

Oliver Primavesi

Olearius on Atomism and Theism in Heraclitus: A Presocratic in late 17th century Germany

Abstract: In a 1697 monograph, Gottfried Olearius (1672–1715) endeavours to establish Heraclitus as an important new witness for a general thesis upheld by Ralph Cudworth in 1678. According to Cudworth, Greek philosophers earlier than or independent of Leucippus combined a version of atomism with the belief that the world is ruled by God(s). Olearius tries to improve on Cudworth by showing that Heraclitus, who does not figure among Cudworth’s authorities, also upheld both atomism and theism. As to Heraclitean atomism, Olearius starts from a contradiction within the doxographical tradition: According to some authors, the first principle of Nature in Heraclitus is fire, according to others it is exhalation, i.e. air. Olearius suggests that neither “fire” nor “exhalation” can bear their ordinary meaning here, but that Heraclitus uses both terms to hint at very small, swiftly moved, indivisible particles; yet defining such particles as principles of nature must count as atomism. This result is confirmed by a metallurgical simile, apparently used by Heraclitus, which was taken by Aristotle and the doxographical tradition to imply that Heraclitus traced back everything there is to very small and indivisible fire particles prior to the One. The ascription of theism to Heraclitus, in turn, rests on two further texts which report that Heraclitus ascribed the periodical condensation and rarefaction of matter to a *Fate* (εἰμαρμένη) functioning as *Demiurge*, and that this power is to be identified with *Logos* and God.

Keywords: Air, Atomism, Cudworth, Fire, Heraclitus, Olearius, Physics, Principle, Theology

DOI 10.1515/rhiz-2015-0006

The milestones of the early reception of the Presocratics in the modern period have recently been reviewed in a volume published in 2011 on the reception of the Presocratics up to Diels:¹ Henri Estienne’s seminal collection of fragments called

¹ Primavesi-Luchner, eds. (2011).

Oliver Primavesi: Lehrstuhl für Griechische Philologie I, Ludwig-Maximilians-Universität, Geschwister-Scholl-Platz 1, D-80539 Munich, Germany; E-mail: primavesi@lmu.de

Poesis philosophica (1573), Thomas Stanley's *History of Philosophy* (1655–1662), Ralph Cudworth's *True Intellectual System of the Universe* (1678), or Johann Jacob Brucker's *Historia critica philosophiae* (1742–1744). On the continent, in particular, the historiography of ancient Greek philosophy made a fresh start in the early 18th century, thanks to German scholars who translated English books into Latin. Cudworth's *Intellectual System of the Universe* (1678) for instance, was translated into Latin by Johann Lorenz Mosheim in 1733 and also equipped by him with numerous additional comments, the learnedness of which even exceeds that of the English original. Thomas Stanley's *History of Philosophy* was made accessible to a wider European audience only *via* the Latin translation published by Gottfried Olearius (1672–1715) in 1711.

Olearius, however, also made an *original* contribution to the historiography of Greek philosophy. For in his 1697 monograph on “The Principle of Nature in Heraclitus” (*De principio rerum naturalium ex mente Heracliti*),² he tried to improve on Cudworth's *Intellectual System* in an important respect. Cudworth had tried to show that atomism, the triumph of which seemed to be inevitable in the second half of the 17th century, is quite compatible with believing in a divine ruler of the world, i.e. with theism – quite contrary to what might be suggested by atheistic Atomists like Leucippus, Democritus, and Epicurus. Thus, Cudworth had aimed at rediscovering and disseminating the thought of those ancient natural philosophers who were both (i) *Atomists* and (ii) *Theists*. In bringing these authors to the fore, he took arms against the influential attempt, by Pierre Gassendi (1592–1655), to establish *Epicurus* as the one truly relevant figure of ancient natural philosophy and ethics. By contrast, Cudworth's central claim was that there was not just *one* form of atomism in Greek philosophy, but *two*: the bad variety upheld by Epicurus, which amounts to materialistic reductionism and was introduced by Leucippus and Democritus, and the good one, which was adopted by all previous thinkers, as for instance Pythagoras, Parmenides, and Empedocles, and which confines its claims to corporeal substances while acknowledging the existence of incorporeal substance, too.³

Before Leucippus and Democritus, the Doctrine of Atoms was not made a whole entire Philosophy by it self, but look'd upon only as a Part or Member of the whole Philosophick System, and that the meanest and lowest part too, it being only used to explain that which was purely Corporeal in the World; besides which they acknowledged something else,

² Olearius (1697). The treatise was reprinted in Olearius' 1711 Latin translation of Thomas Stanley's *Historia Philosophiae*, pp. 839–855, in the form of an appendix to Stanley's chapter on Heraclitus.

³ Cudworth (1678), p. 18. See Osborne (2011).

which was not meer Bulk and Mechanism, but Life and Self Activity, that is, Immaterial or Incorporeal Substance; the Head and Summity whereof is a Deity distinct from the World. So that there has been two Sorts of Atomists in the World, the One Atheistical, the Other Religious.

Now Olearius, in his 1697 monograph, finds himself in complete agreement with both the general aim and the method of Cudworth's *System*, but he wants to demonstrate that Heraclitus, who had been passed over in silence by Cudworth, is in fact one of the most important witnesses for the compatibility of atomism and theism. To this monograph the present paper will be dedicated. An analysis of his second treatise on Heraclitus, which he wrote as a dissertation for his pupil Jacob Immanuel Hamilton, and which deals with the notion of *Becoming* in Heraclitus,⁴ has to be deferred to another occasion.

To start with, we will take a look at the author's life.⁵ Gottfried Olearius was born in 1672 as son of Johannes Olearius, who was then professor of Greek at the University of Leipzig. After having achieved a Master's degree in his native Leipzig, Gottfried spent a year of study in Oxford, where he acquainted himself not only with the Greek manuscripts kept in the Bodleian Library, but also with the work of Cudworth. In 1699, he was appointed, at the age of 27, to the chair of Greek and Latin at the University of Leipzig; in 1708 he was promoted to the chair of divinity. His lasting fame rests on his excellent 1709 edition of the complete works of the two Philostrati, one of the most challenging corpora of imperial Greek literature.

§ 1⁶

In the introduction to his 1697 monograph on Heraclitus, Olearius announces his intention to investigate the thought of Heraclitus while, at the same time, pointing to the difficulty of the task. For already in antiquity, grammarians and philosophers alike tried in vain to make sense of the riddles of both Heraclitus' language and his thought.⁷ As far as the grammarians are concerned, their failure

⁴ Hamilton (1702).

⁵ For a fuller account see Lechler (1886).

⁶ Since Olearius' essay is lacking page numbers, we will subdivide our analysis according to Olearius' own section divisions.

⁷ The ancient authors and works quoted in the following are, where possible, abbreviated in accordance with "A Greek-English Lexicon" by Liddell-Scott-Jones. All texts referring to or quoting Heraclitus are additionally equipped with the corresponding number in Part II ("Traditio") of

is attested to by Sextus Empiricus:⁸ “Is there a passage in which any one of these reverend grammarians can understand Heraclitus?” But according to Aristotle, it is not the grammarians that are to blame but Heraclitus himself, since he phrased his thoughts in such a way as to produce perpetual doubts as to where to place full stops. As evidence for his claim, Aristotle quotes from the very beginning of Heraclitus’ *sungramma* the following line:⁹ τοῦ λόγου τοῦδ’ ἐόντος αἰεὶ ἀξύνετοι ἄνθρωποι γίγνονται. Here it is hard to tell whether αἰεὶ belongs with the preceding participle (ἐόντος) or with the succeeding words (ἀξύνετοι ἄνθρωποι γίγνονται). While Olearius does not take up a position on that particular question, he proposes reading not τοῦδ’ ἐόντος but τοῦ δέοντος instead, taking his cue from the fuller version of the passage quoted by Clement.¹⁰ He suggests translating the line with emphasis on its ethical character: *Rationem eius, quod oportet [siue decet] semper minime homines intellegunt*. Even beyond such grammatical ambiguities, the philosophical contents of Heraclitus’ sayings have always posed unsurmountable difficulties: Jerome reports that, despite considerable efforts, Philosophers are almost incapable of understanding Heraclitus:¹¹ *Heraclitum quoque, cognomento σκοτεινὸν, sudantes Philosophi vix intellegunt*. A discussion of similar passages from other ancient authors is postponed by Olearius to a more comprehensive treatment of Heraclitus, since practically every ancient author who mentions Heraclitus at all includes a reference to the difficulty and obscurity of Heraclitus’ language and style.¹²

Serge Mouraviev’s *Heraclitea* (with T = *Traditio* and M. = Mouraviev); where possible, the relevant number in Marcovich’s 1967 edition has been added.

8 S.E. M. I.301, Mau (1954), p. 77.18–20 = T 686,7–8 M.

9 Arist. *Rh.* Γ.5 1407^b11–18 = T 142 M.; 1 (d) Marcovich.

10 Clem. Al. *Strom.* V.14, 111, 7, Stählin-Früchtel (1960), pp. 401.23–402.2 = T 634 M.; 1 (c) Marcovich.

11 Hieronym. *Adv. Iovinianum* I.1, Migne (1883), p. 222 = T 871 M.

12 Vid. D.L. II.22, Dorandi (2013), p. 164.52–55 = T 709 M. – *Ibid.* IX.6, Dorandi (2013), p. 660.64–65 = T 282 M., and IX.13, Dorandi (2013), p. 664.144–145 = T 705,122–123 M. – Clem. Al. *Strom.* V.8, 50, 2–3, Stählin-Früchtel (1960), pp. 360.22–361.2 = T 609 M. – *Alleg. Hom.* 24, 3, Buffière (1962), pp. 29–30 = T 355, 6–7 M.; 47(b¹) Marcovich. – Demetr. *Eloc.* 191–192, Radermacher (²1967), p. 42.7–12 = T 292 M.; 1 (d²) Marcovich. – Cic. *ND* I.26.74, Ax (1961), p. 29.5–8 = T 302 M. – *Ibid.* III.14.35, Ax (1961), p. 131.5–8 = T 303 M. – *Id. Fin.* II (5.) 15, Reynolds (1998), p. 44.15–20 = T 301 M. – Lucr. *DRN* I.635–711, Flores (2002), pp. 88–94 = T 312 M. – Sen. *Ep.* XII.6–7, Reynolds (1966), pp. 27.22–28.7 = T 352 M., 59 (b) Marcovich.

