Anderson, Lila
2018 Classics Thesis

Title: Vision through Analogy in Lucretius' De rerum natura:
Advisor: Edan Dekel
Advisor is Co-author: None of the above
Second Advisor:
Released: release now
Contains Copyrighted Material: No

Vision through Analogy in Lucretius' *De rerum natura*

By

Lila M. Anderson

Professor Edan Dekel, Advisor
A thesis submitted in partial fulfillment
of the requirements for the
Degree of Bachelor of Arts with Honors
in Classics

WILLIAMS COLLEGE

Williamstown, Massachusetts
February 11th, 2018

Table of Contents

Introduction

A poem about Epicureanism might seem as unproblematic as a poem about any fervently held ideology. In the English tradition we are familiar with sprawling epics that unapologetically extrude their Christianity through the mold of verse. *Paradise Lost*, Milton's Christian epic about the fall of man, and the *Faerie Queene*, Spenser's allegorical anti-Catholic propaganda poem about a Christian monarch both ostentatiously perform poetry and indoctrination at once.

Epicureanism is a materialist school of thought founded during the Hellenistic era. Its founder vigorously advanced a radical and strikingly modern view that all reality is atoms and void; further separating him from Milton and Spenser is the idea that there is thus no such thing as an immaterial and immortal soul. Epicureanism holds that the gods, if they exist, do not concern themselves with mortal matters. Its adherents ignore these deities in pursuit of a carefree life: they strive instead for a sort of happiness based entirely on the scientific resources we find around us.[1]

Yet despite these drastic differences between Epicureanism and the ideological project at the center of other (e.g., Christian) epics, nothing suggests that Epicureanism cannot offer its adherents a fundamentally similar subject-matter for poetry. Why *not* an epic poem that is about a school of philosophy on the same model as works that promulgate Christian ideologies? So the thinking would go, if one were to pause over such a strange and esoteric question.

---

[1] For an overview of Epicureanism as a philosophy, see Elizabeth Asmis, *Epicurus' Scientific Method* ((Ithaca: Cornell University Press, 1984), especially the Preface.

It would therefore come as a surprise that many have problematized the idea of Epicurean poetry on the grounds that its founding father, Epicurus, actually made explicit his mistrust of the medium in general.[2]

Disagreement persists about the extent of Epicurus' enmity toward the art form. Some think he condemned poetry categorically, others that he was opposed only insofar as it unduly excited the passions (calling it ὄλεθρον, "ruin"[3]).[4] Whatever his actual opinion, it is clear that by Cicero's time, Epicureanism had come to be firmly associated with the total mistrust of the medium.[5]

This means that Lucretius' *De rerum natura*, henceforth referred to as DRN, composed a few years before Virgil wrote the *Aeneid*, might very well have looked like a bit of a paradox in its own time.[6] A six-book-long creature composed in dactylic hexameter, à la Homer, it does not exactly make our prospects of resolving its tension between poetry and philosophy look good. They look even worse we open the poem to find that Lucretius begins with a long hymn to Venus, the goddess of love and fertility—Epicurus' explicit target for scorn.

Despite this often-discussed tension between the DRN's poetic medium and Epicurean subject-matter, it represents a major source for our knowledge of Epicureanism

---

[2] Joachim C. Classen, "Poetry and Rhetoric in Lucretius," in *Transactions and Proceedings of the American Philological Association* 99 (1968): 77.

[3] Volk, Katharina, "The Teacher's Truth: Lucretius' *De rerum natura*" in *The Poetics of Latin Didactic* (Oxford University Press: 2002), 95.

[4] Ibid., 110.

[5] Ibid., 111.

[6] The publication date of the DRN is unclear—it is usually placed between 99 and 55 BC (at any rate, Cicero refers to *Lucreti poemata* in a letter of 54 BC). See Leonard and Smith, *De Rerum Natura: Libri Sex* (Madison, WI: University of Wisconsin Press, 1942), 5-6.

since its discovery.[7] The fact is that Lucretius did successfully write a poem that manages
to be about Epicureanism, whether Epicurus himself would have liked it or not. Still, I
think it is useful to examine the intertextual relationship between Lucretius and his
philosophical role model in order to best understand the former.

Epicurus is an individual whom Lucretius unambiguously sets up as the hero of
his epic poem.[8] Lucretius praises Epicurus for his trailblazing insight into the nature of
reality:

>unde refert nobis victor quid possit oriri,
>quid nequeat, finita potestas denique cuique
>qua nam sit ratione atque alte terminus haerens. (1.75-77)

>From there as a conqueror he tells us what can arise,
>what cannot, and finally by what reason is power limited
>to each thing, and the deeply clinging boundary stone.

Lucretius credits Epicurus, styled as a triumphant *victor*, with promulgating the key to
existence. In contrast to this adulation, I would note that the aspects of Epicureanism with
which Lucretius seems most preoccupied do not always correspond to the doctrines
Epicurus sees fit to discuss in his letters summarizing his belief-system.

Lucretius certainly places an emphasis on imitating or even replicating some of
Epicurus' arguments about the physical underpinnings of reality. Many specific
arguments about how phenomena work are borrowed directly from Epicurus. For
instance, we can trace the individual arguments about how clouds are formed that appear

[7] Allison Sharrock, "Introduction," in *Lucretius: Poetry, Philosophy and Science*, ed. Daryn Lehoux et al. (Oxford University Press, 2013), 1. For instance, in *The Swerve: How the World Became Modern* (New York: W. W. Norton & Company, 2011), Stephen Greenblatt begins its discussion of Epicurean philosophy with Poggio Bracciolini's dramatic uncovering of a DRN manuscript in a German monastery.
[8] Mayer, R. "The Epic of Lucretius." *Papers of the Leeds International Latin Seminar* 6: 35-43.

in the DRN to corresponding passages in Epicurus' *Letter to Pythocles*.[9] Yet in other

ways, Lucretius appears to depart radically from Epicurus in what he emphasizes and

thereby marks out for us as philosophically worthwhile. For instance, Lucretius does not

discuss the division of desires into necessary ones and non-necessary ones, classifications

that Epicurus painstakingly made for his followers in order that they might more easily

guide their lives by the tenets he advocated.[10] Additionally, Lucretius never spends the

lines describing how empirical data can come to qualify as full-blown knowledge (the

criteria of knowledge).[11] Lucretius' project, we can be sure, is not to set Epicurean words

to dogmatic verse, despite his claims of awe and reverence toward Epicurus which are at

times tinged with abjection. Rather, the DRN is a vehicle for Epicurean doctrine that has

been profoundly remolded toward the purposes of its author as both a Roman and a poet.

For Epicurus, the aim of life is the freedom or lack of disturbance (*ataraxia*). He

defines this ultimate good negatively, as a tranquil freedom from disturbances such as

fear of death and excessive awe of the gods.[12] The source of this fear is ignorance of *ta*

adêla, literally "unclear things," things we cannot know about by means of vision and the

other faculties of sense.[13] Any author who honestly calls himself an Epicurean is also

necessarily attempting to help his reader achieve this state.

There is no reason to suppose Lucretius is an exception, as nothing in the poem

contradicts this cardinal teaching of Epicureanism. Indeed, as will become clear

---

[9] Leonard and Smith, *De Rerum Natura: Libri Sex*, 803.

[10] The Letter to Menoeceus contains this doctrine among others in the ethical theory; see *Epicurus: The Extant Remains*, (Oxford: Clarendon Press, 1926), 87-89.

[11] For a longer discussion of the criteria of knowledge, see Chapter Two.

[12] Sharrock, "Introduction," 1.

[13] Asmis, *Epicurus' Scientific Method,* 50.

throughout this thesis, there is ample positive evidence that Lucretius considers his main aim to be that of freeing his reader from fear.

It may be objected that Lucretius also had other motives for writing an epic poem, for instance, literary glory. He boasts that his poetic journey was untrodden by any before him, *avia Pieridum peragro loca nullius ante / trita solo* (1.926-7; 4.1-2). Nevertheless, the DRN's purpose *as it relates to the reader* is to help them achieve a state of *ataraxia*. The basic accord between Lucretius and Epicurus on this central point makes the paradox of an "Epicurean poem" less urgent: at the end of the day, Lucretius and Epicurus want the same thing for us.

Although this paradox is ultimately insoluble with the information we have, a more precise and interesting question emerges from its consideration: how could Lucretius have labelled Epicurus his master, self-importantly taking up his burden of relieving mankind from fear, only to proceed to transmit that revered intellectual tradition in a highly selective and creative manner? Does this not make Lucretius look unthorough and unsystematic in his reporting of Epicureanism? Further, do these attempts at originality not risk inadvertent heresy? This thesis proposes one explanation for how Lucretius can write the genuinely Epicurean didactic poem that he has.

In the first chapter, I describe how Lucretius advances the purpose of his didactic poem by means of a central programmatic metaphor. Through that extended metaphor, the function of the poem is likened to the function of a light source in the way that both relate to the reader. That is, the poem wants us to see it as metaphorically illuminating the aspects of nature that we cannot see through our eyesight alone. It thereby allows these

phenomena to reveal themselves, just as an actual light makes phenomena that were obscure able to be seen as plain as day. Through this metaphor, which is conveyed in the poem at the same time as it is for the poem, we are able to more precisely define the powerful sort of didacticism that Lucretius unleashes in pursuit of the Epicurean aim of freeing the reader from fear. That is: as a didactic poem, the DRN does not mean merely to assert *that* its readers ought not fear. It goes as far as unveiling the world for them so that they might themselves possess knowledge that necessarily dissolves that fear.

In the second chapter, I explore how the empirical Epicurean scientific theory underpins the highly visual method of the poem as it was established by the programmatic metaphor. Epicureanism proposes that there is an innate parallel between our faculty of vision and our faculty of mental understanding, both of which occur through a series of material processes. By prompting us as we read to visualize phenomena we cannot see, the poem can thus *simulate* vision, assisting us to "see" the hitherto unseen parts of the world. Once we know that the more obscure parts of reality that might be causing us unrest are inherently visualizable, we will cease to fear the unknown and subsequently arrive at a state of *ataraxia*.

In the third chapter, I look at select instances of a key Epicurean method of producing in us an image of the invisible: the argument from analogy. By inviting us to picture what fundamentally cannot be seen in terms of what is visible, this kind of argument works to produce an image that approximates sight—important, in an era before the microscope. The produced image, in turn, can work toward the end of dissolving the reader's fear of what is obscure to our actual vision, leading to *ataraxia*.

Chapter One

Imagery dealing with what can best be described as "the visual" permeates the poem. Though it is only one of myriad complex motifs, this one in particular merits special attention for its integral relationship to the DRN's aim of liberating the reader from fear.

I do not intend "the visual" as a category enclosing a fixed set of terms, but rather any figurative language that forms part of a semantic cluster of visual terms and images. This unfixed group includes words and phrases dealing with seeing, blindness, light, darkness, and eyes. It can be extended to include also concepts upon which the visual faculty depends, such as the sun, candlelight, shadow, flame, and night. To clarify, by the semantic cluster of the visual I do not mean imagery in general, even though all imagery derives its effectiveness from our familiarity with the real world it is representing. Rather, my semantic cluster involves imagery that itself treats "visual" matters. This distinction, which may seem a fine one right now, will become clearer throughout the course of this chapter.

