as both. I argue that Lucretius, in alluding to Empedocles' four-root theory, deprecates Empedocles' four-root theory. I suggest that Lucretius, employing polemical allusion, makes the argument that Epicurean physical theory gets the constituents of nature correct and that four-root theory does not (1–5) and that Epicurean atomic theory worsts four-root theory as a philosophical competitor (6–9). Thus, Lucretius opens his poem with a fervent endorsement of Epicurean *physiologia*. Lucretius' attack against four-root theory may be read not only as an attack against Empedocles but also as an attack against several prominent philosophical schools that promoted four-root theory.

Keywords: Venus; Empedocles; Epicureanism; Allusion; Metaphor.

One way of reading Epicureanism as a school of thought is to suggest that atoms take the place of the divine.

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Scholars have noted that Lucretius uses a form of argument wherein he alludes to the work of another poet, prose writer, or even literary genre, while positioning himself, often subtly,³ against the idea affirmed in the text to which he alludes. E.J. Kenney did much to explicate the phenomenon, and M. Gale has done much to show how pervasive it is within the *DRN*.⁴ Scholars' recognition of the phenomenon, which goes by many names, is now commonplace.⁵ I shall refer to it as polemical allusion.

For an example of a polemical allusion, I offer *DRN* 3.18–25. In this passage, as I argue elsewhere, Lucretius explains what appears to him when he practices an Epicurean theological visualization technique, and he integrates an allusion to Homer

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³ See Kenney 1970, 372, 390.

⁴ Kenney 1970; Gale 2007.

⁵ Scholars refer to it, for example, as allusive reversal, allusive irony, ideological polemic, polemical correction, and implicit correction. I cite some representative discussions: De Lacy, 1964, 55; Reiche 1971; Hardie 1986, 209–213; Thomas 1986; Edwards 1990; Obbink 1995, 205–206; Gigandet 1997, 209–213; Sedley 1998, 31; Harrison 2002; Trépanier 2007, 261; Gale 2013, 25–50; Gee 2020; Morrison 2020, 168–169, 173; Nethercut 2020, 124–131; Nethercut 2021.

while doing so, even though he, as a proponent of Epicureanism, is antagonistic to Homeric theology.⁶ The passage in question is the following:⁷

apparet diuum numen sedesque quietae,
 quas neque concutiunt uenti nec nubila nimbis
 aspergunt neque nix acri concreta pruina
 cana cadens uiolat, semperque innubilus aether
 integit, et large diffuso lumine ridet.
 omnia suppeditat porro natura, neque ulla
 res animi pacem delibat tempore in ullo.
 at contra nusquam apparent Acherusia templa,

The divine *numen* appears and the gods' peaceful abodes, which neither the winds shake nor clouds soak with showers, nor does the snow congealed with biting frost besmirch them with its white fall, but an ever cloudless sky vaults them over, and smiles with light bounteously from abroad. Moreover, *natura* supplies all that they need, nor does anything gnaw at their peace of mind at any time. But, on the other hand, Acherusian realms never appear.

Lucretius reworks *Odyssey* 6.41–6, Homer's description of Olympus:

ἡ μὲν ἄρ' ὡς εἰπούσ' ἀπέβη γλαυκῶπις Ἀθήνη
 Οὐλυμπόνδ', ὅθι φασὶ θεῶν ἔδος ἀσφαλὲς αἰεὶ
 ἔμμεναι. οὐτ' ἀνέμοισι τινάσσεται οὔτε ποτ' ὄμβρω
 δεύεται οὔτε χιῶν ἐπιπίλναται, ἀλλὰ μάλ' αἴθρη
 πέπταται ἀνέφελος, λευκὴ δ' ἐπιδέδρομεν αἴγλη·
 τῶ ἔνι τέρπονται μάκαρες θεοὶ ἡμᾶτα πάντα.

So saying, the goddess, flashing-eyed Athene, departed to Olympus, where, they say, is the abode of the gods that stands forever. Neither is it shaken by winds nor ever wet with rain, nor does snow fall upon it, but the air is outspread clear and cloudless, and over it hovers a radiant whiteness; here the blessed gods are happy all their days.⁸

The phrase *tempore in ullo* (24) is important for the polemical allusion: Lucretius asserts that 'no thing gnaws at the gods' [sc. the "Epicurean" gods'] peace of mind *at any time*' (23–24). In the section to which Lucretius alludes, however, Homer declares that the gods [sc. the "Homeric" gods] are happy all their days, when at Olympus (τῶ ἔνι, 46).⁹ As Lucretius' *doctus lector* knows, Homer's gods spend a lot of time away from Olympus and, when away from Olympus, are regularly involved in concerns that show that they are not enjoying *ataraxia*.¹⁰ Thus, Lucretius critiques Homer's vision of the divine. Furthermore, given the phrase's Homeric intertext, it is clear that *omnia suppeditat porro natura* (23) is, as part of the polem-

⁶ The example and discussion derive from Eckerman 2019.

⁷ Throughout the essay, text is that of Deufert 2019, and translations are based on those of Bailey 1947.

⁹ See Garvie 1994, 94.

¹⁰ See Kenney 2014, 78.

ical allusion, a jab at Homer's gods who are in need of sacrifice from humans.¹¹ Lucretius disdains traditional religion's supposition that gods need animal sacrifice, and he stresses that Epicurean gods are not in need.¹² The passage carries some bite because Lucretius does not disambiguate Homeric gods from Epicurean gods but appropriates imagery associated with Homeric theology to discuss Epicurean theology.¹³ By capping Homer's vision of the divine (i.e. both by asserting that gods have *animi pax* at all times [Lucretius clarifies that he does not visualize them otherwise] and by insinuating that they are not in need of sacrifice), while integrating Homer's vision of the divine, Lucretius provides a striking polemical allusion.¹⁴

In this essay, I contend that Lucretius uses polemical allusion in two places where it has previously gone unrecognized, at 1.1–5 and 1.6–9. Previous scholars, alternatively, have suggested that Lucretius alludes to four-root theory, in these passages, in order to show respect for Empedocles, either as a literary predecessor, as a philosophical predecessor, or as both.¹⁵ The proem of Book 1 is sometimes considered a non-Epicurean 'purple passage,'¹⁶ but I argue that Lucretius uses it to promote Epicurean doctrine in a fervent manner.¹⁷

I begin by reviewing Lucretius' allusions to four-root theory in the proem. The first set of references to Empedocles' four-root theory occurs in the first five lines:

Aeneadam genitrix, hominum diuomque uoluptas,
 alma Venus, caeli subter labentia signa
 quae mare nauigerum, quae terras frugiferentis
 concelebras, per te quoniam genus omne animantum
 concipitur visitque exortum lumina solis:

Birther of the Aeneadae, pleasure of/for men and gods, nurturing Venus, you who, beneath the gliding signs of the sky, fill the sea that bears ships, you who fill the lands that bear crops, [sc. I call on you] since through you every kind of animate thing is conceived and, having risen up, looks on the light(s) of the sun.

¹¹ Lucretius is not making an assertion about the bodies of gods in supposed non-cognitive intermundia with the phrase *omnia suppeditat porro natura*. Contrast e.g. Kenney 2014, 78; Rist 1972, 149–150.

¹² On sacrifice in the DRN, see Gale 1994, 72; Rider 2019; Gale 2020, 437.

¹³ For this practice, see, e.g., Nethercut 2021, 14, 56 (on Lucretius' engagement with Ennius).

¹⁴ Campbell (2014, 34) too reads this passage in relation to polemical allusion, but he does so, unlike myself, while endorsing the 'realist' interpretation of Epicurean theology.

¹⁵ Following others, D. Furley (1989, 179) has suggested that Lucretius integrates the four roots in order "to pay tribute to the pioneering work of Empedocles," particularly as a philosophical predecessor (for this position, see too, e.g., Bollack 1959, 656–686). Alternatively, D. Sedley has suggested that Lucretius introduces Empedocles' roots in appreciation for Empedocles as a "literary forebear" 1998, 15–34, against Furley specifically at 17 (for this position, see too e.g. Clay 1983, 22–23, 83–95; Trépanier 2004, 38–44; Piazzini 2005, 42–52; Gale 2007, 61–64; Tsouna 2009, 256). More recently, scholars have taken a synthetic approach, suggesting that Lucretius references Empedocles' roots, at 1.1–5 and 1.6–9, in order to note his respect for Empedocles both as a philosophic and as a poetic predecessor. See, with reference to bibliography, Garani 2013, 231; Nethercut 2017, 86; cf. Sedley 2003, 1–12.