§ II

Timon of Phlius' severe criticism of Heraclitus' recondite style, denouncing him, in his *Silloi*, as a mere αἰνικτής,¹³ is most likely due to Timon's notorious misanthropy.¹⁴ In fact, obscure language may fulfil the quite legitimate function of warding off unworthy readers. This can be seen in texts whom Sextus Empiricus enumerated as being as difficult as the sayings of Heraclitus: Plato's *Timaeus*, the logical treatises of Chrysippus, the mathematical works of Archimedes and Eudoxus, and, last but not least, the poems of Empedocles.¹⁵ This defence strategy was employed by Cicero particularly in respect to Heraclitus himself. Cicero acknowledges two legitimate ways of using obscure language. Firstly, it may be used on purpose, as did Heraclitus ὁ σκοτεινός; secondly, it may be required, as in Plato's *Timaeus*, by the obscurity of the subject matter.¹⁶

Olearius even adds that Cicero's second line of defence is applicable to Heraclitus, too, his philosophy being no less concerned with Nature than the *Timaeus*: according to Sextus Empiricus, Heraclitus was generally agreed to be a natural philosopher, while there were doubts in some quarters as to whether his philosophy covered Ethics, too.¹⁷ It follows that his subject matter (or at least the greater part of it) was identical with and, by implication, as obscure as the subject matter of the *Timaeus*. What is more, the obscurity of that subject matter, i.e. of Nature, was emphasised by Heraclitus himself, as we happen to know from a quotation in Themistius:¹⁸ "*The nature of things is wont to hide itself*" (φύσις κρύπτεσθαι φιλεῖ). In this famous saying, Heraclitus thus provides himself with a justification for the difficulty of his style.

§ III

Olearius postpones a full discussion of Heraclitus' language and style to a more comprehensive treatment of Heraclitus, which he plans to produce in the future. For the time being, his motive for raising the problem at all has been an entirely

¹³ D.L. IX.6, Dorandi (2013), p. 660.65 = T 282 M. = Timo Phliasius fr. 817, Lloyd-Jones/Parsons (1983), p. 383.

¹⁴ Plin. *HN* VII.19, Mayhoff (1909), p. 28.7–8 = T 560,7–8 M.

¹⁵ S.E. *M.* I.301–303, Mau (1954), pp. 77.18–78.22.

¹⁶ Cic. *Fin.* II (5.) 15, Reynolds (1998), p. 44.15–20 = T 301 M.

¹⁷ S.E. *M.* VII.7, Mutschmann (1914), p. 4.4–6 = T 687,10–12 M.

¹⁸ Them. *Or.* 5, Schenkl-Downey (1965), p. 101.13 = T 754.5 M.; 8(b) Marcovich.

selfish one: considering that Heraclitus' language is so very obscure, Olearius himself can feel entitled at least to a certain degree of obscurity in expounding the sayings of Heraclitus. Olearius frankly admits that he is certainly not the Delian diver once invoked by Socrates when he was struggling with Heraclitus.¹⁹ Possible shortcomings in Olearius' essay will be all the more pardonable as the scholar had to cope with the additional difficulty of Heraclitus' book being not only obscure, but having been destroyed in what Angelo Poliziano famously called the "great shipwreck of ancient literature":²⁰ what Olearius will have to deal with, therefore, is an assortment of mere fragments.

§ IV

Before Olearius can address his subject proper, i.e. the principle of Nature according to Heraclitus, he has first to define what he means by "principle", which he does by quoting two ancient texts, Ps.-Plutarch's *Placita Philosophorum* and Aristotle's *Metaphysics* Δ. Although he claims to pass over what he labels the over-subtle distinctions between "principle" (*archē*) and "element" (*stoicheion*), his quotation from the *Placita* comes precisely from the chapter captioned *On the Difference between Principle and Elements*:²¹ "We call principle, what has nothing prior to it out of which it is produced, but from which (all other things) have been produced". This is supported²² by Aristotle's statement in the *Metaphysics*²² according to which the common feature of all principles is that they are the first item, whence other things exist, come to be, or are understood.

¹⁹ D.L. II.22 Dorandi (2013), p. 164.53–55 = T 12 M.

²⁰ The metaphor goes back to Angelo Poliziano's *Miscellanea* from AD 1489 (chapter 91); see Poliziano (1522), pp. 115^{recto}–115^{verso}; *gratum puto futurum studiosis, si ... tabulas ueluti quaspiam ex hoc litterarum naufragio collectas in corpus aliquod restituamus*.

²¹ Ps.-Plutarch, *Plac.* I.2 (Τίνοι διαφέρει ἀρχή καὶ στοιχεῖα), 875cd, Lachenaud (1993), p. 71, Diels (1879) 275^a21–28: τὰς δ' ἀρχὰς φαμεν εἶναι οὔτε συνθέτους οὔτ' ἀποτελέσματα· οἷον στοιχεῖα μὲν καλοῦμεν γῆν ὕδωρ ἀέρα πῦρ· ἀρχὰς δὲ λέγομεν διὰ τοῦτο, ὅτι οὐκ ἔχει τι πρότερον ἐξ οὗ γεννᾶται, ἐπεὶ οὐκ ἔσται ἀρχὴ τοῦτο, ἀλλ' ἐκεῖνο ἐξ οὗ γηγέννηται.

²² Arist. *Metaph.* Δ.1 1013^a17–19.

§ V

With this conception of “principle” in mind, Olearius addresses the question of what Heraclitus assumes to be the principle of Nature. His first point is that Heraclitus is said by more than one ancient author to take *fire* as his principle. Although this notion is seemingly uncontroversial, Olearius provides evidence for it with remarkable diligence: no less than nine authors are quoted on the matter, among whom five Christian fathers loom large alongside their four pagan counterparts:

- 1) According to Aristotle,²³ the principle *among* the simple bodies, or the principle *of* the simple bodies, was held to be fire by Hippasus of Metapontium and by Heraclitus of Ephesus.
- 2) According to the *Placita Philosophorum* transmitted within Plutarch’s *Moralia*,²⁴ Heraclitus and Hippasus taught that the totality of individual things once came to be from fire and will eventually dissolve again into fire.
- 3) According to Stobaeus,²⁵ Heraclitus and Hippasus call fire the principle of all things.
- 4) According to Diogenes Laertius, Heraclitus thought that everything was composed of fire and would be dissolved into fire.²⁶ The cosmos being one, it is engendered from fire and is burnt up by fire.²⁷

Now the Christian fathers:

- 1) According to Ps.-Justin, Heraclitus calls fire the principle of everything.²⁸
- 2) Witty Hermias, in his derision of pagan philosophy,²⁹ assures us that he would certainly be convinced by Democritus and join in his laughter, were it not for Heraclitus who won him over by tearfully asserting that the principle of everything is fire.
- 3) Clement of Alexandria, whose authority Olearius considers to outweigh all authors quoted up to now, even has a verbatim quotation of Heraclitus which runs like this:³⁰ “The cosmos always was, is, and will be an ever-living fire,

²³ Arist. *Metaph.* A.3 984^a7–8, Primavesi (2012), p. 477 = T 171 M.

²⁴ Plu. *Plac.* I.3 (877cd), Lachenaud (1993), p. 76, Diels (1879) 283^a16–284^a13 = T 399,1–20 M.

²⁵ Stob. *Ecl.* I.10, 14; Wachsmuth (1884), p. 126.7–8, Diels (1879) 283^b3–4 = T 400,1–3 M.

²⁶ D.L. IX.7, Dorandi (2013), p. 660.72–73 = T 705,61–62 M.

²⁷ D.L. IX.8, Dorandi (2013), p. 661.90 = T 705,76–77 M.; 28(d), 51(b⁴) Marcovich.

²⁸ Ps.-Justin *Cohortatio ad gentiles* 3.2, Riedweg (1994), pp. 535–536 = T 606,8–9 M.

²⁹ Herm. *Irris.* 13, Hanson-Joussot (1993), p. 110.5–10 = T 678,4–8 M.

³⁰ Clem. Al. *Strom.* V.14, 104, 2, Stählin-Früchtel (1960), p. 396.10–13 = T 642,7–10 M.; 51(a) Marcovich. Olearius agrees with Estienne (1573), p. 132 that we must read μέτρον ... μέτρον instead of μέτρα ... μέτρα.

kindling in measures and going out in measures.” Olearius is convinced that this quotation is taken from the book “On Nature” which is ascribed to Heraclitus by more than one author.³¹

- 4) The testimony of Eusebius,³² according to which the totality of individual things came to be from fire and will eventually dissolve into fire, cannot count as independent evidence. Olearius points out that Eusebius himself acknowledges that he is quoting from the *Placita Philosophorum*.³³
- 5) Theodoretus, by contrast, is considered as an independent authority.³⁴ He says that Hippasus and Heraclitus thought the universe to be one, unmoved (ἀκίνητον),³⁵ and finite, and that it has fire as its principle.

§ VI

Olearius foresees that at this point even the most benevolent reader will impatiently ask why the unsurprising fact that Heraclitus assumed fire to be the principle of Nature had to be illustrated by this long list of quotations. The reason subsequently given is that there are other ancient authors who attribute a divergent view on the principle of Nature to Heraclitus. But first, in order to forestall them even more forcefully, Olearius further expands the number of witnesses in favour of fire by adding two Roman authorities.

- 1) According to Lucretius, Heraclitus heads the party of those who think fire and fire alone to be the matter of things.³⁶ Olearius remarks that this contention does not necessarily come into conflict with the view held by other sources, according to which already Hippasus championed fire: for describing Heraclitus as the leader of the fire faction does not make him the first in terms of

31 D.L. IX.5, Dorandi (2013), p. 660.56–58 = T 705.48–50 M. -- Clem. Al. *Strom.* V.8, 50, 2, Stählin-Früchtel (1960), p. 360.24–25 = T 609.3–4 M. Olearius' citations of the criticism by Diodotus apud D.L. IX.15, Dorandi (2013), p. 666.178–181 = T 246 M., and of the Suda entry Δ400 (Δηλίου κολυμβητοῦ), Adler (1994), p. 37.20–30 = T 1119 M., are also apt. By contrast, in Plutarch's reference (*Adv. Colotem* 14, 1115 A, Pohlenz-Westman (1959), p. 189.15–16) to a book Περὶ τῶν φυσικῶς ἀπορουμένων, the name of the author has been emended since from Ἡρακλείτου to Ἡρακλείδου, see Heraclides fr. 68 Wehrli.

32 Eus. *PE* XIV.14, 4, Mras-Des Places (1983), p. 295.1–2 = T 848 M.

33 Cf. T 399 M.

34 Theod. *Gr. aff. cur.* IV.12, Canivet (1958), p. 206.11–13 = T 200 M., paraphrasing Theophrastus fr. 225.15–21 Fortenbaugh = T. 199 M.

35 ἀκίνητον Zeller apud Diels (1879) 292^b in *apparatu* (accepted in T 200 M.).

36 Lucr. *DRN* I.635–638, Flores (2002), p. 88 = T 312 M.

chronology; whereas Hippasus lived earlier, Heraclitus was doubtless the far more prominent and important character. Incidentally, Olearius leaves open the question of whether Hippasus' view on fire can be regarded as a historical fact in the first place.

- 2) According to Cicero, Heraclitus said that all things come to be from fire.³⁷ The Stoics reworked Heraclitus' view into their own doctrine of fire as a cosmic principle.³⁸

§ VII

One might think that the question of what Heraclitus held to be the principle of Nature should be settled with that. Yet the matter is more complicated. In a passage in Aristotle's *De anima*,³⁹ Heraclitus is quoted as saying that *if* the exhalation out of which the other things consist is to be equated with the soul, *then* the principle in question must be equated with the soul too. The principle thus defined is something thoroughly incorporeal held in permanent flux. Olearius freely admits his initial incomprehension, while complaining that the Renaissance translation of the *De anima* into Latin by John Argyropoulos failed to provide assistance.⁴⁰ That much seems clear: the principle is equated with the *soul*. Therefore, Olearius will look for further information on Heraclitus' theory of the soul.