I will first call attention to the startling ubiquity of visual language in the DRN while at the same time highlighting some trends in Lucretius' use of concepts belonging to this semantic cluster. Next, I will offer an analysis of its prevalence and its importance for understanding how the poem conceives of itself. Through the proliferation of key visual imagery, Lucretius builds a programmatic metaphor between the poem and natural light. Through the experience of reading the DRN, the reader gains insight into how phenomena described therein are actually worked out in the world without. Specifically,

the poem targets and illuminates phenomena that necessarily cannot be understood through the evidence of the naked eye alone.

Throughout the poem, Lucretius uses a range of words that rely on our prior experiences of vision and sight. Such words are not necessarily *etymologically* related—the are not all words derivatives of, for example, *video*. Rather, for the present purpose, they need only share *conceptual* content. Thus, for example, verbs of perceiving, showing, and sensing might belong just as much as verbs of seeing like *video*.

There can be less obvious members of this semantic cluster, too. For instance, Lucretius often references the organs of sight with the phrase *ante oculos*, drawing attention to the physical activity of looking (e.g. at 1.62, 1.342, 1.998, all in the first book alone). The semantic cluster expands to include even the conditions of visual perception, for instance, the process of our field of vision growing brighter (*ita res accendent lumina rebus*, "thus things kindle lights for things," 1.1117). Sitting as it were on the fringe of the semantic cluster is the deployment of visual language in an eye-catchingly paradoxical or absurd way, such as his discussion of *carmina lucida*, "bright songs" (1.933-34), and *obscura reperta*, "darkened discoveries" (1.136).

It is one thing to point out the ubiquity of words belonging to this grouping. However, though I hope to give a sense of this saturation of "the visual" in the poem as this chapter progresses, an isolated list of examples that belong to various degrees to the category would not be too convincing of my point. This is because the prominence of this semantic cluster in Lucretius could be trivial: perhaps "the visual" is a standard trait of

any imagery-laden Latin poetry and nothing unique to Lucretius. I need to show how visual language in the DRN takes on a highly specific character.

In anticipation of this objection, I will begin with phrases and passages belonging to our semantic cluster that explicitly claim the primary activity of the poem to be prompting the reader to visualize the world. Second, I will discuss key passages that appear to establish a programmatic metaphor for the poem. In this metaphor, the poem is imagined as capable of illuminating the physical events, that is, as something like a light source. By calling the metaphor programmatic, I mean that it establishes the poem's indispensable method through which it accomplishes its central mission with respect to the reader. Third, in considering the poem as a sort of metaphorical light source onto reality, I will examine certain passages that claim to illuminate phenomena in the reader's imagination. The programmatic metaphor is useful because it permits a new understanding of other parts of the poem that are not themselves programmatic in the same way (in that they explicitly the poem's aim).

As Lehoux notes: "Lucretius is much quicker than other Latin scientific authors to invoke vision."[14] This frequent recourse to explanation in terms of vision is most obviously manifest in his use of the word "to see." Lucretius uses *video* with great frequency, in both the active form meaning "to see" and the passive, "to appear, seem, be thought."[15] In total, *video* occurs in all its active forms 226 times, and in its passive form 151 times.[16] The verb occurs especially when Lucretius wishes to invoke our visual

[14] Daryn Lehoux, "Seeing and Unseeing, Seen and Unseen," in *Lucretius: Poetry, Philosophy, Science* (Oxford University Press, 2013), 133.
[15] *Oxford Latin Dictionary*, ed. P. G. W. Glare (Oxford: Oxford University Press, 2012), s.v.
[16] Louis Roberts, *A Concordance of Lucretius* (Agon, 1968), 324-326.

experience. For example, in his discussion of sensation, Lucretius wants to establish that animate objects can be created from matter that is apparently inanimate. He writes that *quarum nil rerum in lignis glaebisque videmus,* "of these things we see nothing in wood or earth" (2.897). Lucretius' main purpose is to relate a fact: the sentence relates the same information as "there is no sensation in inanimate objects." However, this formulation carries with it the added advantage of appealing to our shared sense of sight. Even if a reader has never "seen" or even noted this perfectly ordinary absence, they are immediately given the opportunity to identify with doing so in the "we" of *videmus*. In short, descriptions of phenomena are often couched in terms that highlight the visual faculties that ground our experience of them.

 The less abundant but still frequent appearance of *video* in the passive voice is perhaps even more curious on investigation. Lucretius' use of this verb to introduce visible phenomena seems a verbose or clunky part of his descriptions. He asserts that x "is seen" or "appears" or "seems to," which is on one level rather obvious; these are obviously visual phenomena, for example, *lignea materies in quo genere esse videtur*, "in which kind woody material is seen to be" (6.1061).

But on another level, Lucretius' tendency to couch examples in their inherent visibility is a fittingly Epicurean habit. An integral part of the Epicurean belief system is that all evidence comes from the senses. In fact, Epicurus is famous for holding not merely that sense perceptions are our only means of access to the world beyond ourselves, but that because of the way sensation occurs, sense perceptions necessarily

report the state of affairs beyond us accurately.[17] In light of the senses'

incontrovertibility, Lucretius' insistence on our empirical means of understanding nature

seems more than appropriate.

Likewise, words connoting a lack of sight suggest the importance of the

relationship between vision and reality to Lucretius. Epicurus names everything that

cannot be observed with the same term: *ta adela,* "things that are 'non apparent' or

imperceptible."[18] These must be mediated by scientific inquiry, since we do not have

unmediated knowledge from sense experience.[19] By the construction of this technical

term from the alpha privative and *delon*, "clear or visible," we are asked to conceive of

the object of scientific inquiry in terms of sight. Epicurus draws upon this same semantic

cluster of the visual to talk about anything that is beyond the ken of the eyes.

Sure enough, in Lucretius, the invisibility of some aspects of nature is often

described in terms of shadows, hiddenness, or blindness. For example, Lucretius

describes that which cannot normally be known to humans as existing in "hiding places,"

hailing Venus for her ability to "wind her way into" what is for humans a truth more

difficult to penetrate (*poteris caecasque latebras insinuare*). Phenomena we are incapable

of seeing (and thus understanding) are often described as shadowy; Lucretius bemoans

"in what shadows" our life is spent. It is worth noting that shadowiness, a term in the

semantic cluster of "the visual" and here used to indicate more generally that of which we

are ignorant, fundamentally relies upon our everyday visual experience of no longer

seeing objects when they are in shadow, and are thus invisible.

---

[17] Asmis, *Epicurus' Scientific Method,* 11.
[18] Ibid.., 50.
[19] Ibid., 50.

In fact, the invisible aspects of nature are frequently represented as blind, for example, in phrases about "blind and hidden nature" (*naturam clandestinam caecamque*) and "blind bodies" (*corpora caeca*), atoms that are too small to be seen. The blindness of the atoms seems primarily to refer to our inability to see them, but perhaps also is a reference to the fact that these "bodies" do not sense their way through the void; they rather careen without watching where they are going.[20] Further, blindness seems to gain a moral valence for Lucretius when he laments "the wretched minds of humans, blind hearts!" (*O miseras hominum mentes, o pectora caeca*, 2.14).[21] Lucretius uses words that condemn the lack of vision forms a part of the network of terms in the same semantic cluster as positive visual terms.

Imagery that gains its comprehensibility from its basis in human visuality in some way or another is abundant throughout the poem. As I have shown, these are scattered throughout the poem in order to introduce and discuss content about the world in a way that is reflexively understandable. They form a semantic cluster because each borrows its credibility from the same shared mode of relating to the world: vision. To make the case for the relevance of this semantic cluster to understanding the DRN, I will turn to certain self-referential passages throughout the poem that offer evidence that the poem aims to help its reader "see" hitherto unseeable parts of their world.

Passages that step "outside" the poem in this way are first noticeable because of how they depart from its normal subject matter, ostensibly the elucidation of *natura*. Moments like these still of course form part of linear experience of reading the poem,

---

[20] Daryn Lehoux, "Seeing and Unseeing, Seen and Unseen," 147.
[21] Ibid., 139.

serving as brief interludes in between long stretches of argumentation as well as a means

of aggrandizing the author. But they do more than these things: they also demand that the

reader consider their own holistic experience of that reading. In addition to drawing our

attention to the writer, such passages are working to set up a metaphor between the poem

as capable of "enlightening" the reader and real, actual light that shines upon once-dark

parts of the world in that each allows new understanding. After exploring some of these

passages, I will turn to consider other parts of the poem belonging to our semantic cluster

which make sense in light of this programmatic metaphor. This I hope will further

strengthen the metaphor of the poem-as-light.

One of these programmatic passages appears twice in the poem, once in Books 2

and 3 each. Lucretius declares that sunlight is no longer capable of resolving our

existential fears, like it can dispel childish fears of the dark, but that something else must

step into its role.

> nam vel uti pueri trepidant atque omnia caecis
> in tenebris metuunt, sic nos in luce timemus
> inter dum, nihilo quae sunt metuenda magis quam
> quae pueri in tenebris pavitant finguntque futura.
> hunc igitur terrorem animi tenebrasque necessest
> non radii solis neque lucida tela diei
> discutiant, sed naturae species ratioque. (2.55-61, 3.87-93)

> For just as children tremble and fear everything
> in blind shadows, thus we in the light fear,
> from time to time, things that ought to be feared nothing
> more than what children dread and imagine are about to happen.
> Therefore not the rays of the sun nor the bright spears of day
> must shatter this terror of the shadows of the soul,
> but the aspect and law of nature.

Through a simile, Lucretius identifies the main problem that the poem is endeavoring to solve: the reader's fear of unexplained phenomena that prevents them from achieving peace, which is like children's fear of "all that is in blind shadows" (*omnia caesars in tenebris*) that causes them to tremble. The solution presented to the children's irrational fear of the dark is illumination.

By contrast, the solution to the reader's fear of invisible phenomena is not to bombard these metaphorical shadows with actual rays of sun, but to apply to them the curious *natura species ratioque*, a combination of sight and reason "of Nature" that is not specified further. Lucretius' task is not to preach the benefits of an Epicurean lifestyle to a non-Epicurean audience, as this would do nothing to attack the deep-seated and irrational fear caused by ignorance of *ta adela,* the *caecis...tenebris.* Rather, he aims to attack the root of this problem, ignorance itself. Despite the protestation that light cannot reach as far as adults' ignorance, we are nevertheless encouraged to picture this event as a literal enlightening of the dark.

That Lucretius considers the poem to be metaphorically bringing light to areas of the world that remain dark to our understanding is evidenced by a frequent and striking formula: *in luminis oras*. The image first appears in the proem to Venus, when Lucretius is praising Venus for her generative powers: *nec sine te quicquam dias in luminis oras exoritur, "*without you, nothing rises into the shining borders of light" (1.22). An equivalence is thereby drawn early in the poem between coming into existence and emerging into the light of day. Further, the phrase appears to be an echo of a line in Ennius, also part of a prayer: *tu produxisti nos intra luminis oras*, "it was you who

brought us forth into the shores of light" (*Ann*. 114). Echoes of Ennius tend to lend the poem an noticeably archaic feeling, further emphasizing a phrase that also sticks out due to its unusual meaning.[22] Further, the image of emerging into the light, which we experience at the start of every day, is fitting for the beginning of a poem.

The three-word formula *in luminis oras* proceeds to appear with striking frequency throughout the poem. Almost all of these appearances are situated in contexts of birth and origination, echoes of its original use in the proem to Book 1. The motif initiates a parallel between merely existing and being visible: by existing in the form of atoms and void, objects are inherently visualizable. For instance, during Lucretius' defense of the existence of atoms, he writes "because everything is created from fixed seeds, from hence it is born and goes out into the borders of light," *at nunc seminibus qui certis quaeque creantur/ inde enascitur atque oras in luminis exit* (1.169-70). Soon after, discussing the causes of seasons, he writes "while the seasons are present and life-giving earth safely bears forth tender things out into the borders of light," *dum tempestates adsunt et vivida tellus/tutores teneras effert in luminis oras* (1.178-79). In both cases, the coming together of atoms leads to nature putting her creations out in the open: *nascitur* and *effect* testify to the motion of putting new beings "out" into the borders of light.

