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# ἄρχαί

AS ORIGENS DO PENSAMENTO OCIDENTAL  
THE ORIGINS OF WESTERN THOUGHT

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DOSSIÉ: ESTILO E FUNDAMENTO NA FILOSOFIA PRÉSOCRÁTICA | DOSSIER: STYLE MATTERS IN  
PRESOCRATIC PHILOSOPHY

## Assertion and Argument in Xenophanes

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**Abstract:** It is a commonplace in our histories of Greek philosophy that the first thinker to fashion deductive arguments was Parmenides of Elea. One corollary of this view is that Ionian philosophers before Parmenides provided no arguments in support of their views. In what follows I offer a critique of this dismissive characterization, focusing on the first thinker for whom we have a substantial body of evidence, Xenophanes of Colophon. Specifically, Xenophanes argued that retelling the old stories of divine strife and warfare was out of

keeping with the qualities of cleanliness and purity considered essential to a proper symposium. He held also that the presence of fossilized remains at inland and mountainous locations was best explained by positing cycles of worldwide flooding and drought, and he linked many other phenomena with the presence of earth and/or water. He also distinguished between having direct perceptual access to events and knowing the clear and sure truth about them, and concluded that about far-off matters such as the gods and the nature of all things no man can know the certain truth. He held also that a series of contrasts between divine and human attributes followed from an initial assumption of divine greatness.

**Keywords:** Assertion, deductive argument, inference to the best explanation, conditions of knowledge.

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It is a commonplace in our histories of ancient Greek philosophy that the first person to employ deductive arguments was Parmenides of Elea.<sup>1</sup> One corollary of this view is that while philosophers before Parmenides' time may have expressed a number of novel ideas concerning the nature of things, they provided little or no argument in support of their views. Some have even characterized "philosophy in the Ionian tradition" as a series of flat assertions.<sup>2</sup> In what follows I offer a critique of these dismissive characterizations, focusing on the first Ionian thinker for whom we have a substantial body of evidence, Xenophanes of Colophon. I will argue that Xenophanes

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<sup>1</sup> Stephen White has recently stated: "Parmenides marks a watershed in the history of argumentation, presenting the earliest surviving sequence of recognizably deductive reasoning in the Greek tradition" (White, 2021, p. 1). White focuses his analysis on the series of *modus tollens* arguments in Parmenides fragment B 8.

<sup>2</sup> Malcolm Schofield speaks of "an Ionian tradition of philosophy whose standard mode of exposition was the cosmogonical narrative...There is little evidence that these writings contained arguments; and it seems likely enough that their central claims were, like Anaxagoras's basic theses about mind, just blankly asserted" (Schofield, 1980, p. 25). For a persuasive account of the argumentative character of many of Heraclitus' aphorisms, see Granger (2004).

formulated arguments of several different kinds in support of his teachings.<sup>3</sup>

Xenophanes was a philosophically minded poet and rhapsode who left his hometown of Colophon at the age of 25 when the Medes invaded western Ionia (modern Turkey) in 546 BCE. By his own account (fragment B 8) he spent most of his long life “tossing his thought around the Greek land”, living for a time in Greek-speaking communities in Sicily and southern Italy, including Elea (modern Velia).<sup>4</sup> Thirteen of the approximately 45 surviving fragments of his poetry touch on the standard topics of Greek sympotic verse - on proper conduct at a symposium (B 1, B 5, and B 22), the proper measures of personal excellence (B 2 and B 3), and the virtues and vices of various well-known individuals - Thales, Pythagoras, and the poet Simonides, among others (B 6-B 8, B 10, B 19-B 21, and B 45). In a group of seven fragments (B 27-B 33) Xenophanes follows the lead of his Milesian predecessors in linking a wide range of natural phenomena with a small number of physical processes (e.g. evaporation and condensation) and natural substances (earth and water). In the well-known fragment B 34 he appears to set limits on how much any mortal being can know, in the process drawing an important distinction between knowledge and mere true opinion. In B 18 he sounds a more optimistic note when he sets aside divine revelation in favor of a kind of “searching” that leads, in time, to the discovery of “a better.” In fragments B 11 and B 12 he rebukes Homer and Hesiod for attributing to the gods behavior considered to be shameful among men, and in B 23 to B 26 he presents a contrasting account of “one greatest god not at all like mortals in either body or thought.” In two of his best-known remarks (B 15 and B 16) he

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<sup>3</sup> This is not an entirely original project. Jonathan Barnes (1979) has argued at some length that Xenophanes’ views can without distortion be formulated as deductive arguments, especially his theological (B 23-26) and epistemological remarks (B 18 and B 34). I agree with Barnes’ general thesis but, as will become clear, I reconstruct Xenophanes’ arguments along different lines.