According to Theodoretus, Heraclitus ascribed a fiery *nature* to the soul;⁴¹ according to Tertullian,⁴² Heraclitus claimed that the soul *consists of* fire. Taken in isolation, the two statements might seem to lead to the conclusion that Heraclitus equated the principle with the soul in the sense that the principle is fire and the soul is of a fiery nature too. But Olearius immediately sees that this solution is too simple. For, according to the *De anima* passage quoted at the beginning of the present section,⁴³ the middle term linking the two terms "principle" and "soul" is *not* "fire" but "*anathumiasis*", which ordinarily means vapour or exhalation.

³⁷ Cic. *Lucullus* 37, 118, Plasberg (1922), p. 86.12–13 = T 304, 12 M.

³⁸ Cic. *ND* III.14.35, Ax (1961), p. 131.5–8 = T 303 M.

³⁹ Arist. *An.* A.2 405^a25–29 = T 189 M., 66(f) Marcovich.

⁴⁰ Aristoteles latine (1831) 211^a: *Heraclitus quoque principium ait animam esse, quippe cum exhalationem esse, ex qua cetera dicit constare, et maxime incorporeum esse et semper fluere dicat.*

⁴¹ Theod. *Gr. aff. cur.* V.18, Canivet (1958), p. 231.12–14 = T 460–461(a) M., 66(f) Marcovich.

⁴² Tert. *An.* 5,2, Waszink (1947), p. 6.4–12 = T 650 M.

⁴³ Arist. *An.* A.2 405^a25–29 = T 189 M., 66(f) Marcovich.

tion. It must, therefore, be equivalent with *air* in Heraclitus, as the fundamental passage from the *Placita*⁴⁴ to which Olearius has already referred (see section V above) puts beyond doubt: according to this passage, our world comes to be when the fire is quenched. The central feature of that cosmogony is the way in which the remaining simple bodies emerge, i.e. earth, water, and air. The transformations succeed each other in a slightly unorthodox way. The more solid parts of the initial fire are condensed and thus produce earth; then those parts of earth which are slackened under the influence of the remaining fire become water, and finally the water is subjected to *anathumiasis*, i.e. evaporates, thereby becoming air. In other words, *anathumiasis* seen as a process is the coming-to-be of air out of water, and *anathumiasis* seen as a product is air.

If soul is *anathumiasis* in the sense of air, and if, at the same time, soul is the principle, inasmuch as it is of the same nature as the substance which Heraclitus thinks to be the principle, it follows that the principle of nature is *anathumiasis* in the sense of air. Olearius uses this argument to gain access to the difficult *De anima* passage which opened the present paragraph: “Heraclitus, too, says that the soul is of the same nature as the principle, provided that the soul is air, since the other things consist of air, which is the most basic of substances and in permanent movement.”⁴⁵

But if this paraphrase has the virtue of being intelligible, it also has the most unwelcome implication that the principle of nature, out of which all other things consist, is *air*. Olearius baulks at the idea. For it is one thing to attribute to Heraclitus the view that the *soul* is of an airy nature: that much is attested to independently by Tertullian⁴⁶ (the colour of the soul is like that of air), and, above all, by the *Placita*⁴⁷ according to which the world soul is an *anathumiasis* of the moisture within the world, with the soul of individual animals being of the same kind, produced by both the external and the internal *anathumiasis*. But what Olearius bristles at is the idea of *anathumiasis* (in the sense of air) being regarded by Heraclitus as the *principle of nature*; all the more so since, according to the former *Placita* passage,⁴⁸ *anathumiasis* (in the sense of air) is directly traced back

44 Plu. *Plac.* I.3 (877CD) Lachenaud (1993), p. 76, Diels (1879) 283^a16–284^a13 = T 399,1–20 M.

45 Arist. *An.* A.2 405^a25–29 = T 189 M., 66(F) Marcovich: Καὶ Ἡράκλειτος δὲ τὴν ἀρχὴν εἶναι φησὶ τὴν ψυχὴν, εἴπερ τὴν ἀναθυμίασιν, ἐξ ἧς τὰλλα συνίστησι. καὶ γὰρ ἀσωματώτατον δὴ καὶ ῥέον ἀεὶ.

46 Tert. *An.* 9,5, Waszink (1947), p. 11.24–29 = T 651,2–5 M., 116(b) Marcovich, cf. Tert. *An.* 14,4–5, Waszink (1947), p. 18.13–24 = T 652 M., 115(iv) Marcovich.

47 Plu. *Plac.* IV.3 (898D) Lachenaud (1993), p. 146, Diels (1879) 389^a3–7 = T 462 M., 66(F) Marcovich.

48 Plu. *Plac.* I.3 (877CD), Lachenaud (1993), p. 76, Diels (1879) 283^a16–284^a13 = T 399,1–20 M.: Ἡράκλειτος ... ἀρχὴν τῶν ὄλων τὸ πῦρ ... τούτου δὲ κατασβεννυμένου κοσμοποιεῖσθαι τὰ

to water while only very indirectly coming back to fire as to its ultimate principle, taking the detour via water and earth.

Nor will it do to emend the *De anima* passage introduced above: Olearius was at first tempted to replace εἴπερ by ἦπερ in that passage, so that *anathumiasis* (in the sense of air) would be introduced only as an alternative to fire, i.e. as an ultimate principle ascribed to Heraclitus by a small minority.⁴⁹ But how is one to explain Aristotle's subsequent remark that all other things come to be out of *anathumiasis* in the sense of air?

And yet: Olearius still thinks that in a sense his attempt at emendation was a step in the right direction. Although the *Aristotle* passage cannot be changed so as to yield the required meaning, it still remains true that fire and air *can* be perceived as two competing candidates for the principle of Nature as assumed by Heraclitus. That much is attested to by Sextus Empiricus,⁵⁰ according to whom Heraclitus is said to have identified air as the most fundamental element *by some* and fire *by others*.

§ VIII⁵¹

How are we to explain the coexistence of two such mutually exclusive interpretations in antiquity? Olearius is not prepared to believe Heraclitus to have been inconsistent by saying in some passages this and in others that. Interestingly, Olearius does not discuss, in that context, the Aristotelian passages in *Topics* VIII, *Physics* I, and *Metaphysics* Γ,⁵² according to which Heraclitus held that contrary or contradictory predicates may belong to one and the same subject.

As far as the acumen and sincerity of Heraclitus' mind are concerned, Olearius disagrees with Lucretius who claims that Heraclitus was admired by the foolish only (*clarus ob obscuram linguam magis inter inanīs ...*);⁵³ and prefers to

πάντα· πρώτων μὲν γὰρ τὸ παχυμερέστατον αὐτοῦ εἰς αὐτὸ συστελλόμενον γῆν γίνεσθαι, ἔπειτα ἀναχαλωμένην τὴν γῆν ὑπὸ τοῦ πυρὸς φύσει ὕδωρ ἀποτελεῖσθαι, ἀναθυμιάμενον δ' ἀέρα γενέσθαι.

⁴⁹ Olearius envisaged the following emendation of Arist. *An.* A.2 405^a25–27: Καὶ Ἡράκλειτος δὲ τὴν ἀρχὴν εἶναι φησι τὴν ψυχὴν, ἣ π ε ρ τὴν ἀναθυμίασι, ἐξ ἧς τᾶλλα συνίστησι. καὶ γὰρ ἀσωματώτατον δὴ καὶ ῥέον αἰεὶ.

⁵⁰ S.E. *M.* IX.359, Mutschmann (1914), pp. 286.21–287.32 = T 696 M., 116(b) Marcovich.

⁵¹ Due to a printer's mistake, the paragraph numbering erroneously jumps back to section VI at this point. The 1711 reprint of the treatise keeps the wrong numbering.

⁵² See T 146–152 M.

⁵³ Olearius quotes Lucr. *DRN* I.639–644, Flores (2002), p. 90 = T 312 M.

side with better men, like Socrates who admired the depth of Heraclitus' book,⁵⁴ like the Heracliteans who based a philosophical school on that book alone,⁵⁵ and like Clement who called Heraclitus "noble".⁵⁶

But how can we otherwise explain the coexistence of two candidates, fire and air, competing for the role of Heraclitus' first principle of Nature? A possible way out could be to ascribe that peculiar feature of the ancient reception of Heraclitus to his famously obscure way of expressing himself. Heraclitus has as first principle of Nature *neither* air *nor* what we usually call fire, but very small indivisible particles which are being moved permanently at a very high speed, and which, because of their extreme smallness, are not perceived by the senses the way they are. Yet Heraclitus refers to them as fire or air *metaphorically*, as their nature comes very close to that of fire or air.

As far as fire is concerned, the smallness and swiftness of its particles is also emphasized by Plato;⁵⁷ and from Aristotle's *Meteorologica* Olearius quotes the pertinent remark that there exists an important difference between what we usually *call* fire and what really *is* fire.⁵⁸ From a continental point of view, one might think of the well-known statement by Georg Wilhelm Friedrich Hegel according to which the water presented as principle and origin of everything by Thales is not ordinary water but "speculative water".⁵⁹

54 D.L. II.22, Dorandi (2013), p. 164.52–55 = T 12 M. Olearius does not spare a thought for the possible presence of irony in Socrates' famous saying about the Delian diver.

55 D.L. IX.6, Dorandi (2013), p. 660.69–71 = T 705,59–60 M. – Cf. D.L. IX.15, Dorandi (2013), pp. 665.169–666.184 = T 705,143–154 M.

56 Clem. *Strom.* II, 2, 8, 1, 117.3 Stählin-Früchtel = T 628 M.

57 Pl. *Ti.* 61E.

58 Arist. *Mete.* A.3 340^b21–23.

59 Hegel (1833), p. 201: „Die Flüssigkeit ist ihrem Begriffe nach Leben, – das spekulative Wasser, als selbst nach Geistesweise gesetzt, nicht wie die sinnliche Wirklichkeit sich darbietet“.