The phrase appears again during the discussion of the variety of atomic combinations. According to Lucretius, eunuchs are considered unfit to "bring forth living progeny into the shores of light," *vivam progeniem qui in oras luminis edant* (2.614-617). Again, the image is one of new beings "brought forth" into the mysterious "borders of

---

[22] Leonard and Smith, *De Rerum Natura: Libri Sex*, 201.

light." Later, Lucretius juxtaposes birth and death, imagining a poignant scene where

miscetur funere vagor quem pueri tollunt visentis luminis oras, "mixed with the funeral is

a wailing, which babes raise up looking at the shores of light" (2.576-77). During the

archaeology of Book 5, in a moment of transition, Lucretius prefaces the sections on flora

and fauna by writing *nunc redeo ad mundi novitatem et mollia terrae / arva, novo fetu*

*quid primum in luminis oras / tollere et incertis crerint committere venti*s: "now I go back

to the newness of the world and the soft fields of the earth, [to describe] what first they

decided in the new hatching to raise into the borders of light and what to entrust to the

wayward winds" (5.780-81). Describing his intention to revisit the origin of plant and

animal life, Lucretius once uses the phrase to describe origination.

In a final example, Lucretius discusses the way in which human progress in the

arts brings everything into the light.

> sic unum quicquid paulatim protrahit aetas
> in medium ratioque in luminis erigit oras
> namque alid ex alio clarescere corde videbant,
> artibus ad summum donec venere cacumen. (5.1455-8)
>
> Thus little by little, time drags everything
> into its midst, and reason lifts it up into the shores of light,
> for they saw one thing after another grow clear by intellect
> until they came to the highest pinnacle of arts.

The formula *in luminis oras* makes its last appearance[23] in the poem in a discussion of the

power of the human mind (*ratio*, *corde*) to understand the world, thanks to technological

innovation. With *Paulatim* and *alid ex alio*, we are reminded that illumination is a

gradual process alongside it. This indicates that humans are capable of increasing the

---

[23] Although a passage identical to that at 5.1455-8 did appear before this at 5.1389-92, it is thought to be the result of a scribal intrusion (Leonard and Smith, *De Rerum Natura: Libri Sex*, 759).

reach of "light" by themselves; because of inexorable human progress, *ta adela* eventually become visible.

Aside from the threads of birth and origination shared in its various passages, the unusual meaning of *in luminis oras* makes it noticable. The phrase itself depends upon the image of *ora*, literally a margin, edge or shore. The term's usage in conjunction with *lumen* in Ennius, then Lucretius and later Virgil caused it to mean eventually something like "the land of the living," a metaphor to whose meaning in Virgil Lucretius is probably actively contributing.[24] Overall, the phrase emphasizes the liminality of vision: there is an important distinction between the realms of the visible and the invisible to which we are always subject whenever we use our visual faculty.

The formula *in luminis oras* corresponds to varying degrees of literalness at different points throughout the poem. Sometimes, the phrase is employed in a manner that appears mostly literal, as in the case of babies being born: a profound way to describe emerging from the womb, we can still understand the phrase to describe this particular event itself. Other times, *in luminis oras* is used more metaphorically to discuss origination in general, like during the proem to Venus. And sometimes, the phrase is used to discuss what humans can know. This intimates that their ability to understand the world is limited to the parts of it that they can see, which accords to the Epicurean theories of perception and knowledge. In any case, the phrase foregrounds the visual aspect of whatever it describes as emerging into these "shores of light." It also

---

[24] *Oxford Latin Dictionary*, s.v..

conveniently invites us to linger on its physical beauty, the characteristics that light alone can bring to our attention and that make poetic imagery effective and moving.

For any Epicurean, existence is material and uniform.[25] Lucretius perpetuates this view of existence in the DRN by the way in which he presents phenomena in terms of their inherent visibility. In particular, levels of existence that are beyond seeing due to our limited power of sight operate in patterns that would be familiar to us, if only we could become able to see them. Consequently, his pedagogical task in the poem is to realize for us this visualizability of everything, and crucially, what we cannot see. The poem thus functions in place of a light for phenomena an actual light cannot illuminate. I will now consider key passages where the poem is implicitly likened to a light source. The poem's aspiration is only to reveal what is around us, not to create or change it; it allows the passive experience of taking in sense data to take place.

Lucretius operates within this programmatic metaphor when he encourages his reader to continue reading at the end of the first book, where the discussion of atomic theory winds up in a promise to the reader of the enlightenment to come.

>namque alid ex alio clarescet, nec tibi caeca
>nox iter eripiet, quin ultima naturai
>pervideas. ita res accendunt lumina rebus. (1.1115-17)

>For one thing after another will become illuminated, and
>blind night will not steal away your path, but you will see
>the farthest things of nature. In this way things will kindle
>lights for things.

Just as the human arts allowed the gradual (*alid ex alio*) enlightenment of everything, here Lucretius promises the increasing visibility of the reader's "path" over the course of

---

[25] Hankinson, "Lucretius, Epicurus, and the Logic of Multiple Explanations" in *Lucretius: Poetry, Philosophy, Science,* ed. Daryn Lehoux et al. (Oxford University Press, 2013), 94.

the poem (*iter*). With *quin* followed by the second person subjunctive *pervideas*, Lucretius promises with certainty that the reader will understand the most distant aspects of nature ("you will see"). With the verb in the second person, Lucretius makes clear that *ultima* are what are the farthest relative to the sight of his addressee on her figurative journey through reading the poem. The prefix *per-* often connotes a *mental* sort of sight, solidifying the metaphorical quality of the reader's sight that is Lucretius advertises for the reader at this juncture before the start of the second book.[26]

The final declaration in Book 1, the rather vague claim that "things will kindle lights for things" (*res accendunt lumina rebus*), is not a mere poetic flourish. Rather, it is a philosophically significant claim. The uniformity of nature allows some phenomena (*res*) to aid in the lifting of the mystery surrounding other phenomena (*rebus*), which consists in lighting them up. As I will argue in chapter 3, Lucretius' main argumentative apparatus, the argument from analogy, hinges upon the uniformity of the material universe that is hinted at with cryptic turns of phrase like *res...rebus*.

The programmatic analogy between the poem and a light source, which I have so far sought in the poem's discussions of itself, is at play in a famous passage about dust motes in a sunbeam. As a starting point for helping the reader picture the motion of atoms, Lucretius writes:

> contemplator enim, cum solis lumina cumque
> inserti fundunt radii per opaca domorum:
> multa minuta modis multis per inane videbis
> corpora misceri radiorum lumine in ipso. (2.114-117)

> Consider then, when the lights of the sun and
> the rays, let in, pour throughout the shadows of houses:

---

[26] Don Fowler, *Lucretius on Atomic Motion: A Commentary on De Rerum Natura, Book Two, Lines 1-332* (Oxford University Press, 2002), 173.

> you will see many tiny bodies mix in many ways
> through the void in that very light of the rays.

The verb ordering the reader to "consider" (*contemplator*) is in the future imperative, a form recalling a stern legal document.[27] Though the mundane image of dust Lucretius is describing for us is a normal one that is easily pictured, there is not one such event in particular that all readers are supposed to have in mind: it is just a general description of a phenomenon with which everyone is probably familiar. With *videbis*, Lucretius moves from asking the reader to consider these phenomena in general to declaring to the reader rather more literally that "you will see" bodies moving about within the beams of light after they have pictured the scenario he describes. The transition from a figurative to literal verb of sight, *contemplator* to *videbis*, coincides with the progressively sharper mental image we get as we read. The motes of dust come into focus once they are revealed to clash with one another as the rays of the sun invade the otherwise dark space. The programmatic metaphor of the poem as a light on phenomena like motes of dust in a sunbeam operates in this passage: by casting light on these phenomena *within the scene*, the analogous motion of atoms is illuminated in the sense that we gain an understanding of it.

Lucretius' roles as a craftsman of poetic language and an Epicurean philosopher frequently coincide, and never more than in his use of imagery deployed to illuminate misunderstood phenomena. He posits his task of describing natural phenomena,

> quod superest nunc huc rationis detulit ordo
> ut mihi mortali consistere corpore mundum
> natiuomque simul ratio reddunda sit esse

---

[27] Leonard and Smith, *De Rerum Natura: Libri Sex*, 323.

et quibus ille modis congressus materiai
fundarit terram caelum mare sidera solem
lunaique globum...
(5.64-66)

What is more, now the arrangement of my explanation has
brought me to this point
that an explanation must be offered by me about how the
world consists of mortal body and, at the same time, is
born,
and in what ways that collection of matter
has established the earth, sky, sea, stars, sun
and the globe of the moon.

Lucretius explicitly tasks himself with explaining "in what ways" (*quibus...modis*)

phenomena operate. This obligation is conveyed by *mihi...reddunda sit*, a passive

periphrastic construction which emphasizes the importance of the agent, i.e., Lucretius,

by means of the great separation of the verb and its agent.[28] The very joining of the matter

that composes the heavenly bodies (*congressus materiai)* is the source of such familiar

phenomena as these, not anthropomorphic divine agents who direct them.

Lucretius follows through with the task of demystifying *quibus...modis* matter

gives rise to phenomena when he describes mist rising from the lands and waters at

sunrise:

non alia longe ratione ac saepe videmus,
aurea cum primum gemmantis rore per herbas
matutina rubent radiati lumina solis
exhalantque lacus nebulam fluuiique perennes,
ipsaque, ut interdum, tellus fumare videtur. (5.460-64)

In no different way than we often see,
when at first the early-morning lights of the shining sun
redden over the grass bejeweled with dew,
both the lakes and endless rivers breathe out a cloud

---

[28] Leonard and Smith, *De Rerum Natura: Libri Sex*, 651.

and the very earth, as it sometimes does, seems to let off
smoke.

Epicurean pedagogy doubles as poetry: scientific claims may include vivid imagery

replete with deep colors (*aurea, rubent*). The event of a sunrise is followed by the

steaming of the lakes and rivers, rendering this phenomena visible within the tableau, as

opposed to at night, when no one would be able to see them. Lucretius' care to recreate

the conditions for sight, in this case sunrise, recalls the poem's fundamental aim of

assuring the reader that the world can and must be understood in visual terms at any and

every level.

Later, in his discussion of sublime events, Lucretius seems to promise that we will

cease from fearing an event like an volcanic eruption just by looking at it.

> Quod bene propositum si plane contueare
> ac videas plane, mirari multa relinquas. (6.654-55)
>
> If you should place this before you well, and contemplate it
> clearly, and see it clearly, then you would cease to wonder
> at many things.

The suggestion is seems to be that merely regarding something fearsome can bring about

our understanding of it. Lucretius does claim that vision can produce a cessation of such

emotions, but he surely does not mean that staring at an erupting volcano for a long

enough time will magically cure the reader of fear. Rather, by *videas* and *mirari*,

Lucretius references a mental sort of sight, an understanding of the atomic processes that

produce what appears to be a volcanic eruption. The poem offers different ways of

envisioning the eruption's cause, an understanding of which is followed by *ataraxia*.