<sup>4</sup> Greek texts and the numbering of the fragments and ancient *testimonia* follow those in the B and A sections of Diels and Kranz (1951). Translations of this material are my own. Additional information relating to our sources for Xenophanes’ teachings is provided in Lesher (1992).

highlights the tendency of religious believers to attribute to the gods the same attributes they themselves possess, and he offers the conjecture that if horses and oxen could paint, their gods would look like horses and oxen. On the basis of these remarks one would have to consider Xenophanes an unusually original thinker - an outspoken critic of current mores and popular religion, proto-epistemologist, and zealous inquirer into nature's mysteries. But where in his poetic oeuvre can one find arguments, deductive or otherwise?<sup>5</sup>

## Reforming the Symposium

We can begin our inquiry with the richly detailed description of a symposium contained in fragment B 1. In the first half of his presentation (lines 1-12) Xenophanes describes the physically clean and spiritually rich setting:

For now the floor is clean (katharon) as are the cups and hands of all.  
 One puts on the woven garlands;  
 Another passes along a fragrant ointment in a bowl.  
 The mixing bowl stands full of cheer  
 And another wine, flower fragrant in the jars is at hand –  
 Which says it never will run out.  
 In the midst frankincense gives forth its sacred (hagnen) scent,  
 And there is cold water, sweet and pure (katharon).  
 Golden loaves lie near at hand and the noble table  
 Is loaded down with cheese and rich honey.  
 An altar in the center is covered all about with flowers  
 While song and festive spirit enfold the house.

Beginning in line 13 Xenophanes lists a series of actions required of the participants:

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<sup>5</sup> I adopt the usual distinction between deductive arguments (in which one or more premises are thought to provide conclusive reason to accept the conclusion), inductive or probabilistic arguments, including analogical arguments (in which one or more premises are thought to provide substantial though not conclusive reason to accept the conclusion), and abductive arguments (in which one or more premises are thought to provide the best explanation for the circumstances described in the conclusion). I contend that Xenophanes employed all three kinds of argument.

But first glad-hearted men must hymn the god  
 With reverent (euphemois) words and clean (katharoi) stories.  
 And having poured a libation and prayed to be able to do  
 what is right (ta dikaia) – for these are obvious -  
 It is not wrong to drink as much as allows any but an aged  
 man  
 To reach his home without a servant's aid.  
 Praise the man who when he has taken drink brings noble  
 deeds to light,  
 As memory and a striving for virtue bring to him.  
 He deals neither with the battles of Titans nor Giants,  
 fictions of old,  
 Nor furious conflicts - for no good (chreston)<sup>6</sup> comes from  
 these.  
 But it is good always (aien...agathon) to hold the gods in  
 high regard.

Taken together, the two parts of the poem constitute a description of a standard aristocratic symposium and a call for reform. The basic principle underlying that reform effort is reflected in the repeated use of the adjective *katharos* (“clean” or “pure”) at lines 1, 8, and 14: the things said and done during the symposium must be in keeping with the spiritual cleanliness of the occasion.<sup>7</sup> Drinking in moderation will be permitted after libations have been poured and hymns to the gods have been sung. However, the old stories about warfare among the gods will no longer be permitted. In their place there must be stories that inspire virtuous conduct. After all, it is good to always hold the gods in high regard. Xenophanes has identified a number of reforms he considers essential to a properly conducted symposium, each of the proposed changes justified by its capacity to preserve the vibrant spiritual character of the occasion.

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<sup>6</sup> Bowra (1938, p. 364) comments: “So when Xenophanes says that such themes have nothing *chreston* in them, he means they are not suited to the good citizen. His objection is based primarily on grounds of public good.”

