SIGNIFYING NOTHING

The shadowy force of the *den* is formative not only for Democritus's ethics but also for his poetics, and indeed for his philosophical discourse as a whole. The signifier of something/nothing that cannot by its nature be signified, the *den* can appear only as an abyss—a true void—within the text of Democritus's philosophy. His *logos peri phuseōs* is woven around and covers over that abyss without ever filling it, and its indistinct presence as an absence will simultaneously define and defy the truth of that *logos*. If, as Alenka Zupančič writes, "reality is constituted in the loss of a little bit of the Real," *den* marks that little bit of the Real, the loss of which constitutes both Democritus's atomic reality and his science of it.[71] Ancient atomism is sometimes viewed as an antecedent to modern atomic theory, and a direct line drawn from Leucippus and Democritus to Rutherford, Bohr, and Heisenberg.[72] But if Democritus's *logos* is a science, I will suggest, what makes it so is not his "discovery" of the atom but the relation he sustains, by means of the *den*, to the impossible Real.

The word *den*, as we have seen, appears only in the paraphrases of the doxographers, where it is listed as a simple synonym for the atom. We never hear the word spoken in Democritus's own voice, as it were. This absence is especially striking in a discourse that boasts a godlike totality. The *Mikros Diakosmos* may have opened with the proclamation, "I say the following concerning all things" (*legō tade peri tōn xumpantōn*), a claim so grandiose as to verge on hubris, as Sextus snidely remarks in quoting the line: Democritus spoke "likening himself to the voice of Zeus" (< B165/P44b).[73] And indeed, Democritus does seem to have aimed for a truly Olympian universality. The catalog of his lost works substantiates the claim to speak about "all things," encompassing anthropology, eschatology, ethics and psychology, astronomy and meteorology, botany and biology, geometry, medicine, aesthetics, and land management, as well as a Small World-System (*Mikros Diakosmos*) and a Great World-System (*Megas Diakosmos*).[74] One characteristic

71. Zupančič 2000, 240.

72. Barnes 1982, 342: "We are all atomists now." Cf. Furley 1987, 123; and Zilioli 2020. Barnes goes on to enumerate the differences (cf. Gregory 2020), but also to posit a Heisenberg principle of ancient atomism (561–64; cf. Kirk, Raven, and Schofield 1983, 433). On the (question-begging) question of whether the Presocratic *phusikoi* were scientists, see Algra 1999, 60–63.

73. The verb *legō* appears in the participial form in Sextus but Cicero quotes the line in the indicative: "*haec loquor de universis*" (< B165/P44a). Democritus assumes this Jovian perspective in part by effacing himself as author: the first-person singular is extremely rare in the extant fragments, and for the most part the author disappears behind the authoritative force of his own text: "This *logos* reveals" (B7/D18); "it has been revealed" (B10/D16). I find only two first-person pronouns in the text considered authentic by Laks-Most (although Apollonius Dyskolos cites the author's use of *emeu* and *emeo* [B13/R3a] so there may well have been more): *dokei de moi* in A151/D179 and *me* in B116/P22a. The latter speaks directly to the author's anonymity: "I came to Athens and no one recognized me."

74. Thrasyllus apparently called Democritus "a real pentathlete in philosophy" (Diog. Laert. 9.37 < A1/P42) and Philodemus praised him as unrivaled in his intellectual curiosity (B144/P43). On the

often taken to define Presocratic philosophy, as I noted in the Introduction, is its claim to *legein peri tōn xumpantōn*, "to give a universalist account . . . to take everything—the world as a whole—as the subject of inquiry."[75] That universalizing ambition reaches its apotheosis, as it were, in Democritus's Jovian world-systems.