In moments like these, flagged by words of sight that we clearly recognize as metaphorical in sense, we can see Lucretius likening the effect of the poem on the mind to an effect as quotidien as that of real light on the eyes. He implies that the mental images that such imagery prompts us to have shares some of the advantages of eyesight, which is a source of incontrovertible evidence for Epicureans. Lucretius subtly reinforces his own credibility as a philosopher by the deployment of what also happen to be rich poetic expressions.

By now, I have described how Lucretius develops the metaphorical relationship between the poem and a light source. Just as real light allows us to physically see the mechanisms at work in some physical phenomena, the poem lets us visualize similar mechanisms at work in other phenomena which we cannot see. As I indicated before, this meta-metaphor between the function of the poem and that of light at the center of the work serves its larger didactic aim. Lucretius' poem is didactic in so far as it stimulates reader's mental faculty of visualization, making the invisible visible in the hopes of enabling them to cease fearing what they do not know.

There is general consensus that Lucretius's poem aims to impart on the reader the tenets of Epicureanism. One scholar even thought that "in many ways, Lucretius' *De rerum natura* appears as the 'ideal' didactic poem."[29] But even if the strong element of didacticism can is recognizable, the particular way in which Lucretius is actually "teaches" at any given moment, as well as the importance of this categorization, remains unspecified.

---

[29] Volk, Katharina, "The Teacher's Truth: Lucretius' *De rerum natura*," 69.

Mayer's interpretation of what it means for the DRN to be didactic holds that while Lucretius included didactic markers, he was first and foremost writing an epic poem in dactylic hexameter. On Mayer's view, the poem merely "preserved some of the formal 'signals' of didactic, such as the address to readers, and the appropriate material, such as the real world" without being fully didactic.[30] For Mayer, despite the appropriate subject matter and the presence of didactic tropes, Lucretius' poem somehow falls short of full membership in the didactic genre.

Mayer's quibble about "signals" seems semantic, if not downright senseless. If a work exhibits all the criteria of a certain generic classification like "didactic," what is the advantage to the scholar of resisting that label?

Volk specifies the poem's didacticism in a way that is *prima facie* more convincing. She identifies the DRN's didacticism as a literary motif, the "teacher-student constellation [that]...is highly developed and crucial to the structure of the poem."[31] For Volk, the DRN is didactic because of plot wherein the narrator instructs Memmius, his (semi-) fictional dedicatee.[32] In other words, the fact that the poem contains a narrative whose protagonist is instructed in Epicureanism is sufficient for Volk to classify the poem as didactic. For Volk, although "Lucretius goes about the conversion of Memmius with great zeal and dedication," he does not seek the conversion of his actual, real-life readers.

---

[30] Mayer, R, "The Epic of Lucretius" in *Papers of the Leeds International Latin Seminar* 6, 35-43.
[31] Volk, Katharina, "The Teacher's Truth: Lucretius' *De rerum natura*," 69.
[32] Ibid., 70.

That didactic plot manifests itself in the poem's references to its own didactic procedures: "Throughout the text, [the narrator] shows himself aware of what has been said before and what is still to come."[33] For example, the oft-noted prevalence of verbs in the first-person plural for Volk encompasses Lucretius and Memmius, but not us.[34] Ultimately, all this amounts to is a didactic motif, a poetic feature like any other, and certainly not the genuine conviction of its readers. Volk's exploration of the conventional didactic label yields a reading that is ultimately quite similar to Mayer's: both interpretations stop short of claiming for the poem the power to instruct a real, live reader.

My interpretation suggests that the teaching is actually taking place between Lucretius and the real live reader, whether that reader be a contemporary of Lucretius, you, or me. The DRN establishes a programmatic metaphor between a real source of illumination, which renders the visible world equally knowable to everyone, and the poem's power of "illumination" by which its reader can visualize phenomena that would otherwise be invisible. This metaphor is not a trite poetic flourish, but rather a careful claim—it makes an Epicurean education of each reader possible in real time. I will discuss how this can be in greater depth in the next chapter.

I arrived at my reading of Lucretius' didacticism by examining the methodology of the poem in pursuit of its aim, which manifests itself, I have argued, in a metaphor for the entire work as it relates to its reader. My reading allows us to take seriously his claim

---

[33] Volk, Katharina. "The Teacher's Truth: Lucretius' *De rerum natura*," 76.
[34] Ibid., 77.

to teach me or you, the subject of *videbis* or *contemplator* whose experience is so foregrounded.

Additionally, my reading offers an explanation for another peculiar feature of the DRN as compared to other Epicurean literature: the conspicuous lack of overt passages about the ethical theory that is traditionally part and parcel of Epicureanism. As a professed member of this philosophical school, Lucretius believes that an individual's understanding that[35] nature operates in fully comprehensible, visualizable (though obviously not actually visible) ways is the key to her liberation from fear. But Epicurean ethical theory was also an important doctrine of the philosophy; for instance, Epicurus developed his distinction between catastematic and kinetic pleasures, which survive in the form of the *epitomai* composed for the experienced Epicurean reader.[36] Despite the intricacy of these recognizable Epicurean doctrines, Lucretius spares no lines on them, implicitly minimizing their importance for his philosophical aim as it relates to the reader.

Because the poem's didactic activity is specified through the device of a programmatic metaphor, similar to a light source insofar as it permits the reader to do something similar to what actual sight would permit, we can explain this odd absence of ethical doctrine. On Epicurean theory, the source of human fear is ignorance; when ignorance is removed, *ataraxia* necessarily ensues. The ethical aim of the poem can be brought about without informing the reader of the ethical code of a practicing Epicurean; scientific explanation alone is enough. To recite theoretical divisions between the

---

[35] Although knowing *how* is not necessarily as important toward the therapeutic goal of the poem. See Hankinson, "Lucretius, Epicurus, and the Logic of Multiple Explanations," 94.
[36] Asmis, *Epicurus' Scientific Method*, 167.

different sorts of desire, for instance, would not instruct the reader about reality in the deeper way that the poem in fact accomplishes. I will describe what this "deeper way" is in the following chapter.

Chapter Two

In chapter one I explored how woven into DRN is a guiding metaphor that points out the poem's didactic method: to help the reader cease fearing the unknown in pursuit of *ataraxia*, the ultimate aim of Epicureanism. Lucretius wants to inculcate in his reader a scientific understanding of those aspects of reality about which we cannot have firsthand knowledge: atomic motion, perception, cloud formation, et al. Further, the way we are to achieve this understanding is analogous to the way we already do achieve our understanding of the world to which we do have access: Lucretius emphasizes through the programmatic metaphor of light our emerging capacity to finally see what has been heretofore invisible.

At the end of the last chapter, I suggested that the presence of language which constructs the programmatic metaphor is more than a grandiose poetic display that is lacking in content. Rather, the pedagogical techniques that Lucretius uses to get us to see the invisible operate on a uniquely Epicurean basis. This natural basis allows Lucretius to fulfill his metaphorical promise that by reading the poem, an inexorable process of illumination overtakes us: *res accendent lumina rebus*—"things kindle lights for things" (1.1117).

The process of helping the reader see what has not yet literally come *in luminis oras* is especially fitting as a technique for an Epicurean poet because of the way in

which visual perception occurs on Epicurean scientific theory. That process relies upon a structural parallelism between how empirical information is processed by our visual and mental faculties, through the eyes and then in the mind. The kind of very strong didacticism that is at play between the poem and its reader—the illumination to which the guiding metaphor of the poem lays claim—is possible thanks to our physiological makeup and the way this makeup dictates how we relate to the events around ourselves. In this chapter, I will discuss Lucretius' account of sensation and the Epicurean theory of the *criteria of truth*. The criteria are the three means of gathering evidence, standards that allow us to come to the truth about the world and are thus integral to Epicureanism as an empirical philosophy.[37]

Curiously, Lucretius never explicitly discusses the criteria anywhere in the poem, even though he describes the process that coincides with the first criterion (sense perception) in detail (4.239-51). I will discuss how the criteria of truth must be understood as propping up the poem's didactic activity, helping Lucretius make good on the promise to provide insight into the unseeable that is as effective toward the expulsion of fear from the mind as any literal illumination would be. The criteria support the poem's didactic activity by enabling the validity of analogy. I will show how Lucretius must build the criteria into his poetry on the basis of this Epicurean method of inference, even if he does not discuss it explicitly. I will end this chapter by discussing how Epicureanism is suited to Lucretius' poetic treatment in a way that not every school of thought would be by virtue of its analogical method.

---

[37] Asmis, *Epicurus' Scientific Method*, 86.

Sense perception, including vision, is an event that Epicureans consider as comprehensible as all other physical processes. Lucretius takes the time to describe how visual perceptions are physically caused by the collision of matter. Devoting time to this process serves the collective purpose of demystifying vision, which is after all a physical process like any other. Also, it affirms the physical foundation of one of the immovable criteria of truth.

> Nunc ea quae dico rerum simulacra feruntur
> undique et in cunctas iaciuntur didita partis;
> verum nos oculis quia solis cernere quimus,
> propterea fit uti, speciem quo vertimus, omnes
> res ibi eam contra feriant forma atque colore.
> et quantum quaeque ab nobis res absit, imago
> efficit ut videamus et internoscere curat;
> nam cum mittitur, extemplo protrudit agitque
> aëra qui inter se cumque est oculosque locatus,
> isque ita per nostras acies perlabitur omnis
> et quasi perterget pupillas atque ita transit. (4.239-49)

> Now the same simulacra of things about which I speak are
> borne everywhere and thrown, scattered, into all directions.
> But since we can perceive through the eyes alone,
> it is thus, that wherever we turn sight, there all
> things strike against it with shape
> and color. And how far each shape is distant from us,
> an image enables us to see, and ensures that we distinguish.
> For when it is sent out, at once it pushes out and drives
> the air that is in between itself and our eyes
> and thus it all slides through our eyeballs
> and, as it were, brushes the pupils and thus goes through.

This passage argues that vision a purely physical process. *Simulacra*, images that emanate from objects, arrive at and strike the eyes. Based solely upon the amount of time Lucretius spends providing for the physicality of sight, vision is supposed to be the most important sense for us to understand. After the explanation of vision, explanations follow

of the remaining three senses: we get an explanation of hearing at 522-614, taste at 615-672, and smell at 673-721. Without going into detail, these remaining senses have a similar explanation: particles strike them, producing sensation. What appear to be five distinct senses are merely different manifestations of one kind of interaction: touch.

The notion that all forms of perception are explicable in the same tactile terms follows from the particular brand of atomism that Epicureans promulgate.[38] Epicureanism is an atomist philosophy holding that anything that exists is either atoms and void, a principle Lucretius expounds on at length (1.418-448). Perceptions, then, can be explained in terms of the interaction of atoms with our sense faculties. In Epicurus, these moments of contact are called *epibolai*, "strikings," a remarkably violent term that emphasizes the clash of matter that must occur during every perception.[39]

Although, as we have seen, the DRN provides for the physical process behind the experience of perception, he does not discuss the classic Epicurean explanation for how the data that have been received by the senses end by qualifying as fear-dispelling knowledge. This relatively superficial account of the theory of perception actually makes sense in light of the kind of audience he has in mind. The uninitiated reader, personified by the poem's dedicatee Memmius, has not assented to Epicureanism, let alone begun to ponder the epistemological complexities of the Epicurean school. As a result, Lucretius' pedagogical method diverges dramatically from the *epitomai* that survive in letters. These

---

[38] Hankinson ("Lucretius, Epicurus, and the Logic of Multiple Explanations," 75) wonders why Epicureans would not be content with any sort of atomism; this is one answer to that question.
[39] Asmis, *Epicurus' Scientific Method*, 124.

outlines of all the doctrines of the school, including its complete account of knowledge, is

geared toward practicing Epicureans.[40]

Nevertheless, I want to argue, the criteria have an important role to play in how

Lucretius does in fact go about trying to accomplish his didactic aim. In Epicureanism,

these are three: perceptions, affections, and presumptions (*aisthesis*, *pathos*, and

prolepsis, respectively).[41] I will briefly describe each of these concepts in order to discuss

how they relate to the project of the DRN.