<sup>7</sup> So Bowra (1938, p. 354): “His first half contains an implicit moral. He stresses the notion of cleanliness or purity as displayed at the feast, and this gives the tone for what he says later when he advises that the gods be praised [in clean stories].”

## Fossils, Floods, and Droughts

A second testimonial to Xenophanes' use of argument is provided by the second and third century theologian Hippolytus of Rome. After reporting Xenophanes' belief that the saltiness of sea water is due to the mixtures which flow through it, Hippolytus adds:

Further, Xenophanes thinks that a mixture of the land with the sea comes about, but that in time the land becomes freed from the moisture, and he asserts that he has proofs (*apodeixeis*) for these ideas: that shells are found inland and in mountains, and he says that in quarries in Syracuse imprints of fish and seals were found; and in Paros the imprint of coral in the deep of the marble and on Malta slabs of rock containing all sorts of sea creatures. (A, 33, 5).

The discovery of fossilized remains of sea creatures at inland and mountainous locations<sup>8</sup> leads Xenophanes to draw a larger lesson (again according to Hippolytus):

He says that these things came about when long ago everything was covered with mud, and then the imprint dried in the clay. And he says that all men will perish when the land sinks into the sea and becomes mud, at which time generation begins again, and this change comes about in all worlds. (A 33, 6).

Instead of simply positing a cycle of worldwide flooding and drought, Xenophanes engages in a form of argumentation known today as “abduction” or “inference to the best explanation”: fossilized remains of sea creatures have been found inland and in mountains, and this state of affairs is best explained by positing that some body of water first reached and then covered those higher elevations. The argument is not entirely convincing since the distribution of fossils might have been due to other geological forces (e.g. earthquakes or

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<sup>8</sup> Xenophanes may be the first to identify marine fossils. Burnet credited Anaximander with the discovery (1930, p. 124), perhaps on the basis of the similarities between Xenophanes' cycle of flood and drought and Anaximander's cycle of encroachment and retribution. But Burnet's view has not gained wide support. See Mayor (2014) and de Klerk (2017).

volcanic eruptions). It is also a stretch to move from a belief in an earth-and-water cycle to the periodic destruction and rebirth of all mankind. In any case, Hippolytus gives us a clear case of Xenophanes' marshalling and citing "proofs" (*apodeixeis*) in support of his explanatory generalization.<sup>9</sup>

## Earth and Water as Basic Principles

According to Alexander Mourelatos (2008, p. 137), Xenophanes' "cloud-astrophysics" was:

...internally coherent, that it can be attractively connected to intelligent observation of celestial and atmospheric phenomena, that it has significant connections with other parts of Xenophanes' philosophy, and that it does not at all have the vices of stultifying empiricism some modern scholars have found in it.

I would add only that Mourelatos' assessment holds equally true in a broader context: Xenophanes' comments on the natural world include accounts of many terrestrial phenomena as well as the identification of two basic substances - earth and water - to which they are all related. Xenophanes' account of natural phenomena, in other words, was anything but a "a series of flat assertions."

Although its precise meaning is uncertain, fragment B 29 identifies earth and water as basic principles relating to "all things": "All things which come into being and grow are earth and water" (B 29).<sup>10</sup> The sea, for example, is said to be salty because of the many

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<sup>9</sup> Similarly, McKirahan (2010, p. 66): "The fragment is interesting for its reasoning and use of evidence. Particularly impressive is Xenophanes' marshalling of facts to support his thesis." *Apodeixis* with the meaning of "proof" is also found in the writings of Xenophanes' compatriot and near contemporary Herodotus (see his *Histories* VIII, 101).