In Aristotle's *Metaphysics* A.8, there is a passage to which Olearius pays particular attention, taking as a starting point the paraphrase offered by Ernst Soner⁶⁰ in his *Commentarius in 12 Libros Metaphysicorum Aristotelis* (1609):⁶¹

Arist. <i>Metaph.</i> A.8 988 ^b 32–989 ^a 3	Soner's paraphrase according to his autograph
<p>τὰ μὲν γὰρ συγκρίσει [33] τὰ δὲ διακρίσει ἐξ ἀλλήλων γίνεταί, τοῦτο δὲ πρὸς τὸ πρό- [34] τερον εἶναι καὶ ὕστερον διαφέρει πλεῖστον· τῆ μὲν γὰρ ἄν [35] δόξειε στοιχειωδέστατον εἶναι πάντων ἐξ οὗ γίνονται συγκρί- [989a1] σει πρώτου, τοιοῦτο δὲ τὸ μικρομερέστατον καὶ λεπτότατον ἄν [2] εἶη τῶν σωμάτων</p>	<p><i>multum referebat ad prius et posterius i.e. ad assignandum principium, quod prius esse debet omnibus, attendisse, quodnam corporum tenuissimarum et minimarum partium esset, hoc enim maxime elementi rationem subire posse videtur, ex quo primo res minimarum partium et tenuissimorum corporum conjungi possunt. Quare huic rationi maxime consentanea locuti sunt, qui ignem principium fecerunt, is enim est subtilissimarum partium;</i></p>
<p>διόπερ ὅσοι πῦρ ἀρχὴν τιθέασι, μάλιστα [3] ὁμολογουμένως ἄν τῷ λόγῳ τούτῳ λέγοιεν... .</p>	
<p>^b34 τῆ — attested to by β(A^b M C V^k) V^d N^{sup. lin} — was corrupted to γῆ in one important branch of the tradition — γ(E^s L^s) — in some descendants of which γῆ was then either emended to πῦρ — σ(P^b E^b H H^a N W) T —, or transposed further down to ^b35 in front of ἐξ οὗ (γῆ ἐξ οὗ γίνεταί Aldina), or even after it (ἐξ οὗ γῆ γίνεταί), the reading Olearius found in his text. Thus, Olearius was right to delete γῆ, but wrong to explain its presence by mere dittography (γῆ γίνεταί < γίνεταί).</p>	

Here fire is identified as the simple body *with the smallest particles* (μικρομερέστατον) in terms of both size and weight, and this is taken to speak

⁶⁰ Ernst Soner (1572–1612) was appointed professor of medicine and philosophy in 1605 at the academy in Altdorf, a town close to Nuremberg. Previously, on an educational trip in Leiden, he had been converted to the antitrinitarian creed of Fausto Sozini by the Socinians Christoph Ostorod and Andreas Woydowski; see Wallace (1850), p. 435. Back in Altdorf, he developed, in the context of private lectures on Aristotle's *Metaphysics*, his theory of the *eternity of matter*, which he set forth in a commentary on the *Metaphysics* (1609). He never came into conflict with protestant authorities, however, because his commentary was published only posthumously by Johann Paul Felwinger in an abridged version in which the number of offensive passages had been reduced (Jena 1657). For a more detailed account on Soner see Wallace (1850), pp. 434–440; Vollhardt (2013), pp. 226–227, 231–232.

⁶¹ For the text of Aristotle's Greek and for the manuscript readings indicated in the apparatus we have drawn on our edition of *Metaphysics* A (Primavesi 2012, p. 494). The text of Soner's Latin paraphrase is given here as it appears in Soner's autograph (Soner 1609, p. 185), which is kept in the University Library in Erlangen (Ms. 714) and from which we quote. In the present passage, however, Felwinger's abridged version (Soner 1657, p. 137) does not deviate from the autograph.

in favour of identifying fire with the primary simple body, given that the primary simple body must be of a kind that makes it easy to understand that the others are composed of it.

On the basis of this general consensus about the nature of fire, we can see the point in Heraclitus' fire metaphor. But a similar case can be made for air, too, since air is almost as famous as fire for the smallness and mobility of its particles. In the *De anima*, for instance, Aristotle characterizes Heraclitus' *air* both as most incorporeal and as being in permanent flow,⁶² whereas according to Aristotle's own views in *De iuventute*, it is *fire* which is in permanent flow.⁶³ So both terms, fire and air, seem to be appropriate metaphors for small, indivisible, and swiftly moved particles – provided, of course, that it can be shown that Heraclitus really thought such particles to be the first principle of nature. At this point, Olearius becomes aware of the danger of being taken for someone who, suffering from a fashionable kind of jaundice, thinks to be bumping against elementary particles everywhere, although, in fact, there is nothing of the kind:

Ast forsan me corpusculari philosophiae, quae, hodie apud omnes celebratur, favere, corpusculaque – adeo particulas atque ramenta – offendere aliquis opinabitur, ubi nihil eorum occurrit, simili quodam cum ictericis morbo laborantem.

Therefore, he is eager to show that, at least in the case of Heraclitus, the ascription of a version of atomism is based on firm evidence. According to the *Placita*, not only did Empedocles assume very small particles that are prior to the four elements, being, as it were, elements before the elements, but Heraclitus also introduces very small and indivisible particles (ψηγμάτια τινα ἐλάχιστα καὶ ἀμερῆ).⁶⁴ In a similar vein, Stobaeus reports that – at least according to some – Heraclitus held there to be small particles (ψηγμάτια) which are prior to the One.⁶⁵ Yet Olearius deems Stobaeus' passage to remain ambiguous until we have made our choice between two possible readings of the term “the One”.

⁶² Arist. *An.* A.2 405^a25–27 = T 189 M., 66(F) Marcovich.

⁶³ Arist. *VM*.5 470^a3–4: τὸ δὲ πῦρ αἰεὶ διατελεῖ γινόμενον καὶ ῥέον ὡς περ ποταμός.

⁶⁴ Plu. *Plac.* I.13 (883B) Lachenaud (1993), p. 93, Diels (1879) 312^a2–7 = T 405 M. In the 1711 reprint of his essay (in Stanley 1711, p. 847) Olearius will illustrate the meaning of ψηγμάτια with a quotation from Philo *De opificio mundi* 41, Cohn (1896), p. 13.8–9: ἀποτίκτεται μὲν γὰρ ὁ καρπὸς ἐοικώς ἀμερῆσι ψηγμάσι ὑπὸ βραχύτητος μόλις ὄρατοῖς.

⁶⁵ Stob. *Ecl.* I.14,1^k, Wachsmuth (1884), p. 143.18–19, Diels (1879) 312^b6–7 = T 406 M.

Reading A: “The One” refers to *our world* – a usage well attested for Heraclitus by Diogenes Laertius,⁶⁶ Theodoretus,⁶⁷ and Stobaeus.⁶⁸

Reading B: “The One” refers to the one principle of Nature, i.e. to fire.

At first sight, reading B seems to entail a serious problem. For reading B forces us to accept that Heraclitus referred to fire in two different senses.

Sense (i): The ordinary fire, which is already composed of small particles and which is called principle and element in virtue of being the primary simple body. Olearius justifies the attribution to Heraclitus of this derivative notion of “principle and element” by pointing to the habit of calling the four simple bodies “elements”, evidence for which he finds in the *Placita*.⁶⁹

Sense (ii): The small, indivisible, swiftly moved particles (ψηγμάτια). The assumption of this meaning rests on the fact that Heraclitus refers repeatedly to fire in a way which does not correspond to the ordinary simple body of fire but only to what is absolutely prior, i.e. to fire in the sense of indivisible particles. Olearius gives three examples:

According to the *Placita*,⁷⁰ Heraclitus says that absolutely everything emerges from fire and passes away into fire.

According to Stobaeus,⁷¹ Heraclitus says that there is an eternal fire. What is eternal, however, admits of no antecedent.

According to Clement,⁷² Heraclitus says that the world was, is, and will be everlasting fire. Again, there can be no antecedent to a fire that always was, is, and will be.

Olearius concludes that reading the Stobaeus passage along the lines of B is possible: fire in the sense of small, indivisible, swiftly moved particles can well be said to be prior to fire in the sense of the ordinary simple body.

66 D.L. IX.8, Dorandi (2013), p. 661.89 = T 705, 75–76 M.

67 Theod. *Gr. aff. cur.* IV.15, Canivet (1958), p. 207.9–15 = T 882 M.

68 Stob. *Ecl.* I.22, 3^b; Wachsmuth (1884), p. 199.10–13, Diels (1879) 327^b5–9 = T 423–424(b) M.

69 Plu. *Plac.* I.2 (875cd) Lachenaud (1993), p. 71, Diels (1879) 275^a21–28: τὰς δὲ ἀρχὰς φαμεν εἶναι οὐτε συνθέτους οὐτ' ἀποτελέσματα· οἷον στοιχεῖα μὲν καλοῦμεν γῆν ὕδωρ ἀέρα πῦρ· ἀρχὰς δὲ λέγομεν διὰ τοῦτο, ὅτι οὐκ ἔχει τι πρότερον ἐξ οὗ γεννᾶται, ἐπεὶ οὐκ ἔσται ἀρχὴ τοῦτο, ἀλλ' ἐκεῖνο ἐξ οὗ γέγνηται.

70 Plu. *Plac.* I.3 (887c) Lachenaud (1993), p. 76, Diels (1879) 284^a1–2 = T 399,3–5 M.

71 Stob. *Ecl.* I.1.29^b; Wachsmuth (1884), p. 35.7–8, Diels (1879) 303^b8–10 = T 788,4–6 M.; 28(d¹) Marcovich.

72 Clem. *Al. Strom.* V.14, 104, 2, Stählin-Früchtel (1960), p. 396.10–13 = T 642,7–10 M.; 51(a) Marcovich.

§ IX⁷³

So it seems that Heraclitus, too, has adopted the one and only true principle of nature, i.e. simple, indivisible, imperceptible matter, which you may call *σωμάτια* and *μονάδες* with Leucippus, *ναστά* with Democritus, *ἀδιαίρετα* with Metrodorus of Chios, *ἄτομοι* with Epicurus, or, finally, *ψηγμάτια* with Heraclitus, no matter whether you define it with Pierre Gassendi, in Epicurean terms, as *plena quaedam, seu vacui expers, solidaque adeo natura, quae non habet, qua ex parte, aut quomodo fissuram admittat, sicque dissoluatur*,⁷⁴ or as *materia simplex, indivisibilis, & insensibilis*.

§ X⁷⁵

The interpretation proposed so far cannot be refuted by popular opinion, according to which atomism in antiquity was strictly confined to Leucippus, Democritus, and Epicurus. Atomism is much older than that. We know from Strabo⁷⁶ and Sextus Empiricus⁷⁷ that, according to Posidonius, Moschus of Sidon invented atomism even before the Trojan War.

Himerius the Sophist emphasizes that the atomism of Epicurus does not at all differ from the archaic Chaos theories.⁷⁸ This is of particular interest in the present context, since Chaos was treated in Orphic philosophy, from which, according to Clement, Heraclitus took over several aspects into his own thought.⁷⁹

⁷³ As a consequence of his incorrect numbering of the previous paragraph, Olearius has reached here his § VII.

⁷⁴ Olearius refers to “Gassend. Phys. Sect. I.III, c.V. p. 254” which is almost accurate, but not quite: in fact, he is quoting Gassendi (1658), p. 258: “Heinc est quamobrem Epicuro definiente Atomum πλήρη τινὰ φύσιν ἄτε οὐκ ἔχουσαν ὅπη ἢ ὅπως διαλυθήσεσθαι, ipse interpretatus fuerim, *Plenam quandam, seu vacui expertem, solidamque adeo naturam; quippe quae non habeat qua ex parte aut quomodo fissuram admittat, sicque dissoluatur*”, which in turn paraphrases Epicur. *Ep. ad Hdt.* 41: ταῦτα δέ ἐστιν ἄτομα καὶ ἀμετάβλητα, εἶπερ μὴ μέλλει πάντα εἰς τὸ μὴ ὄν φθαρῆσεσθαι, ἀλλ’ ἰσχύοντα ὑπομενεῖν ἐν ταῖς διαλύσεσι τῶν συγκρίσεων πλήρη τὴν φύσιν ὄντα καὶ οὐκ ἔχοντα ὅπη ἢ ὅπως διαλυθήσεται”.