This comprehensive discourse is unified by a finite set of operating principles. The attraction of like-to-like, for instance, governs not just the aggregation (*sustēma*) of atoms into celestial elements (Diog. Laert. 9.44 < A1/D13), but also the consolidation (*sustēma*) of earth and other planets (Diog. Laert. 9.30 < 67A1/D80b), and the assembling (*sustēma*) of human beings into tribes (Diod. Sic. 1.8.4 < B5/D202).[76] Fragment B164/D55 describes this universal and universalizing principle, which acts equally on the large and the small, the animate and inanimate, the artificial and the natural:

> καὶ γὰρ ζῶια . . . ὁμογενέσι ζώιοις συναγελάζεται ὡς περιστεραὶ περιστεραῖς καὶ γέρανοι γεράνοις καὶ ἐπὶ τῶν ἄλλων ἀλόγων ὡσαύτως. ⟨ὡς⟩ δὲ καὶ ἐπὶ τῶν ἀψύχων, καθάπερ ὁρᾶν πάρεστιν ἐπί τε τῶν κοσκινευομένων σπερμάτων καὶ ἐπὶ τῶν παρὰ ταῖς κυματωγαῖς ψηφίδων· ὅπου μὲν γὰρ κατὰ τὸν τοῦ κοσκίνου δῖνον διακριτικῶς φακοὶ μετὰ φακῶν τάσσονται καὶ κριθαὶ μετὰ κριθῶν καὶ πυροὶ μετὰ πυρῶν, ὅπου δὲ κατὰ τὴν τοῦ κύματος κίνησιν αἱ μὲν ἐπιμήκεις ψηφῖδες εἰς τὸν αὐτὸν τόπον ταῖς ἐπιμήκεσιν ὠθοῦνται, αἱ δὲ περιφερεῖς ταῖς περιφερέσιν ὡς ἂν συναγωγόν τι ἐχούσης τῶν πραγμάτων τῆς ἐν τούτοις ὁμοιότητος. (B164/D55)
>
> For animals . . . herd together with animals of the same species, such as doves with doves and cranes with cranes and likewise with the other irrational creatures. So too for the inanimate things, as one can see with seeds being sifted and pebbles on the beach. In the first case, because of the rotation (*dinon*) of the sieve, lentils are arrayed separately with lentils and barley with barley and wheat with wheat. In the second case, because of the movement of the wave, oblong pebbles are pushed into the same place with oblong ones and round pebbles with round, as if the intrinsic similarity of the things exerted some force of attraction.

The use of *dinos* (whirl) to describe the winnowing process might suggest that this is an illustrative analogy. The cosmopoetic *dinē* is said to separate elements

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extent of his polymathy in its historical context, see Patzer 2006, 149–53; and Gemelli Marciano 2007. The titles are collated by Laks-Most at D2–9 and assessed fully by Leszl (2007). The *Mikros Diakosmos* was probably by Leucippus (67B1a, but see also A31/D3, A33.III/≠LM). Schofield (2019) believes the *Megas Diakosmos* dealt with the plurality of worlds at the cosmological level; the *Mikros Diakosmos* with arrangements of atoms at the microscopic level.

75. Long 1999b, 10 and see the references in the Introduction, n. 57.

76. Other examples of like-to-like movement include the attraction of magnet and iron (A165/D126), the differential sorting of animals to the element most like them (B5/D129), acoustics (A128/D156). Other general principles are the *rhusmos* (fluid configuration) that operates within physics (67A6/D31, A38/D32, B139/D38), aesthetics (67A6/D31, B8a/D2b.V, A33X/D2bX), ethics (B33/D403, B197/D297, B266/D363) and psychology/epistemology (67A28/D132, B7/D18, B33/D403); and the indifference principle which, I proposed, governs ontology, atomic motion, sense perception, and ethical choice.

out like-to-like in a process Diogenes likens to winnowing (*hōsper diattōmena*, Diog. Laert. 9.31 < 67A1/D80b). But despite its empirical tone ("as one can see"), this fragment does not offer herding animals or sifted grains as visible analogies to unobservable cosmic aggregation. Nor does it present these everyday phenomena as the visible effect of unobservable atomic aggregation. Instead, it hypothesizes a general law that operates across these different registers: it is "as if" there were some universal law of attraction. The support for the hypothesis lies in the diversity of phenomena it explains. The universality of the system is its own proof.

Language is a part of this system. The orderly taxonomy of the passage's structure mimetically reproduces its content: first animals (*zōia*), subdivided into doves and cranes; then inanimate things (*apsukha*), subdivided into grains and pebbles, the former further subdivided into lentils, barley, and wheat, the latter into long pebbles and round ones. Words are themselves sorted like-to-like through Democritus's jostling jumble of plosives, his use of repetition (*kai epi tōn, meta*) and polyptoton (*peristerai peristerais, geranoi geranois*, etc.). Language not only describes atomic principles but directly instantiates their effects.