<sup>10</sup> I understand B 29 distributively: all things are either earth or water or earth combined with water. B 27 ("for all things are from the earth and to the earth all things come in the end") can be reconciled with B 29 if we take "earth" to mean "moist earth." Alternatively, we may understand B 27 as concerned not with earth

mixtures that flow through it (A 33), and the sea combines with earth within an ongoing cycle of destruction and recreation of the dry lands (A 32, 33). *Testimonium* A 50 (from Macrobius) states that Xenophanes also held that the soul consisted of earth and water, while B 37 notes that “in certain caves water drips down” - perhaps a comment on the way in which water both emerges from and leads back to the formation of rocks; B 30 identifies “great sea” as the source of all clouds, winds, rainwater, and rivers, and B 32 in turn identifies “she whom they call Iris” not as the messenger deity whose travels were reported by Homer and Hesiod, but as a certain kind of cloud: “She whom they call Iris this also is by nature a cloud, purple, red, and greenish-yellow to behold.” As we might expect in light of the characterization of the rainbow as “also...a cloud”, Xenophanes traces a number of other meteorological and celestial phenomena to clouds of various kinds. According to the Pseudo-Plutarchian *Miscellanies* Xenophanes held that “the sun and stars come into being from clouds.” The doxography credited to Aëtius reports that “Xenophanes says that the stars come into being from burning clouds” (A 38), that “the sorts of fires the appear on ships, whom some also call the Dioscuri [St. Elmo’s fire] are tiny clouds glimmering in virtue of the kind of motion they have” (A 39), that “the moon is compressed cloud’ (A 43), that “all things of this sort [comets, shooting stars, meteors] are either groups or movements of clouds” (A 44), and that flashes of light come about through the shining of the clouds “because of the movement” (A 45). The upshot is a complex understanding of nature with earth and water linked with a wide range of phenomena, with clouds playing the leading role in explaining atmospheric and celestial phenomena.<sup>11</sup> And in showing how a wide range of phenomena can be accounted for by the presence

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the substance, but rather with *the* earth from whose surface all things rise and to which they all descend.

<sup>11</sup> The complexity of Xenophanes’ earth-and-water account has not always been appreciated. Cf. Lloyd (1966, p. 81): “...it seems quite improbable that Xenophanes had either a very precise or a very elaborate physical theory in mind when he said that ‘all things that come to be and grow are earth and water’ (Fr. 29).”



of earth or water (or both earth and water) Xenophanes also justifies the identification of earth and water as basic principles (B29, 33).

## The Limits of Human Knowledge

Fragment B 34 presents a decidedly pessimistic view of the prospects for knowledge:

And, of course, no man has been nor will there be one who knows the clear and sure truth About such things as I say about the gods and all things. For even if one were to succeed better than others in speaking of what is brought to pass, still he himself would not know. But opinion is fashioned for all. (B 34).

It would help us to determine the basis for this gloomy assessment of the prospects for knowledge if we could identify the conditions Xenophanes considered relevant to “knowing the clear and sure truth (*eidenai to saphes*).” It might also help to know whether his pessimistic conclusion was meant to stand on its own or whether it presupposed the truth of some broader belief or set of beliefs. It would also be helpful to know how the rejection of knowledge issued in lines one and two related to the hypothetical or “even if” scenario contemplated in lines three and four - to know, in other words, how the argument is supposed to go.

One lament heard often in archaic Greek poetry is that human beings are fated to think only in terms of the small range of things they happen to have personally experienced. As Odysseus explains the human condition to the suitor Amphinomus: “For the mind of men upon the earth is such the day which the father of gods and men brings upon them” (*Od*, XIII, 136-37). Similarly, Archilochus fragment 70: “Of such a sort, Glaucus, is the mind of mortal man, whatever Zeus may bring him for the day, for he thinks such things as he meets with.” In the generation after Xenophanes, Empedocles will also assert a link between knowledge and direct experience and deny that mortals have much of a claim to either:

...having seen [only] a small portion of life in their experience, [mortals] soar and fly off like smoke, swift to their dooms, each one convinced of only that very thing which he has chanced to meet, as they are driven in all directions. But each boasts of having seen the whole. In this way, these things are neither seen nor heard by men nor grasped with understanding... (B 2, Inwood trans.).

We know also that from the time of the Homeric poems down to the simile of the divided line in Plato's *Republic* (509d-510b) forms of the adjective *saphes* were used in speaking of what is "clear and sure" to an individual in so far as he or she is in a position to observe the realities directly or first-hand. Thus, for example, when in the seventh book of the *Iliad* Ajax comes out from among the ranks to challenge Hector to a duel he proclaims:

Hector, now indeed you will know *sapha* one on one  
What kind of leaders there are among the Danaans.