¹⁶ See Farrell 2007, 88; Garani 2007, 12.

¹⁷ In this respect, I am in accord with Bignone (1945, 427–443) and Boyancé (1963, 64–68), although we interpret the proem differently.

Empedocles' air/*aether* can be recognized in *caeli* (2). Empedocles' fire can be recognized in *signa* (2), the stars which were presumed to be igneous. Empedocles' water can be recognized in *mare* (3). And Empedocles' earth can be recognized in *terras* (3). Thus, the first three lines provide reference to all four of Empedocles' roots.¹⁸ And fire can be found, again, in line 5 (*lumina solis*). Thus, earth, air/*aether*, fire, and water are demarcated, with fire referenced twice. As noted above, previous scholars have already recognized that Lucretius alludes to four-root theory in these opening lines,¹⁹ but, also as noted above, they suggest that Lucretius does so without making a polemical allusion.

Lucretius again integrates Empedocles' roots in the following four lines:

te, dea, te fugiunt uenti, te nubila caeli
adventumque tuum, tibi suavis daedala tellus
summittit flores, tibi rident aequora ponti
placatumque nitet diffuso lumine caelum.

you, goddess, you the winds flee, you the clouds of the sky [flee] and your arrival; to you the wonder working earth sends up from below sweet flowers, at you the wide stretches of sea smile, and the sky, calmed, shines with light that has been poured out [i.e. from the sun].

Empedocles' air/*aether*, again, can be found in *caeli* (6). Empedocles' earth can be found in *tellus* (7). Empedocles' water can be found in *ponti* (8). Empedocles' fire, again, can be found in *lumine* (9), light deriving from the sun, which was presumed to be igneous; and Empedocles' air/*aether*, once more, can be found in *caelum* (9). As with the previous five lines, scholars have already recognized that Lucretius alludes to four-root theory in these four lines,²⁰ although, again, they have not suggested that polemical allusion is at play.

I should begin by stating that I am in accord with those scholars who have interpreted Venus as a symbol/ metaphor/ allegory for nature in the proem.²¹ It will become apparent below why I do so. Metaphor, as I hope to show, is the best term to employ when discussing Lucretius' use of Venus at the beginning of the proem.²² At 2.655–260, Lucretius avers that it is acceptable to use the names of gods as metaphors for natural phenomena, and, following others, I suggest that he does so

¹⁸ Following Empedocles' practice, Lucretius uses 'worldly manifestations' of the roots (e.g. sea, rain, sun, wind, etc.); cf. Kranz 1944, 91–92; Brown 1984, 158; Garani 2007, 14; Nethercut 2017, 90.

¹⁹ See Clay 1983, 84; Sedley 1998, 17; Garani 2007, 14; Nethercut 2017, at 90, with further references.

²⁰ See Brown, 1984, 45 (hesitantly); Edwards 1989, 107; Sedley 1998, 17; Garani 2007, 14; Nethercut 2017, 90, with further references.

²¹ For reference to scholars who suggest that Venus serves as a symbol/ metaphor/ allegory for nature, see Bailey 1947, 589–590; Ernout and Robin 1962, 2; Asmis 1982, 469; Brown 1984, 41; Catto 1989, 97; Erler 1997, 90; Edwards 1989, 107; Gale 1994, 219–220; Sedley 1998, 16; Gee 2020, 199.

²² For Lucretius' and Epicurus' thoughts on the propriety of the use of metaphor, see, with reference to further bibliography, Taylor 2020, 43–70.

with Venus in the proem.²³ As I shall argue, it is nature in its Epicurean guise that Lucretius calls upon with his invocation to Venus. Nature is a word of polemic for Lucretius, and, in relation to *physiologia*, Lucretius has something specific in mind: atoms and void. Lucretius does not explicitly mention atoms in the proem, but, I contend, we can infer that Venus is a metaphor for atoms at lines 1 through 5 because Lucretius' cohesive imagery leads one to this conclusion. Lucretius will shift the denotation of Venus as the proem progresses.

In relation to metaphorical theory, Lucretius argues that metaphors that employ the signifier and the signified in ways that are thematically apposite are particularly commendable. For example, it is appropriate to call the earth mother because of the generative qualities that the earth shares in common with a mother.²⁴ Thus, we may infer that Lucretius chose Venus to reference atoms because Aphrodite/Venus, in Greco-Roman religion, was a fertility goddess associated with procreation; in this respect, Venus is analogous to atoms, which, assembled in various manners, bring forth novel phenomena.²⁵

With his declaration on the nature of the gods at 1.44–49, Lucretius demands that the reader not interpret the Venus of the proem as a traditional Greco-Roman divinity, and any reader who has interpreted Venus as a traditional Greco-Roman divinity up to line 44 must begin the poem again, looking for a new and, presumably, cohesive interpretation of Venus for the proem.²⁶ Interestingly, Lucretius may not have expected his readers to recognize that Venus may serve as a metaphor for *natura* until they get to lines 44–49 and recognize that they have to return to the proem and seek a non-literal interpretation for Venus. Thus, Lucretius may play with his readers, expecting them first to read Venus as a traditional Greco-Roman goddess and only thereafter to read Venus in a non-literal fashion. Accordingly, we may say that Lucretius integrates 'intentional unclarity' and that, in doing so, he follows the practice of Parmenides, Empedocles, and Heraclitus.²⁷ Several scholars

²³ See Elder 1954, 115. Venus signifies the procreative force of nature in Greco-Roman literature well before Lucretius (for references, see Bailey 1947, 589), and Lucretius refers to *natura* as the rerum creatrix on multiple occasions (1.629, 2.1117, 5.1362). Lucretius gives agency to what we might consider inanimate phenomena throughout the poem (cf. e.g. *rident aequora ponti* [1.8]; *pabula laeta* [1.14], with Brown 1984, 47), and this includes, at the micro level, atoms (for good discussion of the agency of atoms, see Johnson 2013; on Marx and (self)consciousness in atoms, see Asmis 2020). Thus, in a certain respect, it is not surprising that Lucretius calls upon 'inanimate' *natura* in prayer.

²⁴ See 2.991–998, 5.795–796, 5.822–825 with Barnaby 2020, 64–69. Cf. Bailey 1947, 69–70; Brown 1984, 46 on *daedala tellus* (1.7); O'Keefe 2020, 188.

²⁵ For socio-cultural influences on Lucretius' choice of Venus as his figurehead, see e.g. Bailey 1947, 590–591; Elder 1954, 101–102; Ackermann 1979, 185; Grimal 1978, 240; Garani 2007, 40; Konstan 2008, 148–149; Asmis 2015, 52; Farrell 2020, 228–231.

²⁶ See Elder 1954, 98, 100; Clay 1983, 93; Garani 2007, 42.

²⁷ For intentional unclarity in Parmenides, Empedocles, and Heraclitus, see Mansfeld 1995. As Mansfeld remarks, "[Parmenides, Empedocles, and Heraclitus] announce the theme or (part of the) subject of their work in such a way that one can only understand, or hope to understand, what is meant after having studied the whole, or at least all that remains" 1995, 226.

have argued for intentional unclarity in the proem of Book 1 of the *DRN*, although in different respects than do I; nevertheless, I build on their argument here.²⁸ It is no surprise to find Lucretius integrating intentional unclarity, given the remarkable poetic sophistication that scholars have recognized Lucretius to exhibit throughout the *DRN* and given the fact that the proem of Book 1 offers Lucretius the opportunity to put on display his artistry. Even if 1.44–49 do not belong in the proem, as many scholars have argued,²⁹ the reader's need to (re)interpret Venus in the proem as a non-literal divinity remains a given, for, upon several occasions in the course of the *DRN*,³⁰ Lucretius will notify the reader that traditional gods, such as Venus, do not exist, and so the competent reader, sooner or later, will have to return to the proem and seek to make sense of Venus in the proem, in a new manner.