This fragment points to the ambiguous status of language in relation to Democritus's atomic system: it is simultaneously grounded in his theory of matter and encompasses it as an Olympian metalanguage. On the one hand, language follows and demonstrates the physical principles of atomism. Aristotle explains the atomists' phenomenology by comparing atoms to letters: different combinations and configurations of atoms (*stoikheia*) produce different phenomena, just as letters (*stoikheia*) do words.[77] Building on the double meaning of *stoikheion* as element and letter, James Porter reconstructs a "*stoikheion* theory of language" by which Democritus generalized the analytic model of atomism to linguistics and aesthetics. In this atomic theory of language, the relation between atoms and letters, like that between birds, beans, and pebbles in B164/D55, is more than simple analogy: as *stoikheia*, Porter argues, letters are both abstract units within an integrated system and material elements. Linguistic expression is not just an illustration of atomic processes but is itself a material process "decisively determined by, and in the extreme case reducible to, the properties of some non-linguistic physical substrate."[78] In the fundamental dichotomy of B9/D14, language would seem to

77. "For they say that what is differs only by *rhusmos, diathigē,* and *tropē*. Of these, *rhusmos* is shape, *diathigē* order, and *tropē* position. For A differs from N in shape, AN from NA in order, and Z from N in position" (Arist. *Metaph.* 1.4 985b15–19 < 67A6/D31). Cf. Arist. *Gen. corr.* 1.2 315b14–15 < 67A9/D56. Porter (2010, 217) believes the letter analogy was Democritus's own; cf. 1989, 168–69n107; Von Fritz 1938, 25; Burkert 1959; Barnes 1982, 368; and Wismann 2010, 11. Linguistic theory was part of Democritus's omniscient purview: he wrote treatises "On poetry," "On rhythms and harmony," "On euphonious and cacophonous letters," and "On the beauty of words." On these works and Democritus's aesthetic theory more broadly, see Brancacci 2007.

78. Porter 2010, 213–39; the quotation is on p. 225. See also Porter 1989. If for Porter letters work like atoms, for Wismann (2010, 11–15, 29–32, 50, 60–62) atoms are like letters. Extrapolating from this analogy, Wismann argues that Democritus's physical theory is, at base, "une physique du fonctionnement

stand—counterintuitively—on the side not of *nomos* but of *eteos*, the physical reality of atoms and void.

On the other hand, language is not only *etic*, as it were, but also thetic. Proclus tells us Democritus viewed names as arbitrary: they are not inherent to the thing they name but posited (*thesei*) and thus belong "not to nature (*phusei*) but to chance" (*tukhēi*, B26/D205).[79] He based this view, Proclus says, on the fact of verbal ambiguity: homonymy (*polusēmon*), polyonymy (*isorropon*), changes of name (*metōnumon*), and things without names (*nōnumon*) would be impossible, he reasoned, if names existed by nature. He demonstrates the posited nature of language by himself positing new words for these very linguistic phenomena (*polusēmon, isorropon, metōnumon*, and *nōnumon*), coinages that simultaneously illustrate the theory and ward off linguistic ambiguity through their immediate legibility.[80]

These same qualities of artificiality and legibility characterize Democritus's lexical practice as a whole. In chapter 3 we looked at Empedocles's extravagant verbal creativeness, his free invention of new words and exotic repurposing of familiar words. Democritus too was famous in antiquity for his linguistic invention. Callimachus wrote a catalog of his "rare words and constructions," and the Hellenistic grammarian Hegesianax composed a book on his diction (*lexis*, A32/R2).[81] In comparison to the flamboyant artistry of Empedocles, however, Democritus's inventions may strike us as disappointingly plain. Despite Cicero's praise for the "brilliant verbal ornament" that made Democritus's work like a poem without meter (*Orat*. 20.67 < A34/R6), his linguistic borrowings tend to come not from archaic poetry (like those of Empedocles) but from contemporary medical writing, such as his use of *skēnos* (tent, hut) to refer to the human body, a usage derived

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du langage" (2010, 12, 15). See also Cassin 2017, 36: "To say that atomism is a physical representation of discourse is to say that discourse is the proper object of physics or even that the *logos* is the *phusis* that needs to be described."