In the generation following Xenophanes, Herodotus will also speak of direct experience as the key to achieving "clear and sure knowledge":

Moreover, wishing to get clear and sure knowledge (*saphes ti eidenai*) of this matter from the point where it was possible to do so, I took ship to Tyre in Phoenicia where I heard there was a very holy temple of Heracles. There I saw it, richly equipped with many other offerings. (*History* II, 44).

Thus, when in B 34 Xenophanes denies that anyone has known or ever will know *to saphes*, we should understand him to be saying that no person has grasped or ever will grasp the clear and sure truth (concerning such matters as he specifies) on the basis of their personal experience. The scope of those matters as described in line 2 (i.e. "what I say about the gods and all things") confirms this reading in so far as nothing could be at a greater remove from the direct experience of mortal beings than the actions of the gods and the nature of things as they are at all places and times.

The hypothetical scenario envisioned in lines 3 and 4 of B 34- "even if one were to succeed better than others in speaking of what is brought to pass"-would serve to reinforce the original negative assessment by pointing out that even on a best-case scenario, when someone succeeds in speaking of events as they come to pass perhaps a reference to the claims made by seers and diviners with whom the philosophers often came into conflict - that person would still lack knowledge.<sup>12</sup> In short, in B 34 Xenophanes embraced the traditional view that during their brief lifetimes mortal beings witness only a tiny fraction of the whole of reality, assumed the usual connection between having direct access to events and knowing the clear and sure truth about them, and drew the logical conclusion: about far-off matters such as the gods and the nature of things as they exist in all places and times, no mortal has known, or ever will know, the clear and sure truth, even if they should happen to say it.<sup>13</sup>

In linking knowledge of the clear and sure truth with direct experience Xenophanes put something of a damper on the speculative theorizing that had characterized the first phase of Ionian philosophy – the attempts made by Thales and his Milesian associates to discover a single basic substance of which all things are composed. He also posed a challenge, perhaps best termed “the locality problem”, that would be taken up by virtually every Greek thinker up to and including Aristotle: how can any of us know the sure truth about matters lying outside the small circle of our personal experience? As the Philo of Hume’s *Dialogues Concerning Natural Religion* (part II)

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<sup>12</sup> My guess is that the “someone” (*tis*) Xenophanes had in mind here was Pythagoras. Pythagoras was credited with the divinatory powers Xenophanes repudiated (cf. A 52) and made preposterous claims to knowledge (cf. B 7). Both at the outset (*outis aner*) and at the conclusion (*epi pasi*) Xenophanes has in mind someone who makes an unwarranted claim to knowledge.

<sup>13</sup> Barnes (1979, p. 142-143) offers an alternative interpretation of B 34 based on what he regards as the philosophically plausible thesis that to qualify as knowledge a person’s beliefs must be causally connected with the facts. While Xenophanes showed some interest in the causes of certain beliefs (compare his comments on anthropomorphic conceptions of the gods in B 16), I see no reason to saddle him with a philosophically dubious causal theory of *knowledge*. For a critique of the causal theory, see the discussion in Lesher (1970, p. 132-134).

would later explain: “Our ideas reach no further than our experience. We have no experience of divine attributes and operations. I need not conclude my syllogism. You can draw the inference yourself.”

## Implications of Divine Greatness

Fragments B 23 to B 26 contain a series of assertions concerning the divine:

One god is greatest among gods and men, not at all like mortals in body or thought (B 23)

...whole he sees, whole he thinks, and whole he hears (B 24)

...but completely without toil he shakes all things by the thought of his mind (B 25)

...always he abides in the same place, not moving at all,

Nor is it seemly for him to travel to different places at different times (B 26)

Despite the fact that not a single logical connective (*gar*, *men*, *epei*, etc.) appears in these lines, a good case can be made that these four assertions link up with one other within a well-organized argument.<sup>14</sup>

We can begin the process of reconstructing that argument with fragment B 23, but not with its assertion of one god (*heis theos*) which has attracted the lion’s share of attention (as suggesting a movement toward an exclusive monotheism). Rather, it is the attribute of greatness (*megistos*) that drives Xenophanes’ argument