I turn now to the philology upon which this argument is made. I suggest that Lucretius integrates the Empedoclean roots in the opening five lines in such a manner that he stresses that they, as composites of atoms, are *not* the fundamental constituents of nature.³¹ Inferring that Venus is a metaphor for atoms, I contend that Venus is the *genetrix* of the Aeneadae in so far as humans are composites of atoms and would not come to be without atoms,³² and Venus is a pleasure (*voluptas*) for men and gods in so far as Epicureans, according to Epicurean doctrine, take pleasure in studying nature;³³ it is due to the study of nature, according to Epicurean

²⁸ For intentional unclarity/ purposeful misdirection/ deliberate misdirection in Lucretius' proem, see Brown 1984, 43; Trépanier 2007, 267–272; O'Hara 2007, 62–69, with good discussion of Roman poetic analogues. And, relatedly, for 'provisional argumentation', see Nethercut 2021, 118.

²⁹ I think that lines 44–49 are to be preserved. As Friedländer remarks, "these six verses are the systematic culmination of the whole prooemium which without them would miss not alone its poetic unity but also its purpose as a piece of Epicurean doctrine" 1939, 370; cf. Elder 1954, 90, 100, 117. The fact that the lines are repeated later in the poem provides no support against their authenticity here, for repetition is programmatically important in the *DRN* (see Schiesaro 1994, 98–104; O'Keefe 2020, 190). For references to, and discussion of, the debate, however, see e.g. Bignone 1945, 428–430; Bailey 1947, 588, 601–603; Deufert 1996, 32–40 (reaffirmed at Deufert 2018, 4); O'Hara 1998, 73; Sier 1998, 98–99; Rumpf 2003, 74–75; Harrison 2016, 37; O'Hara 2007, 59–61; Butterfield 2020.

³⁰ e.g. 2.167–183, 5.110–194, 1194–1240; and 2.646–51 repeat 1.44–49. Cf. Bailey 1947, 589.

³¹ Lucretius says implicitly here what he says explicitly at 1.740, namely that Empedocles' failure, like that of other non-atomists, lies in misunderstanding the fundamental constituents of nature. Lucretius provides a detailed criticism of the four-root theory at 1.763–829.

³² Contrast Bailey (1947, 590), who sees the first two words of the poem as providing evidence that Venus, at the beginning of the poem, cannot be interpreted without reference to the traditional mytho-religious Venus.

³³ For corroborative evidence see, SV 27=LS 25I; cf. Sharples 1996, 91; O'Keefe 2010, 134; Gale 2020, 442. At I. 136–145, the Lucretian persona connects the study of natura with ataraxia via the phrase *serenas noctes* (therewith see Eckerman 2020; Gale 2020, 443; and Eckerman 2022). *Voluptas* will resonate in various ways for readers who are not approaching Venus as atoms. For good overview discussion of the manners in which *voluptas* may be interpreted, see Elder 1965, 103–106; cf. Rumpf 2003, 78–79. *Voluptas* is a calque of *hedone*, and thus is not too sensuous a term for the contemplation of nature; cf. Elder 1954, 103. On *voluptas*, see too Erlr and Rother 2012.

doctrine, that one rids oneself of superstitions and fears.³⁴ The reference to ‘men’ and ‘gods’ may be interpreted in relation to ‘normal’ Epicureans (i.e. *homines*) practicing Epicureanism and the Epicurean sages (i.e. *dei*) who are so far along in their practice of Epicureanism that they may be considered ‘gods.’³⁵ And Venus may be viewed as a ‘nurturer’ (*alma*, 2), since atoms foster the construction of all composites.³⁶ Lucretius’ use of the verb *concelebrare* corroborates the argument that Venus refers to atoms, for, as Bailey avers (1947, 592–593), “the sense [of *concelebras*] is derived from its primary use of a crowd ‘thronging’ a place, as in ii. 344 *variae volucres laetantia quae loca aquarum concelebrant*.”³⁷ Venus “throng” the sea and the lands because, I contend, Venus is atoms.

This passage contains other instantiations of polemic. As scholars have noted, Lucretius’ use of the compound epithets *navigerum* and *frugiferentis* provides an ‘Empedoclean fingerprint.’³⁸ By asserting that atoms are the fundamental constituents of sea and of land, Lucretius may be seen to be further polemically correcting Empedocles on the fundamentals of nature. Furthermore, the climactic *per te* phrase is polemical: Lucretius argues implicitly that it is through atoms, *not* through the four roots, that all things arise and see the light of the sun;³⁹ and we recognize further polemic in verse 21 (*quae quoniam rerum naturam sola gubernas*), wherein Lucretius asserts that it is Venus ‘alone’ who guides the creation of things.⁴⁰

³⁴ The common supposition that Venus serves as a metaphor for pleasure at the beginning of the poem is unattractive, I think, partially because voluptas is in apposition with Venus in the first line of the poem. Such supposed pleonasm (i.e. pleasure (Venus) is pleasure) would ill befit Lucretius’ sophisticated poetic style. Moreover, as argued here, cohesive systems of imagery should lead us to interpret Venus otherwise. For discussion of the Venus-as-pleasure argument, however, with reference to further bibliography, see, e.g., Gale 1994, 220–222; Volk 2002, 99; cf. Gale 2001, 34–5, Gale 2020, 442.

³⁵ Lucretius calls Epicurus a god at 5.8; therewith see Sellar 1881, 292; Elder 1954, 108; Costa 1984, 50; Gale 2009, 110. On humans becoming ‘gods/equal to the gods’ in Epicureanism, cf. Ep. Men. 135; Diogenes of Oenoanda, fr. 125 (Smith), Trépanier 2007, 264–266; Erler 2014, 1–14; Heßler 2014, 323–332; Butterfield 2018, 225; Dorandi 2020, 37.

³⁶ On *alma*, cf. Giussani 1896, 11; Munro 1928, 21; Bailey 1947, 591–592; Ernout and Robin 1962, 4; Rumpf 2003, 79. The epithet resonates with Empedocles’ epithet for Venus (Ζεῖδωρος, Β151); cf. Munro 1928, 21; Ernout and Robin 1962, 4; Garani 2007, 40.

³⁷ So too e.g. Munro 1928, 22; Garani 2007, 38. For further analysis of *concelebras* in this passage, with reference to previous discussion, see Rumpf 2003, 81–82. Cf. Bailey 1947, 861 (on *concelebrant* at 2.345).

³⁸ Empedocles regularly employs compound adjectives. For discussion, see Sedley 2008, 24–25; Garani 2007, 40. It should be noted, however, that Lucretius’ use of compound adjectives also conjures Ennius (Giancotti 1959, 76; Bailey 1947, 30; Ernout and Robin 1962, 5–6), Pacuvius (Bailey 1947, 592), and other Greek poets (Nethercut 2021, 23). On compound adjectives broadly, see Bailey 1947, 132–134.

³⁹ Asmis too recognizes doctrinal polemic in Lucretius’ *per te*. She interprets it, however, as a jab against Stoic Zeus (1982, 466). As argued here, the polemic is not directed only at the Stoics.

⁴⁰ On *rerum naturam sola gubernas*, see the good comments of Clay 1983, 86. Contrast Bailey, who reads Venus here as a traditional mytho-religious divinity: ‘Venus “guides” nature, because love is the cause of the creation of things’ 1947, 597. Lucretius would not endorse this position since, according to Epicurean theory, there is no such metaphysical force at work in the universe.