Aisthesis refers to a direct striking (*epibole*) on one of the five senses by an atom

outside the body. As described in the passage at 4.239-51 quoted above, sight results

from streams of atoms, *eidola*, being emitted from objects and striking the eyes in an

epibole, thereby producing a presentation, *phantasia*.[42] Even when there is a disturbance

in this "eidolic stream," the particles that emanate from every object to produce the

epibole, the *aisthesis* is not untruthful. That is, because the senses are passive and report

phenomena exactly as they strike them, they cannot but report the state of the atoms as

they really are.[43] However, this external striking is only half of an *aisthesis*; a mental

perception must ensue for a thought to result. Mental perceptions are exactly like visual

perceptions except that the *eidola* involved are much finer, and that they strike the mind

instead of the eyes.[44] Together, a sense perception plus a mental perception equals an

aisthesis.

---

[40] Epicurus, *Letter to Herodotus* in *Epicurus' Extant Remains*, ed. Cyril Bailey (Oxford: Clarendon Press, 1926), 19.
[41] Asmis, *Epicurus' Scientific Method*, 87.
[42] Ibid., 107-112.
[43] Ibid., 117.
[44] Ibid., 87.

A *pathos* (affection or feeling) is a pleasure or a pain. Unlike an *aisthesis*, a pathos is an awareness of atomic interaction in one's own body, rather than an awareness of interactions outside.[45] A *pathos* thus always reflects its material cause accurately—a pleasure cannot be illusory. There can be no cases of distortion of inward sensation; both are thought to have been produced by particle contact on the nervous system.

Epicurus introduces the concept represented by the third criterion, preconception or *prolepsis*, with a verb: *eilephenai,* "to have grasped."[46] A *prolepsis*, literally "grasping before," is an initial concept held prior to any actual application of that concept to an individual perception. Diogenes Laertius defines Epicurean *prolepsis* as "something like apprehension or right opinion or a concept or a stored universal thought, that is, a memory of which has often appeared from outside, for example, that man is this sort of thing."[47] Like the other criteria of truth, a *prolepsis* is never false. Prolepsis also plays a role in language: all inquiry begins with an understanding of words as having a fixed referent, which is probably the *prolepsis*.[48] To understand language, we must possess the general concepts to which it refers.

Lucretius never includes an explicit discussion of the criteria of knowledge, even though they are clearly integral to the relationship between us and the world. We might seek insight into this striking omission in a passage where he addresses the problems posed by the task of translating Greek ideas into Latin verse (1.136-39):

> Nec mihi animi fallit Graiorum obscura reperta
> Difficile inlustrare Latinis versibus esse,

[45] Ibid., 167.
[46] Asmis, *Epicurus' Scientific Method,* 22.
[47] Ibid*.,* 22.
[48] A. A. Long, "Aisthesis, Prolepsis and Linguistic Theory in Epicurus" in *Bulletin of the Institute of Classical Studies* 18 (1971), 116.

> Multa novis verbis praesertim cum sit agendum
> Propter egestatem linguae et rerum novitatum.
>
> It does not escape me that it is difficult to throw light upon
> the darkened discoveries of the Greeks in Latin verse,
> particularly when in new words much must be done
> because of the poverty of our language and the strangeness
> of the subject matter.

Lucretius does not attempt to preserve the full technicality of Epicurus' writings, acknowledging that he will have to mediate Epicurus' teachings considerably as he shapes them into the form of Latin poetry. He characterizes these teachings as *obscura reperta*, discoveries that, like the unseen world, must be revealed to readers of his time by the light of the poem. Lucretius attributes this difficulty to Latin's primitiveness, presumably compared to Greek: the difficulty of attempting to render a difficult and highly technical worldview in the relatively crude language of his contemporaries.

Although Lucretius may not make a practice of consistently translating technical terms as found in Epicurus, there are nevertheless discernible patterns in how he conveys their connotations. For instance, while Lucilius essentially transliterates the Epicurean concept of *eidola* into Latin as *idola*, "Lucretius, at any rate, is considerably more subtle. He conveys *eidolon* with a range of words which collectively capture the idea, already present in the Greek, of a painted or sculpted image preserving the surface features of its subject."[49] Distinct concepts can still be traced how those are manifested in subtle ways throughout the poem. Despite the unsuitability of Latin to transmitting Epicurean

---

[49] David Sedley, *Lucretius and the Transformation of Greek Wisdom* (Cambridge University Press, 1998), 35-39.

thought, we can detect still detect how Lucretius finds less obvious though still systematic ways to relate certain elements of the tradition.

Perhaps Lucretius makes so much of Latin's unsuitability for precise explanation in order to grant himself a greater pedagogical freedom. A complete explanation of the criteria of knowledge make sense in the context of one of the letters, whose intended audience is initiated Epicureans needing to reaffirm their belief system. However, such a fine discussion does not attack the root of the more basic problem the reader of the DRN is supposed to face: their ignorance of the physical interactions that compose reality, which naturally leads crippling existential fear. Thus the lack of explanation of a crucial aspect of Epicurean theory accords with the differing functions of these two Epicurean texts.

Further, Lucretius also ends up engaging in a form of *recusatio*: by arguing that Latin is a difficult language in which to represent Epicureanism, he tries to make his own poetic feat—which tries to do just this, and in poetic form, no less—more impressive.

Even though Lucretius does not regurgitate the criteria of truth directly, he still employs the doctrine in his pedagogical strategy. After all, Lucretius presents himself as an avid admirer and follower of Epicurus, whom he lauds as *primum Graius homo* (1.66), the first Greek man to challenge religion, also part of Lucretius' own aim as he seeks to free the reader from fear. On that basis, it makes further sense that Lucretius accepted these criteria of truth and sought to present only evidence that qualified as such, even if he did not lay out this methodological commitment.

Lucretius does not run a school in urban Athens. Rather, he aims to teach his reader about the world at a remove in time and space via poetry. As a result, direct physical evidence in the form of *aisthesis* by which the reader can come to an understanding of the unseen is impossible to produce. Literally showing the reader an object, especially one that is too big or small to be seen anyway, is clearly impossible. Further, the production of a feeling of pleasure or pain is hardly a reliable or consistent way of producing in every possible reader the same learning outcomes.

That leaves one remaining possible criterion, which fortunately fits very well with the DRN's didactic character: *prolepsis*. Lucretius invites the reader to form *prolepseis* through which they grasp a given type of phenomenon in order to quell a later emotional response.

The problem that the DRN aims to solve for its audience, namely their fear of the unseen, stems from the fact that human beings are not structurally equipped to see everything. We do not fear what we understand, and we understand the world on the basis of sensation. Thus to solve the problem, th poem must explain the interactions of matter that produce phenomena whose inner workings is impenetrable by human sight. As part of his discussion of vision, Lucretius explains in Epicurean terms why certain phenomena are not visible, or only imperfectly so. One way such visual unclarity can occur is when *simulacra* (his Latin term of choice for Epicurus' *eidola*) cannot cross the distance between the object from which they emanate and the eye of the beholder:

> Quadratasque procul turris cum cernimus urbis,
> propterea fit uti videantur saepe rutundae,
> angulus optusus quia longe cernitur omnis
> sive etiam potius non cernitur ac perit eius
> plaga nec ad nostras acies perlabitur ictus,

aëra per multum quia dum simulacra feruntur,
cogit hebescere eum crebris offensibus aër.
hoc ubi suffugit sensum simul angulus omnis.
fit quasi ut ad turnum saxorum structa tuantur;
non tamen ut coram quae sunt vereque rutunda,
sed quasi adumbratim paulum simulata videntur. (4.353-63)

When we discern from a distance square towers of a city
It is for this reason that they often seem round:
Because every angle seen from afar is blunted
or rather, it is not seen at all and its blow vanishes
nor does the stroke glide through to our eyes;
because, while simulacra are borne through much air,
The air forces it to become blunt with frequent jostlings.
By this means, every angle alike has eluded our vision.
it happens that the stone piles are viewed as though turned
on a lathe; not nevertheless these things when openly these
things are truly round, but seem represented as a little bit
shadowy.

Not all the *simulacra* make it to the eyes, a function of the distance of the object giving

them off. Lucretius emphasizes the failure of the *simulacra* to make physical contact,

which he described in violent words like *plaga* and *ictus*. These connote the physicality

of the *epibole*, reminding us that sight can be reduced to physical contact. As a result of

the *simulacra*'s failure, the towers in the above passage appear rounded, but *adumbratim*,

in a "shadowy" sort of way. Lucretius distinguishes the corners' apparent roundedness

from actual roundedness by describing them thus. The figurative use of "shadowy" to

mean something closer to "blurry" reinforces my idea from chapter one, that the

dichotomy between visible and invisible is figured primarily as one between light and

shadow—to communicate about what we cannot see, Lucretius often turns to noticeably

visual language.

Optical weakness is actually the result of our distance in space from the object, not a defect in our organs. Cases like this are thus not of much concern for our understanding—the reader now can extrapolate that in order to see that the object actually has sharp corners, they need only decrease the difference between themselves and that object.

But other phenomena that are irrevocably beyond the scale of human eyesight is another story. Understanding how processes like atomic motion underpin irrevocably invisible phenomena might help us actually rationalize away certain fears and superstitions. But how is the poem going to get us to understand these processes in a way that amounts to the certainty granted by seeing them, if they never emerge before our eyes?

The poetic imagery of the DRN replicates real images, becoming *just as valid* as real imagery for the purposes of dispelling our human fears. The big mechanical difference between an actual image and a mental image for an Epicurean is that physically looking at an object yields a particular *aisthesis*, while the mental sort of "sight" provoked by the poem can grant us a general *prolepsis*. This is how the poem is didactically ambitious: as I emphasized in chapter one, Lucretius does not merely want to raise awareness about the pleasantness of the Epicurean lifestyle, impotently deriding those who still fear death as a result of a misunderstanding of reality. Rather, I want to show, a careful reading of his written words actually has the power to dispel that fear.

Lucretius depends upon the Epicurean parallelism between vision and mental "sight" by postulating that a written poem could be effective toward dispelling our fears

about the unseen. For the poem to work, it must prompt us to recall the a familiar

phenomenon. We know these phenomena because, in Epicurean terms, we have had an

aisthesis of them in the course of our everyday experience. An *aisthesis* is accurate

because it is a striking of reality upon the passive senses. Then, extrapolating from this

knowledge, we impute analogous mechanisms to phenomena of which we cannot have

firsthand experience. By doing so, we form a *prolepsis* of things that we will never

actually see with our own two eyes. Even though achieving literal sight is always

impossible as a solution to our ignorance of unseen phenomena, we can still replicate its

fear-dispelling power.

So far, we have seen that *prolepsis* of something invisible might just be possible

where *aisthesis* is not. However, we might still wonder how we can achieve

understanding of one particular unseen phenomenon in terms of some other visible

phenomenon. What permits us to draw any such parallel? It would be quite unhelpful if

Lucretius dogmatically informed us that we ought to picture atoms like dust motes.