79. The artificial nature of language is also suggested by Democritus's artisanal metaphors—the gods' names are their "speaking statues" (B142/D206); Homer "built (*etektēnato*) an order of all sorts of verses" (B21/D221)—by his wordplay (e.g. on *gunē*/*gonē* in B122a/D167), and by his analysis of the evolution of human communication (Diod. Sic. 1.8.1–9 < B5/D202): posited by convention, language is one of the *tekhnai* men learned through need and experience (1.8.3, 1.8.9). Brancacci (1986) argues that Proclus misrepresents Democritus's theory of language, which he believes takes aim at the Parmenidean unity of words and being. Cf. Piergiacomi 2017.

80. As Cicero remarks, "Heraclitus is very obscure, Democritus not at all" (*Div.* 2.133 < A34/R7). Only *isorropon* (for different names applied to the same thing) is not immediately comprehensible. Its base meaning is "equally weighted"; here it seemingly indicates the precise equivalence between words. *Metōnumon* is supplied by Diels. The fragment offers as an example of name change Theophrastus (formerly Tyrtamus). If this refers to the Peripatetic philosopher, he postdated Democritus; some thus question the attribution of the fragment.

81. Plutarch deems his diction "divine and magnificent" (*daimoniōs, megaloprepōs,* A77/R9). Many examples of Democritus's coinages are helpfully collected at Laks-Most R4. On Democritus's style, see Norden 1915, 22–23; Von Fritz 1938, 24–38; Patzer 2006, 155–58; and Hose 2016, 242.

from, or at least shared with, Hippocrates.[82] There are few overtly poetic words in the extant fragments.[83] The bulk of his coinages are minor variations on everyday Greek vocabulary, new but proximate forms of familiar words (like *doxis* for *doxa* in B7/D18) or new words produced following regular patterns of Greek word formation (like *apatēton*, "untrodden," a *hapax legomenon* formed normally from the verb *pateō*, B131/R3f).[84]

Indeed, his linguistic inventions are so minor one might wonder why he even bothered. For instance, he calls hearing "a receptacle for words" (*ekdokheion muthōn*, A126a/D155). *Ekdokheion* is unparalleled in classical Greek but is easily derived from *ekdekhomai* (to receive).[85] There were other words available in Greek to express the idea of a receptacle: why did Democritus go out of his way to invent this word? Not for poetic effect: the metaphor is faded and unambitious; it doesn't evoke a particularly strong image or carry an affective valence. Instead, the point of these coinages seems to be to construct a technical language that is immediately legible but also noticeably distinct from normal language and in which the true meaning of words—artificial but unambiguous—is ultimately determined by

82. Other words that occur only or mainly in medical writings include *apoplēxiē* and *epilēpsia* (B32/D163a–b), *eurous* (A162/D201), *humēn* (B5/D129, A93/D117), *ambē* (B29/R4b), *palmos* (A47/D52). See Vlastos 1945, 587; and Holmes 2010, 202–5, 216–27. The line of influence may run in the opposite direction: the Suda reports that Democritus taught Hippocrates (A10/P28). See Salem 1996, 220–63; Gemelli Marciano 2007, 213–24; and Damiani 2020.

83. Among them we might list the "honeycombed" bones of bulls' horns (*tenthrēniōdes,* A155/D192) and the "wave-like" motion of worms (*kumatoeidōs,* B126/D196), with their metaphor and strong visual imagery; or the description of a cylinder as a "rolling mass" (*olooitrokhon,* B162/D215), a word that repurposes Homeric vocabulary (e.g. *Il.* 13.137). At B168/D36 the description of atoms "sprinkled about" in the void (*peripalassesthai,* if Diels's emendation is correct) might also have a Homeric feel. In general, there are very few metaphors in the extant fragments, and they tend to be so weak that it is hard to determine whether they are really metaphors at all. For instance, when Democritus speaks of the *kanōn* by which mortals are measured in B6/D17, it seems doubtful that a fifth-century Greek would automatically think of a carpenter's rule. Where we do find lively similes for atomic action—crowds of people in a public square (Sen. *QNat.* 5.2.1 = A93a/D118) or dust motes in a sunbeam (Arist. *De an.* 1.2 403b31–404a9 = 67A28/D132)—there is no evidence that these are original to Democritus. Interestingly, some of Democritus's most vivid language describes the violent process of sexual reproduction (B32/D163, A151/D179).