Lucretius stresses the primacy of atoms relative to Empedocles' roots in several other passages of the *DRN*. At 1.275–280, for instance, Lucretius uses atoms as substrate to Empedoclean roots in the same way as I suggest that he does in the opening of the poem. At 1.798–817, fire, air, earth, and water are referenced, and Lucretius stresses that these are composites of atoms.⁴¹ I provide 1.820–821 for the sake of a brief example: *namque eadem caelum mare terras flumina solem / constituunt* (“for the same (sc. beginnings [i.e. atoms]) constitute sky, sea, earth, rivers, sun”). So too at 1.1021–1037, Lucretius mentions Empedocles' roots and asserts that they are composites of atoms. At 2.95–104, Lucretius avows the primacy of atoms, while deprecating Empedocles' root-theory via polemical allusion.⁴² At 5.546–564, he does much the same, again with a polemical allusion against Empedocles' roots.⁴³ Thus, on several occasions, Lucretius introduces Empedocles' roots and affirms that they are secondary to atoms (due to being composites of atoms), and he regularly uses polemical allusion to make this point. This corroborates my suggestion, made immediately above, that he does the same at 1.1–5.

I return now to Lucretius' second set of allusions to Empedocles' roots, namely those in lines 6–9. In this passage, Lucretius again conceptualizes Venus in relation to the four roots. I contend, however, that Lucretius changes his imagery.⁴⁴ I suggest both that the imagery is now one of combat and vanquishment and that Lucretius reconceptualizes Venus as Epicurean *natura* broadly construed: the arrival (*adventum*, 7) of Venus (i.e. Epicurean *natura*) puts the Empedoclean roots into a docile state just as a battle places a vanquished soldier into a docile state. ‘Winds’ (6) and ‘clouds of the sky’ (6) flee Venus because, as in the first 5 lines of the poem, Venus stands for the Epicurean physical system and ‘winds’ and ‘clouds of the sky’ reference air within the Empedoclean system: Empedoclean elements flee Epicurean *natura* just as vanquished soldiers flee when routed in battle. I suggest that the earth ‘sends up from below’ (*summittit*, 8) sweet flowers to Venus because the earth not only is literally sending up flowers (according to the ‘surface-level reading’ of the passage) but also (according to the ‘secondary level of signification’), as an Empedoclean root, is in a position of subordination to Venus/ Epicurean *natura*:⁴⁵ like a vanquished, genuflecting soldier ‘sending up’ a hand to a victor in an act of supplication, the Empedoclean root (earth) suffers a demoted position relative to Venus/ Epicurean *natura*. Furthermore, Empedocles' water element (*pontus*) is tranquil ‘*aequora*’ (8) with the arrival of Venus, and Empedocles' air root (*caelum*)

⁴¹ Therewith see Garani 2007, 7.

⁴² Lucretius caps Empedocles, since the ‘roots’ (i.e. substrate material) of rock are atoms and void, not one of Empedocles' elements. On this point, contrast Nethercut 2017, 96–98, but see Nethercut's support for this position at 100.

⁴³ See Nethercut 2017, 98–99.

⁴⁴ Elder too notes a thematic shift in lines 6–9, but he interprets it differently. He suggests that “the major theme of lines 6–9 is on the peace subsequent to generation” (1954, 109). As argued below, I contend that it would be better to say that the major theme of lines 6–9 is pacification.

⁴⁵ On the semantics of *summittit*, cf. OLD s.v., noting especially subsection 4.

has been ‘pacified’ (*placatum*, 9); this makes good sense, I contend, in relation to Lucretius’ imagery of Epicureanism vanquishing four-root theory. The phrase *aequora ponti* (8) is pleonastic, and Lucretius introduces the pleonasm because, evidently, he wants to stress that the ‘Empedoclean sea’ is ‘leveled out’ (*aequora*), like a vanquished soldier, when confronted by Epicureanism.⁴⁶ Moreover, as P. Brown notes, *ridens* ‘consistently suggests tranquility’ in the *DRN*;⁴⁷ thus, we may infer that Lucretius uses *ridens* (8) to connote the “docility” of an Empedoclean element when confronted by Venus/ Epicurean *natura*, in addition to denote ‘smiling’ (i.e. the surface level meaning of the text). In the phrase *diffuso lumine* (9), *diffuso* does not mean ‘spreading,’ as Bailey suggests (1947, 177), but rather ‘having been spread.’⁴⁸ We may infer that Lucretius uses the passive to reference the manner in which the Empedoclean root has been spread out and weakened due to diffusion. In his second capping of Empedoclean roots, here at lines 6–9, Lucretius focuses on Empedoclean roots being put to flight, being pacified, and being docile. With his second set of allusions to the Empedoclean roots, then, Lucretius has Epicurean *natura* worst four-root theory.⁴⁹ Lucretius’ cohesive militaristic imagery assures us that Lucretius is purposefully contrasting the four roots with Venus so as to give Venus the upper hand in relation to the four roots. Lucretius regularly envisions competition between Epicureanism and rival philosophical systems as battle, and I suggest that he is working within that agonistic frame at 1.6–9.⁵⁰ For the sake of a brief example, I cite 1.741, where Empedocles and others crash down when they lose the battle over the constituents of nature: *et graviter magni magno cecidere ibi casu* (“and there the mighty men fell heavily with a mighty fall”).⁵¹

It is noteworthy that we can recognize two discrete sets of images (at lines 1–5 and at lines 6–9) running through two discrete sets of references to Empedocles’ roots, for this too suggests that Lucretius is introducing Empedocles’ roots with a specific goal in mind. Were Lucretius introducing Empedocles’ four-root theory into his poem in order to signify fondness for Empedocles, as scholars have previ-

⁴⁶ Cf. Varro (*De ling. Lat.* VII.23): ‘aequor’ mare appellatum quod aequatum, cum commotum vento non est.

⁴⁷ 1984, 46.

⁴⁸ Cf. Leonard and Smith 1942, 199.

⁴⁹ Elsewhere Lucretius asserts the primacy of atoms relative to Empedoclean roots while, at the same time, using militaristic imagery that subordinates an Empedoclean root to atoms; see 1.210–212 with Brown’s note on subigentes: ‘the military sense of subjugation is... metaphorically appropriate’ (1984, 85).

⁵⁰ For the ‘war’ between Empedocleanism and Epicureanism, see too 5.380–415; therewith cf. Giussani 1896, 102; Montarese 2012, 212–235. See too 1.638: *Heraclitus init quorum dux proelia primus*; therewith cf. Tatum 1984, 82–83; Montarese 2012, 18–212. For Lucretius’ polemical satire made against philosophical opponents, see 1.919–920, where Epicurean atoms laugh at the worsted theory of Anaxagoras; therewith see Gellar-Goad 2020, 150–151. Note too Holtsmark 1968; Kollmann 1971, 83; Volk 2002, 70 (with further bibliography); Taylor 2020, 78–82. The imagery of victorious atoms occurs also at 1.486 (*nam solido vincunt ea [sc. primordia] corpore demum*).

⁵¹ On the military imagery, see Brown 1984, 163.

ously suggested, we should not expect to find two discrete sets of cohesive imagery wherein we may recognize polemical allusion against four-root theory. Of course, this is not to say that Lucretius does not have any fondness for Empedocles.⁵² It is only to say that four-root theory is purposefully subordinated to atomic theory at the beginning of Lucretius' Epicurean poem. This comes as no surprise since Lucretius' poem is a fervent endorsement of Epicureanism. Furthermore, it comes as no surprise to find the 'meaning' of Venus shift from lines 1–5 to lines 6–9 because Lucretius regularly shifts the denotation of his imagery, as scholars have observed;⁵³ and he does so especially with Venus.⁵⁴ Lucretius is teaching his reader a lesson with his shape-shifting Venus: just as atoms, in various contexts, agglomerate to form various composites, so too will Venus, throughout the *DRN*, agglomerate to form variously in various textual contexts. The fact that Venus can be seen to be used as an antagonist against four-root theory, in two discrete sets of polemical imagery, clarifies for the reader that Venus should not be interpreted as "the" Venus/*Philia* of Empedocles' cosmic cycle. Rather, Lucretius purposefully uses Empedocles' Venus/*Philia* against Empedocles by redeploying Venus as an Epicurean symbol in the poem,⁵⁵ just as, I suggest, Lucretius redeploys the Empedoclean roots against Empedocles in the poem.

But let me return to *natura*. Lucretius uses Venus to conceptualize Epicurean *physiologia* partially because divinities had already been used to reference constituents of nature within the Greek philosophical tradition.⁵⁶ Empedocles himself, for example, asserts (DK 6):

τέσσαρα γὰρ πάντων ριζώματα πρῶτον ἄκουε·
 Ζεὺς ἀργῆς Ἥρῃ τε φερέσβιος ἠδ' Ἄιδωνεύς
 Νήστις θ', ἣ δακρῦοις τέγγει κρούωνωμα βρότειον.