Simply because we can imagine this similarity does not necessitate that it does. So, there

must be a good scientific reason for claiming that we should make *that* comparison.

Once again, we can turn in search of an explanation to the Epicurean theory that

underpins the method of the poem but is unelaborated therein. I already examined how

Lucretius builds his pedagogy of illumination one on the foundation of the Epicurean

theory of perception. That didactic method is in turn only fully effective when placed in

the context of Epicurean teachings that are not themselves fleshed out in Lucretius'

work—namely, the premise that seeing something plainly is sufficient to understand it, which in Epicureanism is afforded by the criterion of perception.

Now, the Epicurean argument from analogy reveals itself to be equally important to enable us to draw these parallels between the quotidien seen phenomena and the fear-inducing unseen. As an Epicurean, Lucretius accepts the validity of analogy for making inferences about what is unseen. As A. A. Long writes,

Epicurus rejected deductive reasoning as useless and dialectic as superfluous. But to reject deductive reasoning was not for Epicurus a dismissal of all reasoning. He accepted a principle of empirical *inference* concerning unseen phenomena, and he also held that *certain things which are by nature unseeable*, most notably atoms, can be inferred from *what is visible* by the application of 'analogy' (italics mine).[50]

Argumentation for Epicurus revolved around opening the world up to visualization by his adherents. Long adds that "inference was a subject of lively controversy between later Epicureans and Stoics."[51] The question of analogy was evidently a well-examined and prominent philosophical debate, making the wholeheartedness of Lucretius' commitment to analogical reasoning all the more striking.

Textual evidence upholds the claim that the analogical method was prominent, if not the foremost kind of inference, in Epicurean practice. In the *Life of Epicurus*, Diogenes Laertius writes that *aistheseis* are just as true as *pathoi* (since both share the same, material cause), and that

> ὅθεν καὶ περὶ τῶν ἀδήλων ἀπὸ τῶν φαινομένων χρὴ
> σημειοῦσθαι. καὶ γὰρ καὶ ἐπίνοιαι πᾶσαι ἀπὸ τῶν
> αἰσθήσεων γεγόνασι κατά τε περίπτωσιν καὶ ἀναλογίαν
> καὶ ὁμοιότητα καὶ σύνθεσιν, συμβαλλομένου τι καὶ τοῦ
> λογισμοῦ. (10.32)

---

[50] A. A. Long, "Aisthesis, Prolepsis and Linguistic Theory in Epicurus," 114.
[51] Ibid., 129.

> From this it follows that as regards the imperceptible we
> must draw inferences from phenomena. For all thoughts
> have their origin in sensations by means of coincidence and
> analogy and similarity and combination, reasoning too
> contributing something.[52]

In a fragment of a letter, it appears that Epicurus reproaches some people for failing to appreciate the validity of analogy.

> φέρων τὴν ἐπιστολὴν παρὰ σο[ῦ] καὶ τὸν διαλογισμὸν
> ὃν ἐπεπόησο περὶ τῶν ἀνθρώπων ὅσοι μήτε τὴν ἀναλογίαν
> τὴν κατὰ τὰ φαινόμεν[α ἐ]ν τοῖς ἀοράτοις ο[ὖς]αν
> ἠδύναντο συνιδεῖν μήτε τὴν συμφω νίαν τὴν ταῖς
> αἰσθήσεσιν ὑπάρχουσαν πρὸς τὰ ἀόρατα
> καὶ πάλι[ν] ἀντιμ[α]ρτύρ[η]σιν. (Fragment 49)

> Remembering your letter and your discussion about the
> men who are not able to see the analogy between
> phenomena and the unseen nor the harmony which exists
> between sensations and the unseen and again the
> contradiction...[53]

Epicurus appears to be writing as though "these men" who cannot "see the analogy" are mistaken, and even that analogy amounts to something self-evident. For Epicurus, the unseen (*ta adela*) refers to reality as it can be reduced to the mere interactions of atoms and space, the only sorts of thing that exist.[54] Lucretius' interpretation of the unseen thus includes the atomic explanations of phenomena large and small.

I have noted that Lucretius does not take pains to re-establish every doctrine of Epicureanism per se in his poem. He eschews slavish imitation of Epicurus in favor of more effectively teaching the philosophy to newcomers. This accords with his choice to do Epicurean poetry in the first place, and accepting that his pedagogical and artistic

---

[52] Epicurus, *Epicurus' Extant Remains*, 163.
[53] Epicurus, *Epicurus' Scientific Method*, 132-33.
[54] Cyril Bailey, *The Greek Atomists and Epicurus: A Study* (Oxford: Clarendon Press, 1928), 396.

departure resolves the sticky tension that I described in the Introduction. Nevertheless, his explication remains strictly committed to the bounds of this philosophy. I emphasize this relationship because so much can be discovered about the method of the poem by examining how Lucretius does allow Epicureanism to show itself. In keeping with this tendency, Lucretius never transliterates Epicurus' *analogia*, let alone discuss the method of analogy head-on. Yet as I will discuss in the next chapter, analogy can be traced in the DRN with startling frequency.[55]

Lucretius referred to the analogical method at the end of Book I as the way in which the poem will carry out its mission: *res accendent lumina rebus,* "things will kindle lights for things" (1.1117). This notion depends on the Epicurean doctrine that all matter is composed of atoms without exception, and thus operates according to the same laws. The didactic techniques Lucretius exploits to "shed light," especially the analogical method, are possible thanks to the structure of reality and the mechanism of human perception on the Epicurean theory.

Lucretius' poetic methods are thus uniquely suited to treating the doctrines of Epicurean philosophy. I will explore how this plays out shortly, in the next chapter on the argument from analogy.

One other way to see how teaching Epicureanism in particular meshes well with poetry is by comparing that aptitude to other schools of philosophy. Like the Epicureans, the Stoics believed that all our sense perceptions occur as the result of physical contact on the sense organs from outside us. A perception is described as a *tuposis*, "imprint," on the

---

[55] The observation of the proliferation of analogy in the DRN is due in part to Myrto Garani, *Empedocles Redivivius: Poetry and Analogy in Lucretius* (London: Routledge, 2012).

soul, trading on the metaphor of a stamp on wax.[56] In Epicureanism there is a distinction between sense and mental perception, where the the *epibole* on the mind (*tes dianoies*) is caused by and mimics the *epibole* that had first struck the eyes, with a parallelism resulting between the two parts of an *aisthesis*; the *prolepsis* can bring about through poetic imagery something relevantly similar to what the *aisthesis* brings about through looking, which I have argued is integral to Lucretius' method.

By contrast, Stoicism does not present a similarly apt theoretical perceptual mechanism by which the external world can be simulated for the mind's eye. For the Stoics, a sense perception consists at once of the *tuposis* and our simultaneous assent to it, which does not entail a separate stage like mental perception.[57] Furthermore, sense perception is inseparable from its linguistic expressibility. All sense perception has an incorporeal subsistent, *lekta*, the "articulable content of perception." For Epicureans, a *prolepsis* or initial concept attaches to words, while individual *aisthesis* does not appear to possess anything like *lekta*. By inviting the reader to form instead a *prolepsis* with which he can become conversant about the unseen world, Lucretius exploits these Epicurean attributes.[58]

While Stoics and Epicureans did converge on the point that perception is purely physical, there is a crucial divergence when it comes to the precise mechanics of mental perception. The upshot: Stoicism is not suitable for Lucretius to apply the kind of didactic techniques to its doctrines that Epicureanism does allow. As an Epicurean, Lucretius is

---

[56] Julia Annas, *Hellenistic Philosophy of Mind* (University of California Press, 1992), 73.
[57] Zeno metaphorically illustrates the difference: a hand outstretched corresponds to an appearance, and the hand closing slightly as the mental assent to it (Julia Annas, *Hellenistic Philosophy of Mind*, 75).
[58] Julia Annas, *Hellenistic Philosophy of Mind*, 71-78.

justified in teaching his philosophy in the manner in which he does—using analogies to generate imagery— by the way that same philosophy views the process of acquiring knowledge about the world.

In chapter 1, I argued that Lucretius gives us one main metaphor with which to conceive of the poem. The DRN is likened to a real source of light, its mission to bring light to the dark corners of reality for the reader. This chapter has aimed to explain *how* this might actually be possible for an Epicurean poet. Lucretius molds imagery into analogies, a poetic technique that is well-suited to the way a reader learns about the world. In what follows, I will explore how this process plays out in actual arguments.

Chapter Three

In chapter one, I discussed how Lucretius establishes a programmatic metaphor between the poem and its reader. The poem-as-light metaphor allows us to understand the character of the poem's overall didactic mission: helping the reader see by making the workings of the invisible world appear as self-evident as light makes them appear. Thus, it must be seen as the principal metaphor of the poem. I argued further that this didactic mission is more ambitious than it might initially seem to a casual reader. Instead of merely listing to the reader about the benefits of converting to Epicureanism (freedom from anxiety, etc.), the poem wants to show the world to the reader actively and thereby get at the root of the problem by expelling the reader's ignorance, the cause of their fear.

In chapter two, I sought to demonstrate how the Epicurean scientific framework provides the way for that strong didactic mission to work. The topography of Lucretius' work does not resemble that of a typical Epicurean text. It lacks, for example, passages instructing the reader about some key terms and concepts of Epicureanism that are found in extant Epicurean texts like the Letters. The DRN is built out of cascading descriptions of the natural world, with technical terminology often swapped out for poetic imagery. However, this absence of the typical vocabulary does not necessarily mean that Lucretius does not integrate Epicurean doctrine in other, perhaps less straightforward ways.

For instance, the theories of perception and the criteria of truth are integrated into the way we are taught about the nature of things when we read the poem. The analogical method by which we are instructed is uniquely made possible thanks to the way our perceptive faculties work. By reasoning analogically about what is invisible, we can

imagine it based on the structure of the phenomena to which we have immediate visual access. In light of the poem's Epicurean moorings, we uncovered the source of the poem's power to illuminate the rest of the world. As it stands, then, I have not yet demonstrated how this works out in the individual arguments of the poem. The focus of this chapter will be to trace this process at several points throughout the poem.

The DRN contains cascades of arguments, all providing specific accounts of how particular aspects of the universe work. Some of these I have already alluded to coincidentally in building up my view of the poem's didacticism, for example, the theory of perception. These arguments range over many diverse topics: the shapes and qualities of atoms, the infinite number of worlds, the nature and mortality of the soul, the senses, the mortality of the world, astrological phenomena, meteorological phenomena, and strange terrestrial and biological phenomena, ending with a discussion of disease.[59] In this chapter, I will give an explanation of the form of the argument from analogy before discussing some representative instances and examining how they relate to the larger didactic project of the work.

The argument from analogy was mainstream among ancient philosophers, lacking technology to help readers acquaint themselves immediately with the microscopic (and too-big) worlds.[60] The argument from analogy, similar to the simile or metaphor, consists of a comparison of two things, operating on the premise that because those two things are similar in certain respect (or respects), they must be similar in another (or others). As I mentioned briefly in chapter two, Epicureanism's material view of the universe supports

---

[59] For outlines of the phenomena treated in each of the six book of the DRN, see Leonard and Smith, *De Rerum Natura: Libri Sex*, 197; 308; 418-419; 522; 641-42; 766.
[60] A. A. Long, "Aisthesis, Prolepsis and Linguistic Theory in Epicurus," 114.

this assumption: since all things are composed of atomic building blocks that behave alike, the objects they compose are also alike.