⁷⁵ § IX in Olearius (1697), § VIII in Stanley (1711).

⁷⁶ Strab. XVI.16, 24 (757.24–27 Casaubon), Radt (2005), p. 330 = Posidonius fr. 285 Edelstein-Kidd.

⁷⁷ S.E. M. IX.363, Mutschmann (1914), p. 287,8–11 = Posidonius fr. 286 Edelstein-Kidd.

⁷⁸ Him. ap. Photium Cod. CCXLIII, Henry (1971), p. 67 (= Bekker 357^a1–5).

⁷⁹ Clem. Al. *Strom.* VI.2, 17, 1–2, Stählin-Früchtel (1960), pp. 435.20–436.7 = T 643 M., 66(a) Marcovich.

Further demonstration is considered superfluous, since Ralph Cudworth already showed, in his book *The Intellectual System of the Universe*, that differing versions of atomism were held by practically all ancient philosophers. Olearius knows this from browsing through Cudworth's book during his year in Oxford. In his home town of Leipzig, however, he finds himself unable to obtain a copy of Cudworth's book, but he remembers Cudworth's failure to prove his point in the case of Heraclitus: *Quod tamen de Heraclito speciatim demonstrasse eum non memini*.⁸⁰

§ XI⁸¹

One feature of the Heraclitean particles remains to be elucidated: what does Stobaeus mean when he reports that according to Heraclitus fire is both eternal (αἰδίων) and subject to periodical change (περιοδικόν)?⁸² It seems that fire, i.e. the particles of fiery nature, is eternal in itself and that the totality of things cyclically comes to be out of these fiery particles and passes away into them.

According to Clement,⁸³ we may also say that Heraclitus postulates two universes, one of which is eternal and the other perishable, as long as we realize that the perishable universe is nothing but the eternal one *in a certain state* (τὸν κατὰ τὴν διακόσμησιν εἰδῶς οὐχ ἕτερον ὄντα ἐκείνου πως ἔχοντος). On this reading, there is no contradiction between the reference to two universes and the Heraclitean assertion, quoted earlier, that the universe is one.⁸⁴ In this context,

80 The relevant evidence for Heraclitus is indeed missing in Cudworth (1678), since he ascribes to *Heraclides Ponticus* alone a series of concepts (ψήγματα καὶ θράυσματά τινα ἐλάχιστα) that is in fact a combination of notions attested to by Stobaeus I, 14, 1^k, 143,15–23 Wachsmuth for Empedocles (θράυσματα ἐλάχιστα), Heraclitus (ψήγματα), and Heraclides Ponticus (θράυσματα); see Cudworth (1678), p. 16: “Heraclides that resolved all Corporeal things into ψήγματα καὶ θράυσματά τινα ἐλάχιστα, *certain smallest Fragments of Bodies*.”

81 § IX in Olearius (1697).

82 Stob. *Ecl.* I.1.29^b; Wachsmuth (1884), p. 35.7–8, Diels (1879) 303^b8–10 = T 788,4–6 M.; 28(d¹) Marcovich.

83 Clem. Al. *Strom.* V.14, 104, 1, Stählin-Früchtel (1960), p. 396.6–9 = T 642,3–6 M., 51(a) Marcovich.

84 D.L. IX.8, Dorandi (2013), p. 661.90 = T 705,76–77 M.; 51(b⁴) Marcovich; Theod. *Gr. aff. cur.* IV.15, Canivet (1958), p. 207.9–15 = T 882 M.; Stob. *Ecl.* I.22, 3^b; Wachsmuth (1884), p. 199.10–13, Diels (1879) 327^b5–9 = T 423–424(b) M.

Clement even provides a literal quotation from Heraclitus on the various states of the one fire:⁸⁵

“the transformations (turnings) of Fire:
first sea,
and of the sea the half is earth
the half prester (burning)”.

But really, there are only two states of the universe: the first, in which fire or the fiery particles are *not* transformed and distributed, and the second, in which they have been transformed, by changes and condensation, into the other simple bodies. They make up our world until, by rarefaction, they are dissolved again into fire. That is why he calls *our* world the perishable universe.

The two passages from Stobaeus and Clement make it sufficiently clear that Heraclitus thought his principle, i.e. fire in the sense of fiery particles, to be *eternal*. But the particles are not only eternal, they are also *eternally moved*: according to a passage from the *Placita*,⁸⁶ Heraclitus denies that there is anything like rest and immobility in his living universe: “that is for corpses” he says and attributes eternal movement to eternal things, and perishable movement to perishable things. Those eternal things must be the fiery particles (ψηγγμάτια).

Heraclitus’ unswerving belief in the eternal *existence* of fiery matter was only to be expected, since virtually none of the first natural philosophers could disentangle himself from what Olearius, from his Christian point of view, must consider insane superstition (*delirium*). The *creatio ex nihilo* is a mystery to be grasped only by those who are deemed worthy of divine revelation. The rest of humanity, including the wisest, stubbornly adhere to the dogma so well put by Lucretius: *Nullam rem e nihilo gigni diuinitus vnquam*.⁸⁷

⁸⁵ Clem. Al. *Strom.* V.14, 104, 3, Stählin-Früchtel (1960), p. 396.14–15 = T 642,11–13 M., 53(a) Marcovich.

⁸⁶ Plu. *Plac.* I.23 (884c) Lachenaud (1993), p. 96, Diels (1879) 320^a5–9 = T 412 M., 40(d¹) Marcovich.

⁸⁷ Lucr. *DRN* I.150; Flores (2002), p. 52.

§ XII⁸⁸

The principle of Nature according to Heraclitus can thus be regarded as identified. But a theologian cannot help asking whether this is the end of the matter. An affirmative answer seems to be suggested by Aristotle's accusation of all earlier natural philosophers, including Heraclitus.⁸⁹ Although, says Aristotle in *Metaphysics* A, there are four types of causes – the material cause, the formal cause, the efficient cause, and the final cause – the only cause properly grasped by the first naturalists prior to Anaxagoras is the material one, i.e. the eternal substratum of all change. They refrained, however, from asking the obvious question of what brought about this change. Before Anaxagoras managed to finally introduce the *voûç*, thinkers were ignorant of the efficient cause, the first mover of the universe, the demiurge. It is true that Aristotle's treatment of his predecessors is often inordinately aggressive for entirely self-interested reasons. Yet in this case, he is joined in his harsh judgement by other scholars. But if Aristotle is right in *Metaphysics* A, the early naturalists up to and including Heraclitus were not only incapable of grasping the *creatio ex nihilo*, they were downright atheists.

§ XIII⁹⁰

Ralph Cudworth, in his book on *The Intellectual System of the Universe* (1678), strives to deliver the early Ionian naturalists from being suspected of atheism. In the same year of AD 1678 Cudworth was joined by Samuel Parker, then archdeacon of Canterbury, later also bishop of Oxford. From Parker's book *On God, and Divine Providence*⁹¹ Olearius quotes the suggestion that the early Naturalists did not purposefully *abolish* the efficient cause. It simply never occurred to them to mention it, their purpose being to identify the material substratum, which in itself was demanding enough. As an alternative way-out, Parker suggests, drawing on a passage in Simplicius,⁹² that the early philosophers, precisely because they assumed the efficient cause to be a *super-natural* one, had no reason to mention it when examining the *natural* causes. Olearius refrains from commenting on Par-

⁸⁸ § X in Olearius (1697).

⁸⁹ Arist. *Metaph.* A.3 983^b6–13 = T 171(a) M., *ibid.* 984^a16–22 and 25–27.

⁹⁰ § XI in Olearius (1697).

⁹¹ Parker (1678), sectio V, p.10, Disputatio I. *An Philosophorum ulli, & quinam Athei fuerunt?*

⁹² Simplic. *In phys.* 465,17–19 Diels: ὁ δὲ λόγος τοῖς τοιοῦτοις περὶ τῶν φυσικῶν ἀρχῶν ἐγένετο, ὡσπερ καὶ τῷ Ἀριστοτέλει ἐν ταύτῃ τῇ πραγματείᾳ, ἀλλ' οὐχὶ περὶ τῶν ὑπὲρ φύσιν.

ker's second suggestion, but he supports the first one quoting Aristotle's description⁹³ of how the later natural philosophers were gradually led by truth itself, as it were, to discover further causes: Aristotle's account speaks against the first philosophers having deliberately abolished these causes.

§ XIV⁹⁴

But Olearius is afraid that the defence strategies achieve nothing in the case of Heraclitus who was, or so Olearius believes, a contemporary of Anaxagoras. The latter's discovery of the *nous* could and should have induced Heraclitus to consider the possibility of an efficient cause.

So we seem to be stuck in a dilemma: while there are tenets ascribed to Heraclitus which seem to cast a very unfavourable light upon his religious beliefs, we also encounter testimonies which suggest that he did *not* eliminate God, as first cause, mover, and demiurge. It remains to be seen which of these two assessments has better credentials.

§ XV⁹⁵

The first reason for denying Heraclitus the belief in a *divine creator* is that he seems to have regarded his natural principle itself – i.e. “fire” – as a god. According to Clement,⁹⁶ both Hippasus and Heraclitus proclaimed fire a divinity. According to the more detailed account of Stobaeus,⁹⁷ Heraclitus' divine fire is both eternal and periodically returning. Against the gnostic doctrine of Marcion, according to which our world is too corrupt to be the creation of a good God, Tertullian argues the converse: while the Greek word for “world”, *kosmos*, emphasises the beautiful order of our world, the pagan philosophers, among them Heraclitus, introduce strange gods unworthy of this world, one such being fire.⁹⁸

⁹³ Arist. *Metaph.* A.3 984^b8–14.

⁹⁴ § XII in Olearius (1697).

⁹⁵ § XIII in Olearius (1697).

⁹⁶ Clem. Al. *Protr.* IV.64.2, Marcovich (1995), p. 97, 9–10 = T 611,4–5 M.

⁹⁷ Stob. *Ecl.* I.1.29^b, Wachsmuth (1884), p. 35.7–8, Diels (1879) 303^b8–10 = T 788,4–6 M.; 28(d¹) Marcovich.

⁹⁸ Tert. *Adv. Marcionem* I.13, 3, Braun (1990), p. 158.13–18 = T 648 M.

Olearius refutes this criticism by pointing out that treating the elements or the material principles of the world as gods has been nothing but a poetic convention from Hesiod onwards. Heraclitus' adherence to this convention was correctly pointed out already by the author of the *Homeric allegories*, presumably intended to further enhance the deliberate and proverbial obscurity of his text.⁹⁹

It is more promising to charge Heraclitus with claiming that this world has never been created by *anyone*, either god or human, since it has always existed. For the relevant Heraclitean statement is quoted *verbatim* by both Plutarch¹⁰⁰ and Clement.¹⁰¹ The crucial point here is to keep in mind the Heraclitean distinction between eternal universe and perishable universe, also attested by Clement.¹⁰² The world whose createdness Heraclitus denies is of course not our perishable world, but its eternal substratum, namely fire or the fire particles. Given that fire always was, is, and will be it goes without saying that it cannot have been created. But stating that much is only to say what all ancient natural philosophers say: matter is eternal, there being no *creatio ex nihilo*. Denying the *creatio ex nihilo* does of course not entail denying creation altogether. On the contrary: some natural philosophers effortlessly combine believing in eternal matter with believing in a divine demiurge.