First, hear the four roots of all things: bright Zeus, life-bringing Hera, Aidoneus, and Nestis, who wets the mortal spring with her tears.

Here Zeus seems to be fire, Hera to be Air, Aidoneus to be Earth, and Nestis to be water.⁵⁷ The important point to note, for our purpose, is that Empedocles uses the names of divinities to reference constituents of nature. By using Venus as a

⁵² Cf. I. 716–733. On Lucretius and Empedocles see particularly Jobst 1907; Kranz 1944; Bailey 1947, 28–29; Gale 1994, 59–75; Gale 2001; Garani 2007; Trépanier 2007, 246, fn 4; Montarese 2012, 212–235; Gale 2020, 437–438, with reference to further bibliography.

⁵³ For discussion, see Volk 2002, 93, 116–117, with reference to influential studies on this topic.

⁵⁴ See Ackermann 1979, 181–193; Betensky 1980; Clay 1983, 109; Brown 1984, 42; Nugent 1994, 187–188; Gale 1994, 67–68; Farrell 2016, 43; Shearin 2015, 127–130.

⁵⁵ So too Gale 2020, 438: "the passage can be understood as offering a corrective of, as well as a nod towards, the Empedoclean cycle."

⁵⁶ For the Stoic use of gods as metaphors for elements of nature, see Konstan 2008, 64, with reference to further bibliography; Campbell 2014.

⁵⁷ The exact correspondences are uncertain. For discussion and reference to further bibliography, see Wright 1995, 163–164; cf. Edwards 1989, 107, Mansfeld 1995, 227.

metaphor for atoms at the beginning of the *DRN*, Lucretius follows Empedocles' practice of using divinities to reference constituents of nature.⁵⁸ Furthermore, as noted above, Lucretius co-opts Venus to serve as the figurehead of the Epicurean system; she had previously played an important role for Empedocles in his physical system. As M. Edwards remarks (1989, 107), "whatever other purpose may be served [by Lucretius' introduction of Empedoclean material into the proem of Book 1 of the *DRN*], it must be understood as an attempt to outdo Empedocles in his own style." Lucretius' use of Empedocles' four roots against Empedocles in the proem to Book 1, as I argue is the case in this essay, provides strong evidence in favor of Edwards' assertion, for we see Lucretius purposefully integrating Empedoclean imagery in order to deprecate four-root theory.

Scholars have already observed that Lucretius uses polemical allusions in his proems to further his Epicurean agenda. For example, Lucretius uses polemical allusion against Sappho to structure the proem of Book 2 and polemical allusion against Homer to structure the proem of Book 3 (the polemical allusion discussed above).⁵⁹ And he uses polemical allusion against Empedocles and Cleanthes to structure the proem of Book 1.⁶⁰ I build on this work here, arguing that Lucretius uses polemical allusion against Empedocles, in ways that have previously gone unnoted, to structure the proem of Book 1. Lucretius' polemical allusions against literary predecessors who espoused ethical and natural viewpoints that are antagonistic to Epicureanism add a layer of poetical sophistication to his proems.

Two distinct layers of signification are present in the proem of Book 1. Commenting on choral odes in Greek tragedy, M. Griffith observes (1999, 18), "Sometimes two distinct layers of signification present themselves, with one 'surface' meaning that is clearly primary (i.e. what the Chorus 'mean' to say), while a secondary level of signification suggests ironically, or subversively, something further that we are undoubtedly expected to notice." Such is the case, I contend, in Lucretius' proem. Lucretius' *doctus lector*, having recognized Lucretius' polemical allusions, will always go back and forth between reading the proem in relation to its 'surface-level meaning' and in relation to its 'secondary level of signification,' (i.e. in relation to its metaphors and its polemical allusions) but a surface-level reading, without consideration of the proem's polemical allusions, will no longer be adequate.⁶¹

What does it mean that Lucretius opens his poem with an invocation to Epicurean *natura* under the guise of Venus? As Erler observes (1997, 88), "The depiction of the plague, the analysis of love and further passages obviously serve the more important purpose of internalizing Epicurean teachings and hence of making them practical for the reader." As those readers of the proem who are new to Epicurean-

⁵⁸ See Edwards 1989, 107.

⁵⁹ Book 2: Eckerman 2021; Book 3: Campbell 2014, 33–34; Eckerman, 2019, 289–290.

⁶⁰ Asmis 1982; Campbell 2014; Gale 2020.

⁶¹ Multi-layered textualization is characteristic of much Greek and Roman literature. On 'implied meaning' in Pindar, Plato, Aeschylus, and Isocrates, for example, see Romilly 2012, 49–59.

ism come to recognize that their first interpretation of Venus as a traditional divinity needs revision, they internalize that what lies behind the procreative acts on display in the proem is not the providence of a divinity but the haphazard movement of atoms in void. As the poem progresses, these readers, new to Epicureanism, will come to learn that there are many things that are other than what they seem to be and that *ratio* will lead them to the truth of the matter.⁶² Thus, Lucretius' use of metaphor and polemical allusion at the beginning of the poem serve a didactic function.

Lucretius demands a *doctus lector*, and it is remarkable that he chooses to emphasize this point, through sophisticated uses of imagery, at the very beginning of his poem.⁶³ He demands that the reader recognize that Venus cannot serve as a literal divinity; he demands that the reader become familiar with systems of imagery that appear later in the poem whereby the reader may unlock systems of imagery that appear earlier in the poem; and he demands that the reader recognizes that he is making a shift in relation to his metaphorical conceptualization of Venus between lines 1–5 and lines 6–9. And all of this will have to come about over time, through (re)readings of the proem in relation to other parts of the poem.⁶⁴ In the epilogue to Book 1, Lucretius assures Memmius that he will be enlightened through the practice of learning one thing from another.⁶⁵ Thus, Lucretius may programmatically link this “teaching” in the epilogue to Book 1 to the “puzzle” in the prologue to Book 1, via ring composition, much as he, in other respects, thematically links the end of Book 1 with the beginning of Book 1.⁶⁶ Prepared to unlock the interpretive puzzles that the study of nature affords them, Memmius and other readers who have completed reading Book 1 may return to the beginning of the poem to unlock the meaning of Venus.

In lines 1–20, Lucretius focuses on Venus as a generative force and, at lines 21–49, he links this force to the generation that must be done in relation to the composition of the *DRN*. Lucretius transitions from thinking of Venus generally to the Venus inside his body specifically: he is using hymn to place himself into a

⁶² At verse 11 forward, Lucretius moves from thinking of Venus as atoms (and as Epicurean system [lines 6–9]) to thinking of Venus as volitive force; of course, these two naturae (atoms and volitive force) are not discrepant in Epicurean thought (see, e.g., Johnson 2013), and there may be a cohesive argument running throughout the proem with regard to Lucretius' ‘Venuses’. It is outside the confines of this essay to consider how Lucretius' ‘Venuses’ in the proem resonate with, and/or against, one another.

⁶³ See Erler 1997, 82. Cf. Conte 1991 (English trans. 1994); O' Hara 2007, 61.

⁶⁴ On rereading the poem in order to make sense of it, see too Courtney 2001, 207–208. For the need of revision and rereading in relation to the interpretation of the whole *DRN*, see Taylor 2020a, 71, 86–87; Taylor 2020b, 72–73; Tutrone 2020, 9–95.

⁶⁵ *Haec sic pernosces parva perductus opella;/ namque alid ex alio clarescet, nec tibi caeca/ nox iter eripiet quin ultima naturai/ pervideas: ita res accendent lumina rebus* (1114–1117). Therewith, see Kennedy 2020, 267–268.