Arguments from analogy compel the reader to extrapolate a new piece of information upon registering the similarity between the two concepts being compared, the separate but inherently comparable "systems." According to Gentner (as quoted by Garani), "'Analogies can be characterized as structure-mappings between complex systems. Typically the target system to be understood is new or abstract and the base system in terms of which the target is described is familiar and perhaps visualisable.'"[61]

In terms of Lucretius' arguments, the target system is normally an unseeable aspect of reality that must be explained. The base system corresponds to quotidien phenomena with which we are familiar by virtue of our status as human beings endowed with eyes. The analogy informs us about the obscure phenomenon (the target system) by inviting us to conceive of it as visually similar to the visible phenomenon (the base system).

Since these arguments are delivered in the guise of hexameter poetry, the base system being described is often crafted of intense poetic imagery. However, this imagery also serves to mask sequences of scientific arguments that form the didactic backbone of the poem. As Garani writes, "in so far as tropes assist him in articulating his scientific analogies, they become an indispensable element of the pedagogical process...Lucretius exploits the inherent potential of literary comparisons and disguises a wide range of

---

[61] Myrto Garani, *Empedocles Redivivus* (London: Routledge, 2017), 23

source domains under the mask of literary 'vehicles,' and of target domains under that of literary 'tenors.'"[62]

The idea that the poem's imagery is deployed to serve an ulterior purpose, specifically a pedagogical one, is thus not a new one. I have gone further to say that we can to explore how the argument from analogy is uniquely effective at accomplishing the poem's didactic objective, thanks to the physiological parallel between the human faculties of visual and mental perception. The notion that Lucretius might be using literary language to disguise what are "really" source and target domains in tropes that are covert arguments from analogy accords with the idea that Epicurean scientific theory is woven inextricably into the fiber of the poem. Though some doctrines are never acknowledged explicitly in the DRN, they can still be excavated if we examine how they subtly show themselves on investigation of Lucretius' pedagogical method.

In order to best explain how this analogical method of inference about the unseen actually operates in the DRN, I will analyze the mechanics of analogical arguments from three different broad categories, looking at precisely how the base system (visible reality) maps onto the target system (its unseen counterpart). The distinction between the following categories is my own; I have made them purely in order to examine some of the different ways in which analogies can work and to tease out their implications. For each category, I have chosen one key example to illustrate it.

The first category of argument invite us to analogize in order to come to conclusions about phenomena that are too small for us to see. The second category is the

---

[62] Myrto Garani, *Empedocles Redivivus*, 24.

argument that leads us to understand phenomena that are too large. Atomic motion and thunderstorms are examples of each respective category, both of which I will discuss. In these cases, the phenomenon to be explained falls beyond the bounds of our senses: it cannot be explained based on any immediate sense data because it is too large or small in scale. It makes sense that Lucretius would treat these two extremes of reality as his target systems in arguments from analogy. These are exactly the sorts of phenomena that are most liable to cause the kind of fear that leads to existential uncertainty and that people tend to attribute to supernatural forces like the gods.

A third and more problematic kind of analogy that occurs in the poem invites us to analogize from our experiences of direct sense perception to *other* everyday experiences. The technique of analogizing about a target that does not technically need explaining to save us from fear might still indirectly serve the poem's pedagogical function. Identifying what analogies like these are doing will help further specify the poem's pedagogical method. For each of these three groups, I will discuss one case to illustrate my larger argument. However, these represent only a fraction of the copious arguments from analogy that emerge within the poem on investigation.

An instance of the first kind of analogy can be found in a famous passage I discussed in the first chapter, where I cited it was evidence of the programmatic metaphor of the poem-as-light. In this analogy, dust particles are presented as a way of arriving at a visualization of how atoms move about in the void.

> Contemplator enim, cum solis lumina cumque
> inserti fundunt radii per opaca domorum:
> multa minuta modis multis per inane videbis

corpora misceri radiorum lumine in ipso,
et velut aeterno certamine proelia pugnas
edere turmatim certantia nec dare pausam,
conciliis et discidiss exercita crebris,
conicere ut possis ex hoc, primordia rerum
quale sit in magno iactari semper inani—
dumtaxat rerum magnarum parva potest res
exemplare dare et vestigia notitiai. (2.114-124)

Consider then, when the lights of the sun and
the rays, having been let in, pour throughout the shadows of houses:
you will see many tiny bodies mix in many ways
through the void in that very light of the rays.
And, as if in endless combat, they give rise
to battles and fights and do not give pause,
kept in motion between frequent unions and breakings-up,
so that you can infer from this, what it is for the beginnings
of things to be thrown about always in the great void—
Insofar as a small thing can give an example
of large things and traces of knowledge.

The target system, which consists of the undetectable motion of atoms, is to be imagined as similar to a phenomenon from the base system of the visible. Just as the dust particles mix in the void, so we can imagine atoms mingling. Further, we are invited to think of the atoms as moving like men in an eternal battle (*aeterno certamine*), clashing violently. Of course, unlike soldiers, atoms do not choose where they fly, but even if the simile does break down the reader's familiarity with the dynamics of a battlefield are still useful in helping them form a mental picture atomic motion. The void itself is the background of the phenomena in both the base and target systems: dust particles and atoms alike move in the empty space, regardless of the differences in scale of each phenomenon. This commonality further helps us relate the two through analogy: the two systems literally share the same setting.

The image we are given of atoms moving about in the void makes intuitive sense, perhaps especially to readers today who are probably struck by just how close the Epicurean model of atomic motion is to the model we are given in school. Coincidence aside, Lucretius' analogy ultimately derives its efficacy from the Epicurean theory of perception he continually exploits. As a result of our previous *aistheseis* of the familiar phenomena of dust motes, we can call this phenomenon to mind at Lucretius' verbal prompting. That coupled with the invitation to picture a phenomenon stimulates a *prolepsis*. This *prolepsis* of a general known phenomenon, brought on by linguistic means, becomes the base system. On that basis, we form a *prolepsis* of the target system. Thus an argument from analogy helps us achieve a mental picture of the target system. Although it may never be visible, it can be visualized. This shared characteristic of all phenomena is what Lucretius can access because of the Epicurean theory of perception.

After laying out the comparison between the analogously related motion of dust and atoms, Lucretius directly comments on the comparability of small things to large. "You" (the reader, implied in *possis*) are capable of understanding little things in terms of big things, but only insofar as such a comparison is possible, *dumtaxat rerum magnarum parva potest res / exemplare dare*. Lucretius acknowledges the fact that the analogical method of enlightenment is not the ideal way of coming to understand the world; of course its data are not as clear and distinct as the data of unmediated sight. After all, analogy cannot give us but spoors of knowledge (*dare et vestigia notitiai*). Yet by making the comparison, he is also implying that this kind of comparison can be effectively made, with potentially life-changing results.

Lucretius' comment on the possibility of analogy resembles a passage in Thucydides about the Battle of Pylos, where the author also intervenes to bring up the reliability of such comparisons when he relates the Battle of Pylos to the Battle of Thermopylae in the *Histories*.

καὶ οἱ Λακεδαιμόνιοι βαλλόμενοί τε ἀμφοτέρωθεν ἤδη καὶ γιγνόμενοι ἐν
τῷ αὐτῷ ξυμπτώματι, ὡς μικρὸν μεγάλῳ εἰκάσαι, τῷ ἐν Θερμοπύλαις,
ἐκεῖνοί τε γὰρ τῇ ἀτραπῷ περιελθόντων τῶν Περσῶν διεφθάρησαν, οὗτοί
τε ἀμφίβολοι ἤδη ὄντες οὐκέτι ἀντεῖχον, ἀλλὰ πολλοῖς τε ὀλίγοι
μαχόμενοι καὶ ἀσθενείᾳ σωμάτων διὰ τὴν σιτοδείαν ὑπεχώρουν, καὶ οἱ
Ἀθηναῖοι ἐκράτουν ἤδη τῶν ἐφόδων. (4.36.3)

And the Lacedaimonias, struck from both sides already and in the same
struggle, to liken something small to something great, as at Thermopylae,
for those men were destroyed when the Persians attacked them on the
path, and already being attacked on both sides no longer held out, but the
few fighting the many withdrew on account of the sickness of their bodies
and hunger, and the Athenians were already victorious over the
approaches.

In the foregoing passage, which is not typically related to the DRN, Thucydides remarks on a comparison between things of unequal amounts of *glory*. Lucretius had remarked on the viability of a fruitful comparison of two things despite their difference in *size*. Whether or not the passage about the dust particles in fact contains any direct Thucydidean influence, the two moments are interestingly similar. Both draw our attention to the comparative leap they are making through analogy before ultimately persisting to make the comparison. In both cases, the authors think the analogies will prove illuminating for the reader. The explicitness of Lucretius' decision to rely upon analogy between great and small, like Thucydides' self-conscious decision to draw a comparison between his subject matter and another episode, reveals that his use of the technique is a meaningful choice. It helps us establish that he has not randomly picked

any vaguely plausible means of argumentation, but that this one is intentional for a specific reason.

On the other hand, the interactions behind phenomena that are too large to be understood through direct visual confrontation also elude sensation to the point of causing fear of nature. Indeed, we are more likely to fear an erupting volcano than the mysterious atomic interactions that cause sensation. One example of a phenomenon Lucretius wants to demystify is the formation of clouds. Lucretius describes this process in four different arguments. The first claims that clouds occur because atoms of cloud are rough, tangling as a result of this texture.

> nubila concrescunt, ubi corpora multa volando
> hoc super in caeli spatio coiere repente
> asperiora, modis quae possint indupedita
> exiguis tamen inter se comprensa teneri.
> haec faciunt primum paruas consistere nubes;
> inde ea comprehendunt inter se conque gregantur
> et coniungendo crescunt ventisque feruntur
> usque adeo, donec tempestas saeua coortast. (6.450-458)
>
> Clouds gather, when many bodies flying
> Collect suddenly in the racetrack of the sky above,
> The rougher ones, though hampered in what they can do
> in strict ways, nevertheless hold compressed together.
> These make small clouds stand together first;
> From here they catch hold together and are borne together,
> And by being conjoined they grow and are borne by the winds
> Continuously to here, where a savage storm has arisen.

With *super in caeli spatio,* Lucretius sets the scene beyond the ken of the eyes. These bodies mingle far above our heads, reminding us of the fact that we cannot see this process and therefore need to imagine it to understand it. Despite this concession, Lucretius' hint that we should picture the atoms in the "arena" of the sky subtly invites us

to analogize between the atoms and animals.[63] By this analogical means, we can form a

prolepsis of cloud formation, just as I detailed above.

Another argument, the third in the set describing cloud formation, posits a

somewhat different explanation for the same phenomenon:

> praeterea permulta mari quoque tollere toto
> corpora naturam declarant litore uestis
> suspensae, cum concipiunt umoris adhaesum.
> quo magis ad nubis augendas multa videntur
> posse quoque e salso consurgere momine ponti.
> nam ratio consanguineast umoribus omnis.
> (6.470-475)
>
> Moreover, clothes hung on the shore prove that nature lifts
> also many bodies from the whole sea,
> when they take up the adherence of water.
> Whereby more, many seem to be able also to rise toward
> the massing of clouds from the salt billow of the sea.

Worthy of note is the way Lucretius links this explanation of cloud formation explicitly

to a quotidien event firmly within the range of our sense perception. Beginning with the

familiar phenomenon of the moistening of clothing that occurs because of ocean spray, he

asks the reader to infer from this process a larger one which cannot be directly witnessed:

atoms of water rising from the ocean to form clouds. We analogize: like the particles that

we can induce have moistened the clothes, the same sort of particles rise to form clouds.