Instead, one should focus on the coming-to-be of the perishable universe from the eternal universe. This is the place where we must look for the presence or absence of a divine creator.

At first sight, Heraclitus appears to think that fire is capable of doing the job. For this fire is no inert matter, devoid of movement, but is characterised as ever-living and eternally moving, as we know from the *Placita*.¹⁰³ On that count, a divine mover might seem superfluous.

Nor does Heraclitus make mention of a divine creation anywhere in his chronicle of the coming-to-be of the perishable cosmos. It is all about condensation and rarefaction, the two πάθη of the eternal fire, as Hermias puts it.¹⁰⁴ If it is true, that they are said to be brought about καθ' εἰμαρμένην, *secundum fatum*, as we know

⁹⁹ *Alleg. Hom.* 24, 3, Buffière (1962), pp. 29–30 = T 355,6–7 M.; 47(b') Marcovich.

¹⁰⁰ Plu. *De animae procreatione* 5, 1014A, Hubert-Drexler (1959), p. 148.2–3 = T 499,5–6 M.; 51(c) Marcovich.

¹⁰¹ Clem. Al. *Strom.* V.14, 104, 2, Stählin-Früchtel (1960), p. 396.10–13 = T 642,7–10 M.; 51(a) Marcovich.

¹⁰² See above § XI n. 81: Clem. Al. *Strom.* V.14, 104, 1, Stählin-Früchtel (1960), p. 396.6–9 = T 642,3–6 M., 51(a) Marcovich.

¹⁰³ Plu. *Plac.* I.23 (884c) Lachenaud (1993), p. 96, Diels (1879) 320^a5–9 = T 412 M., 40(d') Marcovich.

¹⁰⁴ Herm. *Irris.* 13, Hanson-Joussot (1993), p. 110.5–10 = T 678,4–8 M.

from Diogenes Laertius,¹⁰⁵ the *Placita*,¹⁰⁶ and Theodoretus.¹⁰⁷ But according to the *Placita* and Theodoretus, εἰμαρμένη is just another word for ‘necessity’.¹⁰⁸ So a system emerges, where ever-living and eternally moved particles are, of necessity, subject to condensation and rarefaction in fixed intervals, which causes the coming-to-be and passing-away of our perishable world. At first glance, it seems to follow that there is no room for a divine creator. And yet Olearius endeavours to show that Heraclitus ascribed the periodical condensation and rarefaction of these particles to *God*. The crucial point here is the nature of εἰμαρμένη, regulating the periodical condensation and rarefaction. To claim that Heraclitus uses both εἰμαρμένη and ἀνάγκη in order to characterise events as taking place of necessity certainly falls short of providing a conceptual analysis of that necessity.

Stobaeus provides such a conceptual analysis by defining the Heraclitean meaning of εἰμαρμένη in the following way:¹⁰⁹ *a logos that, acting as a demiurge, creates beings out of the alternation of contrary movements* (λόγος ἐκ τῆς ἐναντιοδρομίας δημιουργὸς τῶν ὄντων). It seems plausible to take ἐναντιοδρομία to denote periodic alternation of condensation and rarefaction. Besides the Stobaeian definition of the Heraclitean εἰμαρμένη, Olearius can quote yet another one, this time from the *Placita*:¹¹⁰ “εἰμαρμένη is a *logos* permeating the substance of the universe” (λόγον τὸν διὰ τῆς οὐσίας τοῦ παντὸς διήκοντα). In both definitions the ontological status of the *Logos* remains to be clarified. Olearius takes the bold step of locating the Heraclitean *Logos* firmly within the first category, i.e. within the category of substance: he paraphrases *Logos* by means of “A substance equipped with intellect or mind” (*substantia, intellectu siue mente praedita*).

From his interpretation of the two definitions Olearius infers that Heraclitus’ εἰμαρμένη is to be identified with Anaxagoras’ νοῦς – which is the mind that administers the Universe (νοῦς πάντα διοικῶν) – that is to say: with *God*. Olearius feels reassured by Stoic philosophy, about which Cicero¹¹¹ says that it owes much to Heraclitus. For the Stoics explicitly equated εἰμαρμένη, or *fatum*, with *God*, as

105 D.L. IX.7, Dorandi (2013), p. 660.73–74 = T 705,61–62 M. – *Ibid.* 8, Dorandi (2013), p. 661.91–92 = T 705,77–78 M., 28(d) Marcovich.

106 Plu. *Plac.* I.27 (884 f) Lachenaud (1993), p. 98, Diels (1879) 322^a2–4 = T 415 M., 28(d¹) Marcovich.

107 Theod. *Gr. aff. cur.* IV.13, Canivet (1958), p. 258.9–10 = T 417 (c) M.

108 See T 415 M. and T 417 (c) M.

109 Stob. *Ecl.* I.1, 29^b, Wachsmuth (1884), p. 35.7–8, Diels (1879) 303^b8–10 = T 788,4–6 M.; 28(d¹) Marcovich.

110 Plu. *Plac.* I.28 (885A) Lachenaud (1993), p. 99, Diels (1879) 323^a2–6 = T 419,1–4 M.; 28(d¹) Marcovich.

111 Cic. *ND* III.14.35, Ax (1961), p. 131.5–8 = T 303 M.

Olearius goes on to illustrate by quoting Diogenes Laertius on Zeno,¹¹² Tertullian on Zeno,¹¹³ and Lactantius on Chrysippus and Zeno.¹¹⁴ The inference from the Stoics back to Heraclitus is shown to be a valid one precisely by the two definitions of Heraclitean εἰμαρμένη already quoted.

Olearius considers his reading of *Logos* warranted both by the fact that it can act as a *demiurge*, and by the use made of the concept of the *Logos* in Platonism and (as already shown) by the Stoics: “*Vbi si liberius λόγου vocem, per substantiam intellectu, menteque praeditam, me interpretatum esse quis dixerit, interpretationem illam adiecta voce δημιουργός, acceptione item vocis λογος apud Platonicos, imo & Stoicos ... tuebor*”.

But the decisive confirmation of this interpretation of *Logos* in Heraclitus is provided by Clement of Alexandria according to whom Heraclitus wants to say that fire is transformed and everything is administered by *Logos and God*.¹¹⁵

Finally, Olearius tries to give a comprehensive account of the activity of this God by merging the two definitions of εἰμαρμένη in the following way: “*a substance equipped with intellect or mind, which is permeating the substance of the universe and thereby acts as a demiurge and creates beings out of the alternation of contrary movements” (*λόγος ὁ διὰ τῆς οὐσίας τοῦ παντός διήκων, καὶ ἐκ τῆς ἐναντιοδρομίας δημιουργός τῶν ὄντων).

§ XVI¹¹⁶

Olearius concludes that Heraclitus should be acquitted of the charge of atheism, unless further evidence to the contrary is provided, and that we should rather say that, for some unfathomable reason, he simply failed to *mention* God among his first principles. Olearius further claims that in the *ethical* fragments of Heraclitus there is not the slightest trace of atheistic corruption; the demonstration of that point is, however, postponed. For the time being, he is content to bring to the fore three crucial pieces of evidence:

¹¹² D.L. VII.135, Dorandi (2013), p. 553.1103–1104 = SVF I.102.

¹¹³ Tert. *Apol.* 21,10, Dekkers (1954), p. 124.44–49 = SVF I.160.

¹¹⁴ Lactant. *Div.* I, 5, Heck-Wlosok (2005), p. 19.7–14 = SVF II.1025 and SVF I.162.

¹¹⁵ Clem. Al. *Strom.* V.14, 104, 4, Stählin-Früchtel (1960), p. 396.15–18 = T 642,13–15 M., 53(a) Marcovich.

¹¹⁶ § XIV in Olearius (1697).

- Divine Socrates would scarcely have held the writings of Heraclitus in the high esteem illustrated by the anecdote of the Delian diver,¹¹⁷ had he felt that these writings were tainted by the plague of atheism.
- The Church Father Athenagoras counted him – because of his exile and alongside Pythagoras, Democritus, and Socrates – among the martyrs of the ubiquitous struggle of baseness against virtue.¹¹⁸
- Justin Martyr even deemed both him and Socrates worthy of being called Christians, because they lived according to Scripture, even though they were considered atheists.¹¹⁹

Conclusion: Olearius, Heraclitus, and Aristotle *De Caelo* Γ.5

As to the putative *theism* of Heraclitus, Olearius found in Stobaeus the doxographical report according to which Heraclitus ascribed the periodical condensation and rarefaction of the “atoms” to the activity of a *Logos* acting as a *demiurge*.¹²⁰ Furthermore, Clement of Alexandria interprets this power by means of the formula “*Logos* and God”.¹²¹ But we will, of course, doubt that the dogmatic use of the latter formula would have been approved of without qualification by Heraclitus himself, who held that

„One (*being*), the only (*truly*) wise,
is both unwilling and willing to be called by the name of Zeus“.¹²²

117 D.L. II.22, Dorandi (2013), p. 164.53–55 = T 12 M.

118 Athenag. *Legatio Pro Christianis* 31.1.5–10, Marcovich (1990), p. 99 = T 605 M.

119 Justin. Mart. *Apol.* I. 46, 3, Marcovich (1994), p. 97,8–10 = T 601,2–4 M.: καὶ οἱ μετὰ λόγου βιώσαντες Χριστιανοὶ εἰσι, κἄν ἄθεοι ἐνομίσθησαν, οἷον ἐν Ἑλληνισμῷ μὲν Σωκράτης καὶ Ἡράκλειτος καὶ οἱ ὅμοιοι αὐτοῖς.

120 Stob. *Ecl.* I 1, 29^b; Wachsmuth (1884), pp. 35.7–8, Diels (1879) 303^b8–10 = T 788,4–6 M.; 28(d¹) Marcovich.

121 Clem. Al. *Strom.* V.14, 104, 4, Stählin-Früchtel (1960), p. 396.15–18 = T 642,13–15 M., 53(a) Marcovich. Contra e.g. Bremer / Dilcher 2013: 609: “Die archaisierende Hyostasierung des Logos zu einer Subsanz oder göttlichen Macht ... ist ebenso wenig angemessen wie die zu einer materiellen Wirklichkeitskomponente”.