84. Hesychius flags *apatēton* as irregularly compounded (B131/R3f), but see Chantraine 1968, 863. Likewise, the various compounds with *ameipsi- (ameipsikhron,* changing color, B139a/R4c; *ameipsikosmiē,* changing order, B138/D83b; *ameipsirhusmein,* changing configuration, B139/D38) are all *hapax legomena* but easily derived from *ameibō.* Cf. *askalēnes* (equilateral, B132/R4f) from *skalēnos* (uneven); *brōkhmōdēs* (moist, B133/R4g) from *brekhō* (to wet); *lapathous* (pits, B122/R4k) from *lapassō* (to empty); *sous* (impulse, A62/D125) from *seuō* (to rush). *Enkatabussousthai,* which at A77/D152 describes the deep penetration of images into the pores of perceivers, is a *hapax,* but the combination of the two prefixes and *bussos* (a variant of *buthos*) easily yields the meaning.

85. *Ekdokheion* is found in later Greek: Josephus uses it for a reservoir or water tank. Cf. *dexamenai,* receptacles for fluids (B135/D182). Other available options included other forms of the same root (*hupodokhē, dokhē, dokheion, dexamenē*) or separate words like *angeion.*

the discourse itself.[86] For example, Democritus supplies our only classical instance of the noun *deikelon*, a minor variation on *deikēlon*, meaning a representation, exhibition, or image.[87] The meaning of *deikelon* (derived from *deiknumi*, to show) seems obvious, but the unexpected vowel quantity marks it and alerts us to the possibility of a special meaning: the ancient commentator who quotes it defines the word as "an efflux similar in form to things" (B123/D146), a *terminus technicus* within Democritus's atomic theory of perception. The same may be said for the various permutations on the common noun *rhusmos* (the Ionic form of *rhuthmos*, meaning measured motion, rhythm, symmetry or order). Democritus coins the novel forms *epirhusmiē* (B7/D18), *metarhusmoō* (B33/D403), and *ameipsirhusmia* (B8a/D2b.V) as terms of art for his atomic configurations, appropriating an everyday word and transforming it, by way of minor morphological tweaks, into a series of technical terms.[88] He does the same with many other common words, including *tropē* (for atomic position, 67A6/D31, A38/D32, A123/D72), *metapiptein* (for atomic motion, B9/D15, B101/≠LM, A135/D64, B191/D226), even *atoma* and *kenon*.

Through this precise and understated linguistic innovation, Democritus creates a new technical language for his new world-system, one in which meaning is determined primarily by the system itself as a feature of its metadiscursive totalization. At once natural and constructed, etic and thetic, this *logos* enables Democritus to "speak concerning all things," giving each one a name that will be unique and specific. By positing a language of reality that is itself real—a direct enactment of atomic physics—and translating that reality into *nomos* through his subtle variations on conventional parlance, Democritus appears to span B9/D14's gulf between *nomos* and *eteos*, convention and atomic reality, so as to forge a metadiscourse that is transparent, universal, and real.

Within this universal discourse one thing, however, remains unspoken: the *den*. Democritus speaks of atoms and void; he speaks of something and of nothing. But he does not speak of 'othing. He invents this word, but he cannot put it to work within his totalizing world-system. As an ostentatious linguistic invention, *den* would seem to exemplify the posited nature of words for Democritus. It is manifestly the artifact of *thesis* not *phusis*. But unlike his other coinages, *den*

86. Patzer 2006, 164: "Demokrit ist recht eigentlich der Erfinder der *wissenschaftlichen* Prosa." This is a feature of all technical, including philosophical, discourse: compare, e.g. Lacan's Symbolic and Real. On ancient Greek technical writing, see further Thesleff 1966; Havelock 1983, 20–41; Van der Eijk 1997; Asper 2007, 11–56; Schironi 2010; and Fögen 2016.

87. *Deikēlon* (with an eta) is used as early as Herodotus (2.171). *Deikelon* (with an epsilon) is not found again until the *Anthologia Graeca* in epigrams attributed to late authors Paulos Silentiarios (5.260.2) and Agathios Skholastikos (9.153.4, 16.332.2).