The first explanation dealt with cloud formation by appealing to the "roughness"

(*asperiora*) of the atoms involved, third by inviting us to infer a process on a larger scale.

The ideas behind both explanations are not original and are clearly borrowed directly

from Epicurus's own writings, with embellishment added by Lucretius.[64] Despite the

---

[63] Leonard and Smith, *De Rerum Natura: Libri Sex*, 320: "*spatio*: suggests the racecourse in the Circus."
[64] Leonard and Smith, *De Rerum Natura: Libri Sex*, 803-806.

different routes they take to arriving at explanation for the same phenomenon, they are

not actually incompatible. That is, each argument can be seen as explaining only one

phase of the mysterious phenomenon that is cloud formation: atoms rise from bodies of

water and join into clouds because of their roughness.

Unlike these arguments, the last about cloud formation does not resemble any

appearing in Epicurus.[65] Further, its explanation is compatible with neither the first nor

the third argument in the set. That is, if this argument is accepted as the true one, then the

others can have no place in the process of cloud formation.

> fit quoque ut hunc veniant in caelum extrinsecus illa
> corpora, quae faciunt nubis nimbosque uolantis.
> innumerabilem enim numerum summamque profundi
> esse infinitam docui, quantaque uolarent
> corpora mobilitate ostendi, quamque repente
> immemorabile per spatium transire solerent.
> haut igitur mirumst, si paruo tempore saepe
> montibus tam magnis tempestas atque tenebrae
> coperiant maria ac terras inpensa superne,
> undique quandoquidem per caulas aetheris omnis
> et quasi per magni circum spiracula mundi
> exitus introitusque elementis redditus extat. (6.483-494)

> It happens, too, that to here come into the sky from without
> these bodies, which make clouds and flying rainstorms.
> For I have taught that the number is innumerable and that
> the sum of the abyss is infinite, and I have shown with what
> great speed these bodies fly, and how quickly they tend to
> pass through inexpressible space.
> Therefore it is scarcely wonderful, if often in brief time
> fromn such great mountains storm and shadows overwhelm
> the seas and lands, hanging over them from above, since
> everywhere through all the holes of the aether,
> even as if through the breathing passages of the large world
> around us, there is an entrance and an exit for the elements.

---

[65] Ibid., 806.

Lucretius notes the impossibility of picturing an *innumerabilem numerum* of atoms, but nevertheless asserts his success at imparting the gist of this doctrine on the reader. He asserts another possible explanation for the formation of clouds, which involves the strange doctrine of *spiracula mundi*, the "breathing passages of the world." The analogy between the world and a living creature that breathes allows the formation of the relevant analogy.

All three arguments rely upon the validity of analogy as a way of understanding the unseen world: they are argued on the basis of prior sense experience of similar things. There is an inherent logical tension between the last argument and the previous two. This last argument offers an explanation for cloud formation that cannot be reconciled with the other explanations: on this account, the presence and absence of clouds is due to the entrance and exit of particles through pores.

In the section of the DRN dealing with this phenomenon alone, Lucretius has offered several equally plausible explanations for the same phenomena. Further, he refuses to arbitrate among them for his reader, never saying which one is superior. We might object that their incompatibility means that at least one of them must be false. In this case, if the *spiracula mundi* analogy is accepted as the definitive explanation for cloud formation, then the clothing argument cannot be accepted as an explanation. It seems that by endorsing incompatible explanations, Lucretius inadvertently calls into question his own credibility.

The principle of multiple explanations is not a Lucretian invention, but can be observed in Epicurus' letters.[66] In his discussion of the logic of multiple explanations, R. J. Hankinson concludes "that Epicurus, and to perhaps an even greater extent Lucretius, is driven primarily by the 'therapeutic' goal so frequently invoked...The task is to rid humanity of useless fears, and (up to a point) it does not matter how you do so."[67]

For Hankinson, in light of the major motivation of the poem, the problem posed by an incompatibility among different explanations dissolves. Once the bare *visualisability* of the unseen has been securely established, the specific means by which this is achieved is no longer relevant. Pinning down whether any one argument for how to understand cloud formation is the definitive is set aside. The reader gets to the top of what may be a ladder of multiple explanations knowing *that* cloud formation operates according to dynamics that are *in some way* similar to quotidien phenomena. Their grip on that fact allows them in theory to loosen their grip on the exact way they first pictured the process.

The "fundamental Epicurean framework of the subordination of physics to ethics" [68] means that arriving at a plausible explanation (or explanations) of unseen phenomena is not actually the goal of the Epicurean philosopher; these explanations are merely a stepping stone on the way to the final goal of *ataraxia*. I agree with Hankinson's overall point and how it resolves the glaring problem that arose in my discussion of the seemingly incompatible arguments about cloud formation. However, I would emphasize

---

[66] Hankinson, R. J. "Lucretius, Epicurus, and the Logic of Multiple Explanations," 75-6.
[67] Ibid., 94.
[68] Ibid., 79.

that Lucretius and Epicurus before him must strive for accuracy as far as they can while still using the analogical method.

My focus has been to describe how the poem's main activity consists of making arguments from analogy to get us to "see" what has heretofore been hopelessly obscure. But this was not the full story. As the doctrine of multiple explanation shows, knowing *that* we are capable of understanding the invisible aspects of the world is far more important than painting any definitive picture of what it actually would be like in reality. Adducing multiple "pictures" of a certain phenomenon's atomic inner workings can demonstrate that there are *more than enough* ways these mechanisms could be operating that make sense on the basis of what we do see—that the physical processes that underlie our world are comparable amongst themselves, and thus that they are easily comprehensible.

The third and last category of argument from analogy I want to discuss consists of analogies based on everyday phenomena which take other familiar phenomena as their target domain. These analogies reinforce the idea that the physical explanation is subordinate to ethical aims: they are not necessary yet they reinforce the overall method. A good illustration of this kind of analogy is that between poppy seeds and water.

> namque papaveris haustus itemst facilis quod aquarum,
> nec retinentur enim inter se glomeramina quaeque
> et perculsus item proclive volubilis exstat. (2.453-455)

> For a draught of poppyseed is as easy to take as one of water,
> As the round particles are not restrained among themselves
> and, when struck, go rolling downhill just as readily [as water does].

This analogy is not an argument in the same way as the first two kinds were; it does not seek to persuade us that the unseen world is "visualisable" by providing us with any new and urgently needed knowledge. Both the target and base systems (the draught of water and the draught of poppy seeds) belong firmly to the realm of familiar phenomena. They lack any of the shadowy mystery that might frustrate our Epicurean aim of *ataraxia*. In fact, the analogy is part of a larger argument from analogy that the atoms of water possess a shape similar to the atoms of poppy seeds. But establishing the similarity of the building blocks of poppy seeds and water depends the parallel between the properties of water and poppyseeds as we experience them.

Nevertheless, this innocuous analogy plays a role in the larger pedagogical aim of the DRN in tandem with the other analogies that, as I have shown, characterize the argumentative method of the poem. Specifically, analogies that do not serve the function of illuminating any target system directly reinforce Lucretius' analogical method when he is depending on it to do work. Analogies like this show themselves a good method of reasoning. The reader has witnessed (or easily could) that there is similarity in properties between poppy seeds and water, and they know from direct sense perception why this similarity provides grounds for extrapolation.

Lucretius thus reinforces the analogical method even when it is not the sole means of prompting insight into the workings of the unseen world. The reader gets a comparison by which this particular method of inference becomes appealing in general, which is important for the arguments where its efficacy does count. Arguments from analogy that

actually inform us—give us a new and revelatory insight into the unseen world—are reinforced in the overall context of the poem.

In keeping with a trend I have played up throughout the poem, Lucretius decides not to foreground the importance of the analogical method. As Hankinson writes, "Lucretius is far less concerned [than Epicurus is in the Letter to Pythocles] to draw explicit attention to this feature of the methodology."[69] Once again, the motif emerges of Lucretius' seemingly conscious swerve away from explicitly reporting Epicurean dogmatism verbatim. However, the striking liberties Lucretius takes didactically accord with shared methodological commitments that has at times sunk beneath the surface of the poem. I hope that I have helped bring the Epicurean priorities of the poem sufficiently to light, because I think that they allow us to reassert that Lucretius' *De rerum natura* is in fact a successful Epicurean poem.

---

[69] Hankinson, R. J. "Lucretius, Epicurus, and the Logic of Multiple Explanations," 77.

Bibliography

A Greek-English Lexicon. 9th Ed. Compiled by Henry George Liddell and Robert Scott. Oxford: Clarendon Press, 1996.

Annas, Julia. *Hellenistic Philosophy of Mind*. University of California Press, 1992.

Asmis, Elizabeth. *Epicurus' Scientific Method*. Ithaca: Cornell University Press, 1984.

Bailey, Cyril. *The Greek Atomists and Epicurus: A Study*. Oxford: Clarendon Press, 1928.

Classen, C. Joachim. "Poetry and Rhetoric in Lucretius." *Transactions and Proceedings of the American Philological Association* 99 (1968): 77-118. Accessed January 26, 2018. http://www.jstor.org/stable/2935834.

Davidson, Donald. "What Metaphors Mean." *Critical Inquiry* 5, no. 1 (Autumn 1978): 31-47. Accessed September 29, 2017. www.jstor.org/stable/1342976.

Epicurus. *Epicurus: The Extant Remains*. Translated by Cyril Bailey. Oxford: Clarendon Press, 1926.

Fowler, Don. *Lucretius on Atomic Motion: A Commentary on De Rerum Natura, Book Two, Lines 1-332*. Oxford University Press, 2002.

Garani, Myrto. *Empedocles Redivivus: Poetry and Analogy in Lucretius*. London: Routledge, 2012.

Hankinson, R. J. "Lucretius, Epicurus, and the Logic of Multiple Explanations." In *Lucretius: Poetry, Philosophy, Science*, edited by Daryn Lehoux, A. D. Morrison, and Alison Sharrock, 69-97. Oxford University Press, 2013.

Lehoux, Daryn. "Seeing and Unseeing, Seen and Unseen." In *Lucretius: Poetry, Philosophy, Science*, edited by Daryn Lehoux, A. D. Morrison, and Alison Sharrock, 131-51. Oxford University Press, 2013.

Long, A. A. "Aisthesis, Prolepsis and Linguistic Theory in Epicurus." *Bulletin of the Institute of Classical Studies* 18 (1971): 114-33. Accessed January 9, 2018. http://www.jstor.org/stable/43646282.

Lucretius. *De Rerum Natura: Libri Sex*. Edited by William Ellery Leonard and Stanley Barney Smith. Madison, WI: University of Wisconsin Press, 1942.

Mayer, R. "The Epic of Lucretius." *Papers of the Leeds International Latin Seminar* 6:35-43.

Oxford Latin Dictionary. 2nd ed. Edited by P. G. W. Glare. 2 vols. Oxford: Oxford University Press, 2012.

Roberts, Louis. *A Concordance of Lucretius*. Agon, 1968.

Sedley, David. *Lucretius and the Transformation of Greek Wisdom*. Cambridge University Press, 1998.

Thucydides. *The Peloponnesian War*. Translated by Steven Lattimore. Hackett Publishing Company, 1998.

Volk, Katharina. "The Teacher's Truth: Lucretius' *De rerum natura*." In *The Poetics of Latin Didactic*, 69-118. Oxford University Press, 2002.

Acknowledgements