122 Clem. Al. *Strom.* V 14, 115, 1 = T 636 M., 84 Marcovich, as translated by Marcovich 1967: 445.

As far as the *Atomism* of Heraclitus is concerned, Olearius quotes two texts, by Ps.-Plutarch¹²³ and Stobaeus respectively,¹²⁴ which ascribe to Heraclitus the assumption of very small and indivisible particles (ψηγγμάτια or ψήγγματα) prior to the One. But in fact, these two texts cannot count as two independent testimonies, since they go back to one and the same doxographical source.¹²⁵ That doxographical source, in turn, owes the key term ψήγμα neither directly to Heraclitus himself, nor, as the late Karl Reinhardt thought, to Posidonius,¹²⁶ but, as Andrei Lebedev has pointed out, to *Aristotle*.¹²⁷

In *De caelo* Γ.5, Aristotle mentions those material monists who, as does for instance Heraclitus, posit fire as the element without reducing it to particles of a specific geometrical form:¹²⁸ “Others, again, do not express any opinion on the geometrical figure – viz. of fire particles –, but simply regard it – viz. fire – as the body of the finest parts, and they further say that the other bodies come to be out of its combination as if gold-dust were melted down” (οἱ δὲ περὶ μὲν σχήματος οὐδὲν ἀποφαίνονται, λεπτομερέστατον δὲ μόνον ποιοῦσιν, ἔπειτ’ ἐκ τούτου συντιθεμένου φασὶ γίνεσθαι τᾶλλα καθάπερ ἂν εἰ συμφυσωμένου ψήγματος).

Aristotle quotes a *metallurgical simile* (καθάπερ ἂν εἰ συμφυσωμένου ψήγματος) and he reports that this simile was used by the philosophers in question in order to illustrate the composition of *other* simple bodies out of fine-grained fire. Andrei Lebedev has both plausibly attributed the simile quoted

123 Plu. *Plac.* I.13 (883B) Lachenaud (1993), p. 93 = T 405 M.

124 Stob. I, 14, 1^k, Wachsmuth (1884), p. 143.15–22 = T 406 M.

125 This is shown by the juxtaposition of the two chapters Περί ἐλαχίστων in Diels (1879) 312^a2–7 and 312^b1–10. The common source is plausibly called “Aëtios” by Diels, but nothing hinges on the name.

126 Reinhardt (1926), p. 33: “Doch wie dem auch sei, hier drängt sich die Vermutung auf, daß auch Aëtius in seinem Kapitel περὶ ἐλαχίστων (I 13, S. 312 Diels Doxogr.) sich auf Poseidonios gründe”.

127 See Lebedev (1980), p. 48 (English summary), on the relationship between Diels (1879) 312^a2–7 / 312^b1–10 and Arist. *Cael.* Γ.5 304^a18–21 (= T 181 M): “In § 9 the dependence of Aetios on Aristotle is demonstrated”. We are dealing here with an important piece of evidence for the more general claim, by Jaap Mansfeld, according to which the doxographic tradition which was summarized in the *Placita philosophorum* did not start with Theophrastus, as Hermann Diels would have it, but owes much to Aristotle himself. See most recently Mansfeld-Primavesi (2012), p. 32: “Die spätere doxographische Literatur ... geht also zum Teil auf Aristoteles selbst zurück”.

128 Arist. *Cael.* Γ.5 304^a18–21 = T 181 M.

by Aristotle to Heraclitus, and claimed that Aristotle has distorted the original meaning of the simile.¹²⁹

The crucial term here is ψήγμα, the term which has been preserved by the doxographical tradition on Heraclitus.¹³⁰ It is a *vox Ionica* (Lebedev) which denotes crude metal, especially gold dust.¹³¹ Accordingly, the clause συμφωσσωμένον ψήγματος refers to the purification of impure gold dust by way of *smelting*, or to the *melting down* of relatively pure gold dust in order to cast it in moulds.¹³² By and large, the simile can well be meant to fulfil the function reported by Aristotle, i.e. to illustrate the composition of other elements out of fire. It is, of course, true that the simile itself does not describe the transformation of gold into *another element*; such a pedantic correspondence is not to be expected in a successful simile anyway. But transforming unsightly gold dust into a gleaming, solid bar of gold bullion changes the outward aspect of the material to such an extent that the comparison with elemental change from fire to a more solid element would not seem inappropriate at all. On the other hand, Aristotle seems to be mistaken in inferring from the “gold dust” image a *corpuscular* theory of fire, and, accordingly, in ascribing to Heraclitus the concept of small, indivisible *fire particles* as the ultimate substratum of elemental change:¹³³ in that respect, Lebedev’s criticism is entirely justified. But it seems all the more likely that the simile *was* meant to illustrate elemental change from fire to other elements already in Heraclitus, or

129 See Lebedev (1979), p. 22: “The contradiction between the authentic wording and unauthentic meaning of ΣΨ [= the συμφωσσωμένον ψήγματος-comparison] may be resolved only on the assumption that the simile is genuine but in H. had different connotations and was misunderstood by Aristotle who ascribed pyknosis to all “monists” on *a priori* grounds”.

130 Diels (1879) 312^a2–7 and 312^b1–10.

131 Lebedev (1979), p. 23: „a) ore, alloy, μίγμα of gold and silver, electrum, since the term was often applied to unpurified gold-dust; b) as roughly equivalent to „gold“, *metallum rude* intended for casting in moulds if (relatively) pure ψήγμα is meant.“

132 Lebedev (1979), p. 23: „Συν- in συμφωσάω does not necessarily express the idea of syn-thesis (against LSJ): cf. the meaning of συν- in συντήκω, συγχωνεύω. The most natural meaning of συμφωσάω (cf. Latin **conflare**) is either a) to smelt, to purify metal, to separate the compounds of the alloy, or b) to melt, to cast, to mould. Thus we are faced with two possibilities in interpreting ΣΨ [= the συμφωσσωμένον ψήγματος-comparison]: a) the smelting – διάκρισις – interpretation and b) the melting – μετασχημάτισις – interpretation ...“

133 Contra e.g. Bremer / Dilcher (2013), p. 617: “Auch die Anlehnung an die aristotelische Konstruktion, Heraklit habe mit dem Feuer in Fortführung der milesischen Linie ein kosmisches Substrat oder einen Urstoff angeben wollen ... , erweist sich als unangemessen”. The fire particles envisaged by Aristotle would be not unlike the πυρίδια attested for Xenophanes; cf. Xenophanes A 22 Diels-Kranz (p. 122, 22–23): φησὶ δὲ καὶ τὸν ἥλιον ἐκ μικρῶν καὶ πλείονων πυριδίων ἀθροίεσθαι.

else it would have scarcely occurred to Aristotle to misinterpret the simile in the way refuted by Lebedev.

Aristotle's "corpuscular" interpretation of the simile was, in any case, adopted by the doxographical tradition, so that Olearius' attribution of "atomism" to Heraclitus is based on the correct interpretation of an unequivocal, if partly misleading, piece of ancient evidence.

In order to win Heraclitus over to Cudworth's *Intellectual System* – or rather, to the kingdom of God –, Olearius has worked through the extensive evidence with such meticulous attention to detail that he must count as a pioneer of early modern research on Heraclitus. In particular, he has been able to track down a few texts which say *expressis verbis* all that he needs in support of his picture of Heraclitus as a pious Atomist: according to the doxographic tradition, Heraclitus regarded fire atoms as the ultimate material cause, according to Clement of Alexandria, he identified the efficient cause with *Logos and God*.

Bibliography

- Adler, Ada, ed. (1994): *Suidae Lexicon*, pars II Δ–Θ, editio stereotypa editionis primae (MCMXXXI). Stuttgart: B. G. Teubner.
- Aristoteles latine (1831): *Aristoteles latine interpretibus variis edidit Academia regia Borussica*, Berlin: Georg Reimer.
- Ax, Wilhelm, ed. (1961): *M. Tulli Ciceronis scripta quae manserunt omnia de Natura Deorum*. Stuttgart: B. G. Teubner.
- Braun, René, ed. (1990): *Tertullien, Contre Marcion*, Tome I (Livre I): introduction, texte critique, traduction et notes. Paris: Éditions du Cerf.
- Bremer, Dieter and Dilcher, Roman (2013): "§ 15. Heraklit", In: Flashar, Helmut and Bremer, Dieter and Rechenauer, Georg (eds.) *Die Philosophie der Antike*. Bd. 1: Frühgriechische Philosophie, Basel: Schwabe, pp. 601–656.
- Brucker, Johann Jakob (1742): *Iacobi Brvckeri Regiae Scient. Societatis, Qvae Berolini floret, Membri Historia Critica Philosophiae a mvndi incvnavblvis ad nostram vsqve aetatem dedvcta*. Tomvs primvs. Leipzig: Weidemann and Reich.
- Buffière, Félix, ed. (1962): *Héraclite. Allégories d'Homère*: texte établi et traduit. Paris: Les belles lettres.
- Canivet, Pierre, ed. (1958): *Théodoret de Cyr, Thérapeutique des maladies hellénistiques*: texte critique, introduction, traduction et notes. Paris: Éditions du Cerf.
- Cohn, Leopold, ed. (1896): *Philonis Alexandrini opera quae supersunt*, vol. I. Berlin: G. Reimer.
- Cudworth, Ralph (1678): *The true Intellectual System of the Universe: The first part; wherein, all the reason and philosophy of Atheism is confuted; and its Impossibility demonstrated*. London: Richard Royston.
- Dekkers, Eligius, ed. (1954): *Quinti Septimi Florentis Tertulliani opera*, pars I, opera catholica, adversus Marcionem. Turnhout: Brepols.
- Diels, Hermann (1879): *Doxographi Graeci*. Berlin: G. Reimer.