88. Aristotle considers *rhusmos* a term of art for atomic configuration (67A6/D31, A38/D32; cf. B139/D38). Democritus wrote treatises "On changes of configuration" (*Peri ameipsirhusmiōn*) and "On different configurations" (*Peri tōn diapherontōn rhusmōn*). *Ameipsirhusmein* shows up at Hippoc. *Epist.* 18.10, but the others are unparalleled.

is neither transparent nor univocal, as the doxographers' efforts to gloss it demonstrate. It can be made to signify only when translated as *atomon*, but that, as we have seen, is a mistranslation. If the *den* denotes the atom as the negation of nothing, it seems not to *signify* that concept so much as to materially instantiate it in its own morphological formation.[89] In that sense perhaps it exemplifies Porter's understanding of Democritean words as material *stoikheia*. As a linguistic element, however, the *den* is inert: it resists combination within larger semantic or syntactical units of meaning. Atoms, linguistic and physical, combine to produce all the things of the world and the words that name them. But the *den* exists in isolation. It bears linguistic relation to no words other than those it contains within itself, *hen* and *mēden*, and it cannot arrange these in such a way as to produce a coherent meaning. A nonexistent word, a meaningless signifier with no obvious signified, *den* seems to belong to language not as the vehicle of lucid communication but, as Cassin argues, as a system characterized by ambiguity, obscurity, non-sense.[90]

Den thus seems to be the exception to Democritus's Olympian discourse and to mark the limits of its totalizing vision. "In reality atoms and void." But atoms and void—what is and what is not, *to on* and *to mē on*—do not provide an exhaustive description of reality. There is something left over, something that is neither atom nor void but also somehow both. A less-than-nothing that is more-than-everything, the *den* exceeds Democritus's *logos peri tōn xumpantōn* and reveals that *logos* to be incomplete, not-all. In so doing, it speaks to the status of knowledge and truth in Democritus's philosophy and the nature of this philosophy as a science. Let us return one final time to B9/D14: "By convention sweet and by convention bitter, by convention hot, by convention cold, by convention color, but in reality (*eteēi*) atoms and void." This fragment implicitly promises us a knowledge of reality in its entirety: atoms and void really are and are all that really is; knowing them we know everything. But the expression of that truth is oddly limiting. Sextus Empiricus, as we have seen, assimilates Democritus's *eteos* to Parmenides's *alētheia*, explaining, "he means that none of the phenomena appears according to truth (*kat' alētheian*) but only according to opinion" (*kata doxan, Math*. 7.135 < B9/R108). Parmenides's terminology was available to Democritus, but he pointedly avoids it. His binary of *nomos* vs. *eteos*—a coupling found nowhere else in Greek literature—conflates Parmenides's dichotomy of *doxa* vs. *alētheia* with contemporary sophistic debates over *nomos* vs. *phusis* in a way that distances him from both.

89. Eyers (2012) differentiates the "signifier-in-relation" (which produces meaning through differential relation to other signifiers) from the "signifier-in-isolation," which "designates the signifier as Real, isolated in its material element away from the networks of relation that render it conducive to meaning" (38). The latter describes well the linguistic qualities of the *den*.

90. See Cassin 2020, 106–9. She thus considers *den* "the signifier that signifies the signifier" (2020, 102), both in its genesis out of difference and in its refusal of a univocal meaning; cf. 2017, 37–39. Ambiguity is built into the very definition: the LSJ entry (*deis-denos*) gives as the first definition "no one or thing" and as the second, "something." On the contradictory entry in Chantraine, cf. Cassin 2017, 26.

Instead of either *phusis* (the physical nature of reality) or *alētheia* (the truth about that reality), we get *eteos*.[91] This word, which occurs in five of the eight fragments quoted by Sextus, is a curious choice. It is not a philosophical word: it appears nowhere else in philosophical prose of the archaic or classical period, and was uncommon enough that scholiasts felt the need to gloss it (they invariably understand it as *alēthes*).[92] Galen, in his exegesis of B9/D14, suggests that Democritus invented the word.[93] But in fact the adjective appears frequently in Homer in regard to prophetic signs and human speech. Its most common usage is in conditional clauses to verify claims (if that is true, as you say) or beliefs (if that is true, as it seems).[94] In Aristophanes it occurs only in questions: "Is that really true?"[95] In Hippocrates, it names the hallucinations of the mad, who "cry although nothing is harming or hitting them, fear what is not fearful, are bothered by things they should not be, and perceive nothing really (*eteēi*) as sane men should" (*De diaeta* i–iv 35.60–61). In contemporary usage, then, *eteos* seems to mark an unsure relation between human knowledge and reality. It functions more as a question mark than an anchor point of truth.[96]