⁶⁶ Cf. Brown 1984, 213: “The description of the world's destruction provides a fine imaginative climax for the book and also a sharp contrast with Venus' creative activities with which it opened.” On ring composition in Book 1, see too O'Rourke 2020b, 114.

tranquil state so that he will have the peace of mind to complete the arduous task of composing the *DRN*. We should link Mars, at least partially, with potentially agitated mind states that Lucretius wants to keep at abeyance to foster composition.⁶⁷ *Suavis* (39), thus, is programmatic, and the goal of the poet is to provide *placidam ... pacem* (39), also programmatic, to the Roman people through the poem that he will offer. Lucretius suggests that he does not have the wherewithal to have mental peace without explicit Epicurean mindfulness practice, cogitation through hymn. With his hymn he is self-therapizing; and, indeed, he is offering himself as a model to his readers, for he will be successful and thereby show his readers how the Epicurean meditation enacted through his hymn may benefit their lives also.

Lines 44–49 should not be excised from the text.⁶⁸ In the proem, Lucretius enacts a hymn that activates the mental peace to effect composition, and he contemplates the nature of the divine therein, especially the divine within his own body. For Lucretius and the Epicureans, the divine is, at least partially,⁶⁹ a phenomenon of the mind,⁷⁰ and Lucretius’ hymn includes lines 44–49 as Lucretius uses this core precept, a formulation of *Kuria Doxa* 1, in his practice to foster healthful contexts for his work. Thus, *rebus* (49) should be interpreted as anxieties/concerns *vel sim.* rather than as affairs;⁷¹ atoms/*natura* will be present during the affair of composition, but, hopefully, the unproductive anxieties that hinder composition will not. Admittedly, lines 44–49 “feel” peculiar in their immediate surroundings.⁷² This should not be taken as evidence that the lines do not belong in the proem, however. Lucretius wants to end his hymn with a sacred precept, which, much like a block quote in contemporary writing, may upset the flow of the text. Thus, rather than considering the precept clunky in its context, we should consider the manner in which it stands out from the surrounding text and thereby makes the text pulsate

⁶⁷ On Lucretius’ linking of internal and external agitations, see 5.43–44: at nisi purgatumst pectus, quae proelia nobis/ atque pericula tunc ingratis insinuandum! (But unless we purge the mind, what battles and dangers must we get involved in against our will) with Campbell’s important comments and reference to further bibliography (2014, 46). For allegorical readings of Venus and Mars in this passage, see, with bibliography, O’Rourke 2020b, 110–111.

⁶⁸ Cf. Friedlander 1939, 376; Bailey 1947, 603; O’Hara 2007, 62. Although scholars occasionally suggest otherwise (e.g. Butterfield 2020, 34), the enim at line 44 is not a problem. Causal words are regularly used in prayers to mark the reason for prayer while the verb of prayer is understood, and that is the construction that Lucretius uses here. Thus, a verb such as ‘I pray/I hymn’ may be understood before the enim of line 44. Cf. Bailey 1947, 179; Rouse (revised by Smith) 1982, 7 and see e.g., Lucretius’ use of quoniam at 1.4. As Obbink observes (1989, 194–195=1996, 5), these lines make good sense early in the poem since Epicurus seems to have placed theology first in his system. Cf. Obbink 1995, 193.

⁶⁹ On the realist/idealist debate regarding Epicurean theology, see now Tutrone 2021, 89–93, with reference to important recent bibliography. For Lucretius as an idealist, see now Eckerman 2019. For Lucretius as a realist, see now Butterfield 2018.

⁷⁰ See Obbink 1996, 9.

⁷¹ Rebus is a calque of ὀργαῖς and χάρισι in KD 1, agitations and preoccupations that may lead one away from the ataraxia conducive to study.

⁷² Cf. Butterfield 2020, 24.

with the vitality of the precept tradition. It may well be the case that Epicureans integrated such precepts in their hymns regularly. Lucretius presumably suppresses verbs of prayer in his hymn because there is no god outside himself who could respond to his prayer.⁷³ Having prepared himself through hymn, Lucretius may begin the arduous task at hand, the execution of the *DRN*. Lucretius' hymn sits comfortably with what we know of Epicurean approval of pious hymns.⁷⁴

Recognizing that Lucretius introduces Empedocles' roots in order to subordinate them to the Epicurean vision of nature does much to explicate Lucretius' proem. I hope to have shown that, in addition to the surface-level meaning of Lucretius' language in lines 1–5, there is also a cohesive system of polemical imagery privileging atomic theory relative to four-root theory in lines 1–5, and, in corroboration of this argument, I have provided comparanda to demonstrate that Lucretius employs the same imagery elsewhere in his poem, on multiple occasions. I hope also to have shown that there is a cohesive system of imagery in lines 6–9 that focuses on the ability of Epicurean *physiologia* to vanquish four-root theory, and, in corroboration of this argument, I have noted that Lucretius regularly envisions disagreements between philosophical systems as battles. Thus, it is my contention that Lucretius opens the *DRN* with a powerful affirmation of the correctness of Epicurean *physiologia*, stressing the primacy of the Epicurean theory of nature while disparaging four-root theory from two discrete perspectives.⁷⁵ It is worth noting that Lucretius does not break Epicurus' strictures on *saphēneia* (clear expression) in so far as his imagery is transparent, given his cohesive systems of imagery.⁷⁶ Lucretius integrates 'intentional unclarity', providing his readers with the keys to recognize his polemical allusions in the proem only after they have read further into the poem. Given Lucretius' allegiance to Epicurus and his criticism of the four-root theory elsewhere in the *DRN*, it comes as no surprise to find Lucretius introducing his poem celebrating *natura* in its Epicurean guise. Epicureans, in fact, were particularly fond of criticizing Empedocles.⁷⁷ Thus, Lucretius' polemical allusions made against Empedocles' four-root theory at the beginning of the poem as well as elsewhere in the poem sit comfortably with the polemical practice of his own school.

I have argued that Lucretius makes polemical allusions against Empedocles' four-root theory at the beginning of the proem to Book 1. Four-root theory was not

⁷³ For the suppression of prayer in philosophic hymn, see Menander Rhetor 1.337.25–26 with Campbell 2014, 46.

⁷⁴ See Obbink 1995, 207–208.

⁷⁵ Lucretius' *variatio* is noteworthy. On Lucretius' artful *variatio* in his polemical allusions, cf., e.g., Eckerman 2021.

⁷⁶ On *saphēneia*, see DL 10.13 with Obbink 1995, 193.

⁷⁷ See Cicero ND 1.93; Diog. Laert. 10.25; Plut. Adv. Coloten 1123b. Hermarchus, Epicurus' successor, wrote an *Against Empedocles* in 22 books (thereon see Obbink 1988). On Epicurean criticism of Empedocles, cf. Kleve 1978, 64–65; Edwards 1989, 105–106; Garani 2007, 5–6; Trépanier 2007, 246. For a catalog of Epicurean polemics against Empedocles, see Campbell 2003, 167–168.

only associated with Empedocles, however, but also, in various respects, with Plato, Aristotle, the Stoics, and others.⁷⁸ Accordingly, one can ‘open out’, when reading the proem, from seeing polemical allusion against Empedocles specifically, as an early promulgator of four-root theory, to seeing polemical allusion against multiple prominent competing philosophical schools generally. I have focused attention on Empedocles because, when Lucretius develops polemical allusion against four-root theory throughout his poem, he regularly aligns it closely with Empedocles, and, both as others have already well noted and as I have further argued, Lucretius has Empedocles in mind in the proem.⁷⁹ Regardless, we may say that Lucretius opens the poem with a powerful attack not only on Empedocles, but also on anyone who endorsed four-root theory. And, in this respect, polemical allusion addressed against multiple competing systems is particularly appropriate at the beginning of Lucretius’ dogmatic poem. A capacious attack against several philosophical systems is a more apposite move for Lucretius to make at the beginning of his poem than would be a parochial attack against Empedocles *per se*.