- Dorandi, Tiziano, ed. (2013): *Diogenes Laertius. Lives of eminent philosophers*: edited with introduction. Cambridge: Cambridge University Press.
- Estienne, Henri, ed. (1573): *Ποίησις Φιλόσοφος. Poesis Philosophica, Vel saltem, Reliquiæ poesis philosophicæ, Empedoclis, Parmenidis, Xenophanis, Cleanthis, Timonis, Epicharmi. Adiuncta sunt Orphei illius carmina qui à suis appellatus fuit ὁ θεολόγος. Item, Heracliti et Democriti loci quidam, & eorum epistolæ*. Geneva: Henricus Stephanus.
- Flores, Enrico, ed. (2002): *Titus Lucretius Carus, De rerum natura*. Edizione critica con Introduzione e Versione a cura di Enrico Flores, Volume primo (Libri I–III). Napoli: Bibliopolis.
- Gassendi, Pierre (1658): *Petri Gassendi Diniensis ecclesiæ præpositi, et in Academia Parisiensi matheseos regii professoris opera omnia in sex tomos divisa*. Tomus Primus quo continentur Syntagmatis Philosophici, in quo Capita præcipua totius Philosophiæ edisserunt, Pars Prima, siue Logica, itemque Partis Secundæ, seu Physicæ, Sectiones duæ priores, I. De Rebus Naturæ vniuersè II. De Rebus Cælestibus. Leiden: F. Moyaert.
- Hamilton, Jacob Immanuel (1702): *A & Ω. De Rerum naturalium genesi ex mente Heracliti Physici Dissertatio*. Leipzig: J. Christopher.
- Hanson, Richard P. C. (ed.) and Jousset, Denise (trans.) (1993): *Hermias. Satire des philosophes païens*. Introduction, texte critique, notes, appendices et index. Paris: Éditions du Cerf.
- Heck, Eberhard, and Wlosok, Antonie, eds. (2005): *L. Caelius Firmianus Lactantius. Divinarum institutionum libri septem*, Vol. I. München and Leiden: Saur.
- Hegel, Georg Wilhelm Friedrich (1833): *Georg Wilhelm Friedrich Hegel's Vorlesungen über die Geschichte der Philosophie*. Herausgegeben von D. Karl Ludwig Michelet. Erster Band. Berlin: Duncker und Humblot.
- Henry, René, ed. (1971): *Photius Bibliothèque*, tome VI (“codices” 242–245). Paris: Les belles lettres.
- Hubert, Curtius and Drexler, Hans, eds. (1959): *Plutarchi moralia*, vol. VI Fasc. 1, 2nd edition. Leipzig: B. G. Teubner.
- Lachenaud, Guy, ed. (1993): *Plutarque œuvres morales*, tome XII, 2nd edition. Paris: Les belles lettres.
- Lebedev, Andrei (1979): “ΨΗΓΜΑ ΣΥΜΦΥΣΩΜΕΝΟΝ. Новый фрагмент Гераклита (реконструкция металлургической метафоры в космогонических фрагментах Гераклита), Part I”, *Вестник древней истории* 1979 (2), pp. 3–23 (English summary: pp. 22–23).
- Lebedev, Andrei (1980): “ΨΗΓΜΑ ΣΥΜΦΥΣΩΜΕΝΟΝ, Part II”, *Вестник древней истории* 1980 (1), pp. 29–48 (English summary: pp. 47–48).
- Lechler, Gotthard (1886): “Olearius: Gottfried O.”, in: *Allgemeine Deutsche Biographie*. Vierundzwanzigster Band (van Noort – Ovelacker). Auf Veranlassung Seiner Majestät des Königs von Bayern herausgegeben durch die historische Commission bei der Königl. Akademie der Wissenschaften, Leipzig, pp. 277–278.
- Lloyd-Jones, Hugh and Parsons, Peter, eds. (1983): *Supplementum Hellenisticum*. Berlin and New York: de Gruyter.
- Mansfeld, Jaap and Primavesi, Oliver (2012): *Die Vorsokratiker*, Griechisch / Deutsch. Ausgewählt, übersetzt und erläutert (2nd edition). Stuttgart: Reclam.
- Marcovich, Miroslav, ed. (1967): *Heraclitus. Greek text with a short commentary*. Merida, Venezuela: Los Andes University Press.
- Marcovich, Miroslav, ed. (1990): *Athenagoras, Legatio pro Christianis* (Patristische Texte und Studien 31). Berlin-New York: De Gruyter.

- Marcovich, Miroslav, ed. (1994): *Iustini Martyris Apologiae pro Christianis* (Patristische Texte und Studien 38). Berlin-New York: De Gruyter.
- Marcovich, Miroslav, ed. (1995): *Clementis Alexandrini Protrepticus*. Leiden-New York: E. J. Brill.
- Mau, Jürgen, ed. (1954): *Sexti Empirici opera*, Vol. III. *Adversus Mathematicos libros I–III continens*. Leipzig: B. G. Teubner.
- Mayhoff, Karl, ed. (1967): *C. Plini Secundi naturalis historiae libri XXXVII* post Ludovici Iani obitum recognovit et scripturae discrepantia adiecta iterum edidit Carolus Mayhoff, vol. II libri VII–XV. Stuttgart: B. G. Teubner.
- Migne, Jacques-Paul, ed. (1883): *Sancti Eusebii Hieronymi Stridonensis presbyteri opera omnia*, tomus secundus. Paris: Migne.
- Mouraviev, Serge N., ed. (1999): *Heraclitea. Édition critique complète des témoignages sur la vie et l'œuvre d'Héraclite d'Éphèse et des vestiges de son livre*. Deuxième partie: Traditio. Héraclite d'Éphèse. La tradition antique & médiévale. A. Témoignages et citations. 1. D'Épicharme à Philon d'Alexandrie. Textes réunis, établis et traduits. Sankt Augustin: Academia Verlag.
- Mouraviev, Serge N., ed. (2000): *Heraclitea. Édition critique complète des témoignages sur la vie et l'œuvre d'Héraclite d'Éphèse et des vestiges de son livre*. Deuxième partie: Traditio. Héraclite d'Éphèse. La tradition antique & médiévale. A. Témoignages et citations. 2. De Sénèque à Diogène Laërce. Textes réunis, établis et traduits. Sankt Augustin: Academia Verlag.
- Mouraviev, Serge N., ed. (2002): *Heraclitea. Édition critique complète des témoignages sur la vie et l'œuvre d'Héraclite d'Éphèse et des vestiges de son livre*. Deuxième partie: Traditio. Héraclite d'Éphèse. La tradition antique & médiévale. A. Témoignages et citations. 3. De Plotin à Étienne d'Alexandrie. Textes réunis, établis et traduits par Serge N. Mouraviev, Sankt Augustin: Academia Verlag.
- Mouraviev, Serge N., ed. (2003): *Heraclitea. Édition critique complète des témoignages sur la vie et l'œuvre d'Héraclite d'Éphèse et des vestiges de son livre*. Deuxième partie: Traditio. Héraclite d'Éphèse. La tradition antique & médiévale. A. Témoignages et citations. 4. De Maxime le Confesseur à Pétrarque. Textes réunis, établis et traduits. Sankt Augustin: Academia Verlag.
- Mras, Karl and Des Places, Edouard, eds. (?1983): *Eusebii Werke*. Achter Band. Die Praeparatio Evangelica. Zweiter Teil. Die Bücher XI bis XV, Register. Herausgegeben von Karl Mras, 2., bearbeitete Auflage herausgegeben von Édouard des Places. Berlin: Akademie-Verlag.
- Mutschmann, Hermann, ed. (1914): *Sexti Empirici opera*, volumen II adversus dogmaticos libros quinque (adv. Mathem. VII–XI) continens. Leipzig: B. G. Teubner.
- Olearius, Gottfried (1697): A & Ω. *De Principio rerum naturalium, ex mente Heracliti Physici, cognomento ΣΚΟΤΕΙΝΟΥ, Exercitatio*, Quam Ampliss. Facultate Philos. benignissime annuente, In vicem Posterioris pro loco olim in ea rite obtinendo, publice defendet M. Gottfridus Olearius. Leipzig: Thomas Fritsch.
- Olearius, Gottfried (1711): *Historia Philosophiae: Vitas Opiniones Resque Gestas Et Dicta Philosophorum Sectae Cuiusvis Complexa, Autore Thoma Stanleio ex Anglico Sermone in Latinum translata, variis Dissertationibus atque observationibus passim aucta et Duobus Tomis digesta*, Leipzig: Thomas Fritsch.
- Osborne, Catherine (2011): "Ralph Cudworth: The True Intellectual System of the Universe", In: Primavesi and Luchner, eds. (2011), pp. 215–236.
- Parker, Samuel (1678): *Disputationes De Deo, et Providentia divina*. London: M. Clark.

- Plasberg, Otto, ed. (1922): *M. Tulli Ciceronis Academicorum reliquiae cum Lucullo*. Leipzig: B. G. Teubner.
- Pohlenz, Max and Westman, Rolf, eds. (1959): *Plutarchi Moralia*, vol. VI Fasc. 2 (2nd edition). Leipzig: B. G. Teubner.
- Poliziano, Angelo (1522): *Angeli Politiani Miscellaneorum Centuria Una*. Basel: Valentin Curio.
- Primavesi, Oliver and Luchner, Katharina, eds. (2011): *The Presocratics from the Latin Middle Ages to Hermann Diels*. Stuttgart: Franz Steiner Verlag.
- Primavesi, Oliver, ed. (2012): "Aristotle, *Metaphysics A*. A New Critical Edition with Introduction by Oliver Primavesi". In: Carlos Steel (ed.), *Aristotle's Metaphysics Alpha. Symposium Aristotelicum*. Oxford: Oxford University Press, pp. 385–516.
- Radermacher, Ludwig, ed. (?1967): *Demetrii Phalerei qui dicitur de elocutione libellus* (2nd edition). Stuttgart: B. G. Teubner.
- Radt, Stefan, ed. (2005): *Strabons Geographika*. Mit Übersetzung und Kommentar, Band 4, Buch XIV–XVII: Text und Übersetzung. Göttingen: Vandenhoeck & Ruprecht.
- Reinhardt, Karl (1926): *Kosmos und Sympathie*. Neue Untersuchungen über Poseidonios. München: C. H. Beck.
- Reynolds, Leighton D., ed. (1965): *L. Annaei Senecae ad Lucilium epistulae morales*, tomus I, Libri I–XIII. Oxford: Clarendon Press.
- Reynolds, Leighton D., ed. (1998): *M. Tulli Ciceronis De finibus bonorum et malorum libri quinque*. Oxford: Clarendon Press.
- Riedweg, Christoph, ed. (1994): *Ps.-Justin (Markell von Ankyra?) ad Graecos de vera religione (bisher „Cohortatio ad Graecos“)*. Einleitung und Kommentar. Basel: F. Reinhardt.
- Schenkl, Heinrich and Downey, Glanville, eds. (1965): *Themistii orationes quae supersunt*, vol. I. Leipzig: B. G. Teubner.
- Soner, Ernst (1609): *Commentarius In 12 Libros Metaphysicorum Aristotelis*. Unpublished manuscript in the University Library of Erlangen: Ms. 714.
- Soner, Ernst (1657): *Ernesti Soneri Professoris Norici, Philosophi & Medici olim celeberrimi, in libros XII Metaphysicos Aristotelis commentarius*, edited by Johann Paul Felwinger. Jena: Krebs.
- Stählin, Otto and Früchtel, Ludwig, eds. (1960): *Clemens Alexandrinus*. Vol.2: *Stromata* Books I–VI (3rd edition). Berlin: Akademie-Verlag.
- Stanley, Thomas (1655–1660): *The History of Philosophy, In Eight Parts. By Thomas Stanley. Containing those on whom the Attribute of WISE was conferred*. London: Moseley and Dring.
- Stanley, Thomas (1711): *Historia Philosophiae, Vitas opiniones, resque gestas et dicta Philosophorum sectae civivvis complexa avtore Thoma Stanleio*. Leipzig: Thomas Fritsch.
- Vollhardt, Friedrich (2013): "Gefährliches Wissen und die Grenzen der Toleranz. Antitrinitarismus in der Gelehrtenkultur des 17. Jahrhunderts". In: Andreas Pietsch und Barbara Stollberg-Rilinger, eds., *Konfessionelle Ambiguität. Uneindeutigkeit und Verstellung als religiöse Praxis in der Frühen Neuzeit*. Göttingen: Gütersloher Verlagshaus, pp. 221–237.
- Wachsmuth, Curt, ed. (1884): *Ioannis Stobaei anthologium*, Vol. I (Book 1 of the *Anthology*, edited by Curt Wachsmann and Otto Hense). Berlin: Weidmann.
- Wallace, Robert (1850): *Antitrinitarian Biography: or Sketches of the Lives and Writings of Distinguished Antitrinitarians*, in three Volumes, Vol. II. London: E. T. Whitfield.
- Waszink, Jan H., ed. (1947): *Quinti Septimi Florentis Tertulliani De Anima*: edited with introduction and commentary. Amsterdam: J. M. Meulenhoff.