91. Galen (*Elem. Hipp.* 1.2 = A49/D23b*)* simply conflates the three terms, in a single sentence (quoted in n. 93 below) glossing *eteos* as both *phusis* and *alēthes. Phusis* might have been expected here: it was part of Democritus's lexicon and perhaps even one of his terms for the atom (A58, B168/D36; cf. B26/D205, B21/D221, B33/D403, B176/D252). Treatises *Peri phuseōs, Peri anthrōpou phusios,* and *Peri phuseōs kosmou* are attributed to Democritus, but these rather generic titles may have been assigned to the works later. On the title *Peri Phuseōs,* see Naddaf 2005, 16–35; and on Democritus's multifarious use of the word *phusis,* Morel 2007; Taylor 2007b, 2–9.

92. The only two exceptions are Epimenides fr. 22.1 and Phaenias fr. 11.25, both passages with strong Homeric influence. It is worth noting that *eteēi* in Sextus's quotations is an emendation. The manuscript has *aitiē* (and in one case the nonsensical *toiē*). *Aitiē* is agrammatical and clearly wrong, but the correction suggests that *eteos* was an uncommon word and the copyist replaced it with one with a more respectable philosophical pedigree.

93. Gal. *Elem. Hipp.* 1.2 = A49/D23b: "*Nomōi* means the same thing as 'conventionally' and 'for us,' not in accordance with the *phusis* of things themselves; the latter in turn he calls *eteēi* from *eteon,* which means *alēthes,* having invented the word." It is unclear whether Galen is claiming Democritus invented the adjective or merely its dative form.

94. Of prophecy: *Il.* 2.300, 12.217. Of truthful human speech: *Il.* 7.359, 12.233, 14.125, 15.53, 20.255. Verifying claims: *Il.* 8.423–24, 13.375; *Od.* 19.215–17, 23.35–36, 24.258–59. Verifying impressions: *Il.* 18.305; *Od.* 13.328, 23.107–108, 24.352. It is also used of the correct interpretation of divine will (*Il.* 5.104, 13.153; *Od.* 16.320) and of legitimate paternity (*Od.* 3.120–23, 9.528–9, 16.300–301). Of the twenty-two occurrences in Homer, the only two that do not follow *ei* also occur in contexts of uncertainty: *Il.* 2.300: "wait until we know whether Calchas prophesies truly or not"; *Il.* 20.255: "many things true and not."

95. E.g. "Who are you *eteon?*" (*Eq.* 733, *Vesp.* 184); "What is this *eteon?*" (*Nub.* 93, *Vesp.* 836). Cf. *Eq.* 32, 1246, 1392; *Eccl.* 376; *Nub.* 35, 820, 1502; *Vesp.* 8; and *Ach.* 322, 609. Aeschylus associates it with true naming at *Sept.* 830.

96. Hesiod's Muses famously contrast "lies resembling real things" (*pseudea . . . etumoisin homoia*) to "truths" (*alēthea, Theog.* 27–28). If, as Snell (1975) and Krischer (1965) suggest, in archaic Greek *alēthes* denoted veracity (true communication) and *etumos* ontic reality, Democritus, I am claiming, reverses the relation and problematizes the latter. But these terms were ambiguous already in Homer and Hesiod (Tor 2017, 65–72) and shifted over time (Cole 1983).

Eteos thus collapses back into *nomos*, rendering Democritus's reality—the truth his philosophy offers—uncertain. Whereas Parmenides's *alētheia* is the singular passage (*poros*) out of the ignorance of *doxa* to an absolute and ultimate truth, Democritus's *eteos* leaves us in aporia: "In reality to recognize what each thing is is in aporia" (*eteēi hoion hekaston gignōskein en aporōi esti*, B8/D19). The same non-knowledge that divides the ethical subject thus forms a void within reality itself. It is not simply that we know nothing *about* reality (which would thereby be left whole and perfect beyond our knowledge) but that we know nothing *in* reality, and reality is defined by that non-knowledge.[97] *Eteos*—reality itself as well as Democritus's revelation of it—is incomplete and riven by negativity. Truth, exiled from reality, can appear only as a negative projection in an inaccessible beyond: "In reality we know nothing, for *alētheia* is in an abyss" (*eteēi de ouden idmen; en buthōi gar hē alētheia*, B117/D24).[98]