Bibliography

- Ackermann, E. 1979. *Lukrez und der Mythos*. Wiesbaden.
- Algra, K. et al. (eds.) 1997. *Lucretius and his Intellectual Background*. Amsterdam.
- Asmis, E. 1982. “Lucretius’ Venus and Stoic Zeus,” *Hermes* 110, 458–70.
- 2015. “Venus and the Passion for Renewal in Lucretius’s *On the Nature of Things*,” in Berressem, Blamberger & Goth (eds) 2015, 41–54.
- 2020. “A Tribute to a Hero: Marx’s Interpretation of Epicurus in his Dissertation,” in O’Rourke (ed.) 2020a, 241–258.
- Bailey, C. 1947. *Lucretius: De rerum natura. Edited, with prolegomena, critical apparatus, translation and commentary*. Oxford.
- Berressem, H., G. Blamberger & S. Goth (eds) 2015. *Venus as Muse: From Lucretius to Michel Serres*. Leiden.
- Betensky, A. 1980. “Lucretius and Love,” *CW* 73, 291–299.
- Bignone, E. 1945. *Storia della letteratura latina*, vol. 2. Florence.
- Bollack, J. 1959. “Lukrez und Empedokles,” *Die neue Rundschau* 70, 656–686.
- Boyancé, P. 1963. *Lucrèce et l’Épicurisme*. Paris.
- Brown, P. 1984. *Lucretius. De rerum natura I*. London.
- Bryan, J., R. Wardy & J. Warren 2018. *Authors and Authorities in Ancient Philosophy*. Cambridge.
- Butterfield, D. 2018. “Lucretius the Madman on the Gods,” in Bryan, J. et al. (eds) 2018, 222–241.

⁷⁸ Cf. Brown 1984, 167–168 on Aristotle and the Stoics.

⁷⁹ Cf. Fowler and Fowler 1997, xxvii.

- . 2020. ‘Critical Responses to the Most Difficult Textual Problem in Lucretius,’ in O’Rourke (ed.) 2020a, 19–39.
- Campbell, G. 2003. *Lucretius on Creation and Evolution: A Commentary on De Rerum Natura Book Five, Lines 772–1104*. Oxford.
- . 2014. “Lucretius, Empedocles and Cleanthes,” in Garani and Konstan (eds) 2014, 26–60.
- Catto, B. 1989. “Venus and Natura in Lucretius: “De rerum natura” 1.1–23 and 2.167–74,” *CJ* 84, 97–104.
- Clay, D. (1983). *Lucretius and Epicurus*. Ithaca.
- Conte, G.B. 1991. *Generi e lettori: Lucrezio, L’elegia d’amore, L’enciclopedia di Plinio*. Milan. Translated into English by Glenn Most (1994): *Genres and Readers: Lucretius, love elegy, Pliny’s Encyclopedia*. Baltimore and London.
- Costa, C. 1984. *Lucretius, De rerum natura V*. Oxford.
- Courtney, E. 2001. “The Proem of Lucretius,” *Museum Helveticum* 58, 201–211.
- Deufert, M. 1996. *Pseudo-Lukrezisches im Lukrez*. Berlin.
- . M. 2018. *Kritischer Kommentar zu Lukrezens De rerum natura*. Berlin/Boston.
- . M. 2019. *Titus Lucretius Carus. De rerum natura*. Berlin/Boston.
- De Lacy, P. 1964. “Distant Views: The Imagery of Lucretius 2,” *CJ* 60, 49–55.
- Dorandi, T. 2020. “Epicurus and the Epicurean School,” in Mitsis (ed.) 2020, 13–42.
- Eckerman, C. 2019. “Lucretius on the Divine: *DRN* 3.17–30, 5.1161–93, and 6.68–79,” *Mnemosyne* 72, 284–299.
- . 2020. “Practicing *ataraxia* at Lucretius’ *De rerum natura* 2.7–8,” *Rheinisches Museum für Philologie* 163, 167–173
- . 2021. “*Ataraxia* Vanquishes *Eros*: Lucretius’ Sappho at *De rerum natura* 2.1–8,” *Mnemosyne* 74, 152–160.
- . 2022. “*Ratio, Aponia, Ataraxia*: On the Proem of Book Two of Lucretius’ *De rerum natura*,” *RhM* 165, 66–74.
- Edwards, M. 1989. “Lucretius, Empedocles and Epicurean Polemics,” *Antike und Abendland* 35, 104–115.
- . 1990. “Treading the Aether: Lucretius, *De rerum natura* 1.62–79,” *CQ* 40, 465–469.
- Elder, J. 1954. “Lucretius 1.1–49,” *TAPA* 85, 88–120.
- Erler, M. 1997. “Physics and Therapy: Meditative Elements in Lucretius’ *De rerum natura*,” in Algra, Koenen & Schrijvers (eds) 1997, 79–92.
- . 2014. “La sacralizzazione di Socrate e di Epicuro,” in Beretta et al (eds) 2014, 1–14.
- Erler, M. & W. Rother (eds) 2012. *Philosophie der Lust. Studien zum Hedonismus*. Basel.
- Ernout, A. & Robin, L. (eds) 1962. *Lucrèce. De rerum natura. Commentaire exégétique et critique*. Paris.

- Farrell, J. 2007. "Lucretian Architecture: The Structure and Argument of the *De rerum Natura*," in S. Gillespie & P. Hardie (eds) 2007, 76–91.
- "Lucretius and the Symptomatology of Modernism," in Lelzra and Blake (eds) 2016, 39–55.
- "Was Memmius a Good King?," in O'Rourke (ed.) 2020a, 219–240.
- Fowler, D. & P. Fowler 1997. "Introduction," in Fowler & Fowler (eds) 1997, xi–xxxviii.
- Fowler, D. & P. Fowler (eds) 1997. Lucretius. *On the Nature of the Universe*. tr. R. Melville, Oxford.
- Friedländer, P. 1939. "The Epicurean Theology in Lucretius' First Proem (Lucretius 1.44–49)," *TAPA* 70, 368–379.
- Furley, D. 1989. *Cosmic Problems: Essays on Greek and Roman Philosophy of Nature*. Cambridge.
- Gale, M. 1994. *Myth and Poetry in Lucretius*. Cambridge.
- 2001a. *Lucretius and the Didactic Epic*. London.
- 2001b. "Etymological Wordplay and Poetic Succession in Lucretius," in Horster & Reitz (eds), 175–191.
- 2007. "Lucretius and Previous Poetic Traditions," in Gillespie & Hardie (eds) 2007, 59–75.
- 2009. *Lucretius. De Rerum natura V*. Oxford.
- 2013. "Piety, Labour, and Justice in Lucretius and Hesiod," in Lehoux et al. (eds) 2013, 25–50.
- 2020. "Lucretius," in Mitsis (ed.) 2020, 430–455.
- Garani, M. 2007. *Empedocles Redivivus: Poetry and Analogy in Lucretius*. New York.
- 2013. "Lucretius and Ovid on Empedoclean Cows and Sheep," in Lehoux et al. (eds) 2013, 233–59.
- Garani, M. & D. Konstan (eds) 2014. *The Philosophizing Muse: The Influence of Greek Philosophy on Roman Poetry*. Newcastle upon Tyne.
- Garvie, A. 1994. *Homer. Odyssey. Books VI–VIII*. Cambridge.
- Gee, E. 2020. "The Rising and Setting Soul in Lucretius, *De Rerum Natura* 3," in O'Rourke (ed.) 2020a, 195–215.
- Gellar-Goad, T. 2020. *Laughing Atoms, Laughing Matter: Lucretius' De rerum natura and Satire*. Ann Arbor.
- Giancotti, F. 1959. *Il prelude di Lucrezio*. Florence.
- Gigandet, A. 1997. "L'interprétation des mythes comme lieu et enjeu de la polémique philosophique dans le *De rerum natura*," in Algra et al. (eds) 1997, 209–213.
- Gigon, O. (ed.) 1978. *Lucrèce*. Geneva.
- Gillespie, S. & P. Hardie (eds) 2007. *The Cambridge Companion to Lucretius*. Cambridge.
- Giussani, C. 1896. *T. Lucreti Cari De rerum natura libri sex*. Turin.
- Grimal, P. 1978. "Le poème de Lucrèce en son temps" in Gigon (ed.) 1978, 233–270.