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<sup>14</sup> Most notably by Jonathan Barnes (1979, p. 82-99). As Barnes put it: “...the various theological sayings which have come down to us can be fitted into a coherent and impressive whole... (84) and “Pure logic moulded his conception of god; science gave his conception substance and matter” (99). Although I share Barnes’ belief in the existence of a logical structure, in my view his decision to include material from the later, highly Eleatic *MXG* treatise undermines the plausibility of his reconstruction.

forward. To understand the meaning of “greatness” here we should remember the usual epithets of the supreme divinity “greatest in honor” and especially “greatest in power.”<sup>15</sup> To begin with, divine greatness in power would support the assertion made in the second half of the line: no being could plausibly be regarded as “greatest in power” that possessed a mind and body like that of mortals. Greatness in power would also imply a totality of awareness unlike any achievable through the use of our human faculties of sense perception. Similarly, “greatest in power” would explain how the divine mind can “shake all things by the thought of his mind” (as opposed, for example, to the Homeric Zeus who causes all Olympus to shake<sup>16</sup> by nodding his head). Effecting change at a distance while remaining wholly unmoved would also testify to the greatness of the power possessed by the divine mind. Properly understood, then, fragments B 23 to B 26 constitute a deductive argument based on a contrast between the nature of the divine and the physical, perceptual, and cognitive capacities typically possessed by human beings. Here, as on several other occasions, Xenophanes both asserts and defends a central element in his philosophy.<sup>17</sup>

## Bibliography

BARNES, J. (1979). *The Presocratic Philosophers*. 2 vols. London, Henley, and Boston: Routledge and Kegan Paul.

BOWRA, C. M. (1938). Xenophanes Fragment 1. *Classical Philology*, v. 33, p. 353-367.

BURNET, J. (1957). *Early Greek Philosophy*. New York: Meridian Library.

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<sup>15</sup> Hupermenes, *Iliad* II, 350; *kratos esti megiston*, *Odyssey* V, 4; *kratei te megiston*, *Theogony* 49, among others.

<sup>16</sup> *Elelixen* at *Iliad* I, 530.

<sup>17</sup> I am grateful to Celso Vieira for his very helpful comments on an earlier version of this paper. I am also grateful to Glenn Most for sharing with me the accounts of Xenophanes B 1 and B 2 he presented at the 2021 Eleatica.

- De KLERK, P. (2017). 2500 Years of Palaeoecology: A Note on the Work of Xenophanes of Colophon (Circa 570-475 BCE). *Journal of Geography, Environment and Earth Science International*, v. 9, n. 4, p. 1-6.
- DIELS, H. and W. KRANZ. (ed.) (1951). *Die Fragmente der Vorsokratiker*. 6th ed. 3 vols. Berlin: Weidmann.
- GRANGER, H. (2004). Argumentation and Heraclitus' Book. *Oxford Studies in Ancient Philosophy*, v. 26, p. 1-17.
- LESHER, J. (1970). Danto on Knowledge as a Relation. *Analysis*, v. 3, p. 132-134.
- LESHER, J. (ed.) (1992). *Xenophanes: Fragments*. Toronto: University of Toronto.
- LLOYD, G. E. R. (1966). *Polarity and Analogy*. Cambridge: Cambridge University Press.
- MAYOR, A. (2014). Ancient Fossil Discoveries and Interpretations. In: CAMPBELL, G. L. (ed.). *The Oxford Handbook of Animals in Classical Thought and Life*. Oxford: Oxford University Press.
- McKIRAHAN, R. (2010). *Philosophy before Socrates*. 2nd ed. Indianapolis/Cambridge: Hackett Publishing Company.
- MOURELATOS, A. (2008). The Cloud-Astrophysics of Xenophanes and Ionian Material Monism. In: CURDS, P.; GRAHAM, D. W. (ed.) *The Oxford Handbook of Presocratic Philosophy*. Oxford: Oxford University Press.
- SCHOFIELD, M. (1980). *An Essay on Anaxagoras*. Cambridge: Cambridge University Press.
- WHITE, S. (2021). Truth Attending Persuasion: Forms of Argumentation in Parmenides. In: BJELDE, J.; MERRY, D. ROSER, C. (ed.). *Essays on Argumentation in Antiquity*. Cham, Switzerland: Springer, p. 1-19.

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