Within the closed circuit between *nomos* and *eteos*, Democritus's *logos* circles around that abyss without ever actually speaking it, and it is constituted by that futility. "This *logos* demonstrates (*dēloi*) that in reality we know nothing about anything" (*eteēi ouden ismen peri oudenos*, B7/D18). Unable to illuminate the abyssal *alētheia* of the Real, Democritus's *logos* can only demonstrate the non-knowledge that characterizes reality, and it does so over and over again: "That in reality (*eteēi*) we do not comprehend what each thing is or is not has been demonstrated (*dedēlōtai*) in many ways" (B10/D16). That is all it has done and all it ever will do: "And yet it will be clear (*dēlon estai*) that in reality (*eteēi*) to recognize what each thing is is in aporia" (*en aporōi*, B8/D19). Democritus's *logos* is nothing but the reiterated demonstration of this aporia.

Thus Democritus's entire philosophical project is structured like the *den*, the subtraction of a non-knowledge of non-knowledge (*a-poria*) that yields truth as the negation of a negation (*a-lētheia*). *Den*, "forgotten" within Democritus's text, is the material remainder and reminder of that unforgettable truth. A solipsistic signifier that cannot be assimilated into an atomic symbolic order, embodying (not signifying) an ontology that cannot be articulated within that order, *den* is exorbitant to Democritus's philosophical discourse and his *logos peri tōn xumpantōn*. And yet, this universalizing discourse encompasses even what eludes

97. This is, in essence, the point of Barad (2007) in regard to quantum physics, which she argues marks a revolution not merely in epistemology (Heisenberg) but in ontology (Bohr). In her terms, the *den* means that knowledge of reality is always attended by non-knowledge (Heisenberg's uncertainty principle) and, further, that such non-knowledge is a feature of reality itself (Bohr's indeterminacy principle).

98. Wismann (2010, 14–15, 49–50) understands *alētheia* similarly as a real beyond representation of which atoms are just the linguistic trace. The abyss figures in B172/D268 (one of the Stobaean fragments and therefore of questionable authenticity) as an example of things that are sources of both good and evil: "Deep water is useful for many things but also, conversely, an evil, for there is a danger of drowning. So a solution was discovered: teach people to swim." We could say that Democritus's *logos,* unable to plumb the depths of the Real, teaches us how to swim around it.

it and communicates even what it cannot say, for if we have any inkling of the *den* as what exceeds Democritus's *logos* it is because it has stowed away, scandalously, within that *logos*.

It is this, in the end, and not merely his intuition of the atom, that makes Democritus a scientist. True science, as Lacan defines it, incorporates the Real into its own discourse as the internal limit of its knowledge and as the acknowledgment of its own incompleteness.[99] Bruce Fink, in explicating this definition, offers as an example Werner Heisenberg who, by setting a limit on science's ability to determine the precise state of the elementary particle at any moment, introduced the Real into physics in the form of quantum indeterminacy. Physics, Fink writes, "when carried out in a truly scientific spirit, is ordained and commanded by the real, that is, by that which does not work, by that which does not fit."[100] Heisenberg himself rejected Democritus as a direct predecessor because (following Aristotle) he understood Democritean atoms as stable and unchanging material bodies: he knew only the reality (*eteos*) of Democritus's atomic theory, not the truth (*alētheia*) of the *den* as "that which does not fit" within that theory and that challenges it from within.[101] In the *den*, Democritus brings the Real into atomic theory as its internal limit and constitutive aporia, and into his universal *logos* as the (n)othing it cannot say. In saying it, Democritus is a true scientist.

99. Lacan 2006. Lacan associates science with the hysteric's discourse: see Fink 1995, 132–35, 138–46; and Conclusion, n. 11.

100. Fink 1995, 134–35.

101. Heisenberg 1958, 69–75, cited by Wismann (2010, 24). See also Barad (2007, 138), likewise differentiating the "atomistic metaphysics" of Democritus from the essentially indeterminate (quantum) metaphysics of Bohr. I hope to have shown that indeterminacy was a feature of the metaphysics of atomism from the beginning.