- Griffith, M. 1999. *Sophocles. Antigone*. Cambridge.
- Lehoux, D., A. Morrison & A. Sharrock (eds) 2013. *Lucretius: Poetry, Philosophy, Science*. Oxford.
- Hardie, P. 1986. *Cosmos and Imperium*. Oxford.
- Harrison, S. 2002. "Ennius and the prologue to Lucretius *DRN* I (1.1–148)," *LICS* 1, 1–13.
- 2016. "Epicurean Subversion? Lucretius's First Proem and Contemporary Roman Culture," in Norbrook, Harrison & Hardie (eds) 2016, 29–43.
- Heßler, J. 2014. *Epikur. Brief an Menoikeus*. Basel.
- Holtmark, E. 1968. "Lucretius and the Fools," *CJ* 63, 260–266.
- Horster, M & C. Reitz (eds) 2005. *Wissenvermittlung in dichterischer Gestalt*. Stuttgart.
- Jobst, F. 1907. *Über das Verhältnis zwischen Lukretius und Empedokles*. Munich.
- Johnson, M. 2013. "Nature, Spontaneity, and Voluntary Action in Lucretius," in Lehoux et al. (eds) 2013, 113–130.
- Kennedy, D. 2020. "Plato and Lucretius on the Theoretical Subject," in O'Rourke (ed.) 2020a, 259–281.
- Kenney, E. 1970. "Doctus Lucretius," *Mnemosyne* 23, 366–392.
- 2014. *Lucretius. De rerum natura. Book III*. 2nd ed. Cambridge.
- Kleve, K. 1978. "The Philosophical Polemics in Lucretius," in Gigon (ed) 1978, 39–71.
- Kollmann, E. 1971. "Lucretius' Criticism of the Early Greek Philosophers," *Studii Clasice* 13, 79–93.
- Konstan, D. 2008. *A Life Worthy of the Gods: The Materialist Psychology of Epicurus*. Las Vegas.
- Kranz, W. 1944. "Lukrez und Empedokles," *Philologus* 96, 68–107.
- Lehoux, D., A. Morrison & A. Sharrock (eds) 2013. *Lucretius: Poetry, Philosophy, Science*. Oxford.
- Lelzra, J. & L. Blake (eds) 2016. *Lucretius and Modernity: Epicurean Encounters Across Time and Disciplines*. New York.
- Leonard, W. & S. Smith 1942. *T. Lucreti Cari De rerum natura libri sex*. Madison.
- Mansfeld, J. 1995. "Insight by Hindsight Intentional Unclarity in Presocratic Proems," *BICS* 1995, 225–232.
- Marković, D. 2008. *The Rhetoric of Explanation in Lucretius' De rerum natura*. Leiden and Boston.
- Mitsis, P. (ed.) 2020. *The Oxford Handbook of Epicurus and Epicureanism*. Oxford.
- Montarese, F. 2012. *Lucretius and His Sources. A Study of Lucretius, De rerum natura I 635–920*. Berlin/Boston.
- Morrison, A. 2020. "Arguing over Text(s): Master-Texts vs. Intertexts in the Criticism of Lucretius," in O'Rourke (ed.) 2020a, 157–176.
- Munro, H. 1928. *T. Lucreti Cari De rerum natura libri sex*. Cambridge.
- Murray, A. & G. Dimmock 1998. *Homer. Odyssey. Books 1–12*. Cambridge, MA.

- Nethercut, J. 2017. "Empedocles' "Roots" in Lucretius' *De Rerum Natura*," *AJP* 138, 85–105.
- 2020. "Lucretian Echoes: Sound as Metaphor for Literary Allusion in *De Rerum Natura* 4.549–94," in O'Rourke (ed.) 2020, 124–139.
- 2021. *Ennius Noster. Lucretius and the Annales*. Oxford.
- Norbrook, D., S. Harrison & P. Hardie (eds) 2016. *Lucretius and the Early Modern*. Oxford.
- Nugent, S. 1994. "Mater Matters: The Female in Lucretius' *De Rerum Natura*," *Colby Quarterly* 30, 179–205.
- Obbink, D. 1988. "Hermarchus. *Against Empedocles*," *CQ* 38, 428–435.
- 1989. "The Atheism of Epicurus," *GRBS* 30, 187–223.
- (ed.) 1995a. *Philodemus and Poetry: Poetic Theory and Practice in Lucretius, Philodemus, and Horace*. Oxford.
- 1995b. "How to Read Poetry about Gods," in Obbink (ed.) 1995a, 189–209.
- 1996. *Philodemus. On Piety. Part 1. Critical Text with Commentary*. Oxford.
- O'Hara, J. 1998. "Venus or the Muse as 'Ally' (Lucretius 1.24, Simon. Frag. Eleg. 11.20 22W)," *CP* 93, 69–74.
- 2007. *Inconsistency in Roman Epic. Studies in Catullus, Lucretius, Vergil, Ovid and Lucan*. Cambridge.
- O'Keefe, T. 2010. *Epicureanism*. Berkeley and Los Angeles.
- 2020. "Lucretius and the Philosophical Use of Literary Persuasion," in O'Rourke (ed.) 2020a, 177–194.
- O'Rourke, D. 2020a. *Approaches to Lucretius. Traditions and Innovations in Reading the De Rerum Natura*. Cambridge.
- 2020b. "Infinity, Enclosure and False Closure in Lucretius' *De Rerum Natura*," in O'Rourke (ed.) 2020a, 103–123.
- Piazzzi, L. 2005. *Lucrezio e i Presocratici: Un commento a De rerum natura 1, 635–920*. Pisa.
- Reiche, H. 1971. "Myth and Magic in Cosmological Polemic," *RhM* 114, 296–321.
- Rider, Z. 2019. "The Failure of Sacrifice in the *De Rerum Natura*," *TAPA* 149, 1–26.
- Rist, J. 1972. *Epicurus. An Introduction*. Cambridge.
- Romilly, Jacqueline de. 2012. *The Mind of Thucydides*. Ithaca and London.
- Rouse, W. 1982. *Lucretius. De Rerum Natura*. Revised by M. Smith. Cambridge, MA.
- Rumpf, L. 2003. *Naturerkenntnis und Naturerfahrung. Zur Reflexion epikureischer Theorie bei Lukrez*. Munich.
- Schiesaro, A. 1994. "The Palingenesis of *De Rerum Natura*," *PCPS* 40, 81–107.
- Sedley, D. 1998. *Lucretius and the Transformation of Greek Wisdom*. Cambridge.
- 2003. "Lucretius and the New Empedocles," *LICS* 2/4, 1–12.
- Sellar, W. 1881. *The Roman Poets of the Republic*. Oxford.

- Sharples, R. 1996. *Stoics, Epicureans and Sceptics: An Introduction to Hellenistic Philosophy*. London.
- Shearin, W. 2015. *The Language of Atoms: Performativity and Politics in Lucretius' De rerum natura*. Oxford.
- 2020. "Sausurre's *cahiers* and Lucretius' *elementa*: A Reconsideration of the Letters-Atoms Analogy," in O'Rourke (ed.) 2020a, 140–153.
- Sier, K. 1998. "Religion und Philosophie im ersten Proömium des Lukrez," *Antike und Abendland* 44, 97–106.
- Tatum, W. 1984. "The Presocratics in Book One of Lucretius' *De Rerum Natura*," *TAPA* 114, 177–189.
- Taylor, B. 2020a. *Lucretius and the Language of Nature*. Oxford.
- 2020b. "Common Ground in Lucretius' *De Rerum Natura*," in O'Rourke (ed.) 2020a, 59–79.
- Thomas, R. 1986. "Virgil's *Georgics* and the Art of Reference," *HSCP* 90, 171–198.
- Trépanier, S. 2004. *Empedocles: An Interpretation*. New York.
- Tsouna, V. 2009. "Epicurean Therapeutic Strategies," in Warren (ed.) 2009, 249–265.
- Tutrone, F. 2020. "Coming to Know the Truth: Distributed Cognition in Lucretius' *De Rerum Natura*," in O'Rourke (ed.) 2020a, 80–100.
- Volk, K. 2002. *The Poetics of Latin Didactic. Lucretius, Vergil, Ovid, Manilius*. Oxford.
- Warren, J. (ed.) 2009. *The Cambridge Companion to Epicureanism*. Cambridge.
- Wright, M. 1995. *Empedocles: The Extant Fragments*. London.