

Daniel W. Graham. *Explaining the Cosmos. The Ionian Tradition of Scientific Philosophy*. Princeton and Oxford: Princeton UP 2006. – 344 p.

Daniel Graham's (further G.) book on Presocratic philosophy is based on his intensive studies of the ancient sources (all the numerous quotations of Greek texts are given in his own translation) and vast scholarly tradition, including the most important works in German, French, and Italian. G.'s treatment of the Ionian tradition is quite broad. Apart from the proper Milesian philosophers (except for Thales about whom we know too little) it includes three generations of their intellectual heirs: 1) Heraclitus and Parmenides, 2) Anaxagoras and Empedocles, the authors of a 'neo-Ionian' response to Parmenides, and 3) atomists, whose reaction to Eleatic philosophy took into account its newest version, advanced by Zeno and Melissus. If one is interested not in Pythagorean philosophy, which is completely ignored by G., nor in biographical details on the Presocratics, which is presented quite economically, but rather in the philosophical study of arguments, this masterfully written, lucid and thought-stimulating study can be very profitably read as an introduction to the central problems of early Greek philosophy from Anaximander until Diogenes of Apollonia.

To be sure, unlike a typical introduction G.'s book is deliberately and resolutely anti-traditional and revisionist. G. is quite critical of analytic philosophy (and rightly so) for its diverting attention from «the historical and dialectical situation to questions about the semantics of the verb 'to be'» (19, cf. 153). This does not make him, however, an apologist for the source-oriented approach traditional in classical scholarship. Since Presocratic philosophy happened to be grossly misunderstood as far back as Aristotle, Theophrastus and the ancient doxographic tradition dependent on them, it is no wonder that modern scholarship relying on Aristotle, Theophrastus and the doxographers, also misinterprets it. «Even some of the most novel recent interpretations of details have been advanced within an old-fashioned, even reactionary, framework of interpretation» (21). To be considered as a meaningful response to the problems raised by the predecessors, a Presocratic theory should be historically appropriate, philosophically coherent, and dialectically relevant, and that is precisely what is lacking in the 'Standard Interpretation of Presocratic philosophy' (21, 52). As contrasted to it, G.'s 'Revisionary Interpretation' includes the following new theses.

1) Contrary to Aristotle, ancient and modern scholarship, the Milesian philosophers advanced not Material Monism (MM), but Generating Substance Theory (GST).

2) Parmenides' ontology is a reply to Ionian theory as developed by Heraclitus, but this theory is GST, not MM. Parmenides' cosmology expounded in the *doxa*-section of his poem, should not be rejected as a completely false and untenable theory – it can be taken as his positive contribution to scientific knowledge.

3) Anaxagoras and Empedocles do not reject or criticize Parmenides' views, rather they support them and in particular his cosmology. Accordingly, they see themselves not as anti-Eleatic pluralists but as Eleatic pluralists.

4) Leucippus and Democritus do not deny a key principle of the Eleatics, but continue to work within an Eleatic framework.

5) A true originator of MM is Diogenes of Apollonia, who thus emerges as an innovative and important philosopher with an interesting response to Parmenides' criticism. Diogenes' theory had so completely «dominated later thought that Aristotle could not read the early Ionians without projecting Material Monism onto them» (292).

Without exhausting all the innovative points of this book, so rich in ideas (note e.g. the author's treatment of Heraclitus as a radical critic of Ionians)¹ these theses constitute the backbone of G.'s theory. As opposed to many other revisionist attempts in the field, G. does not make a caricature of his ancient and modern opponents, so that any student of Presocratic thought will certainly benefit from becoming acquainted via G.'s book both with the Standard Interpretation and with his criticism of its weak points. Although G. himself modestly says that his position can be seen as a revival of a classical interpretation of Cherniss (21), his specific set of alternatives to ancient and modern misunderstandings is original, indeed.

First two general remarks. G. wishes to arrive at «a more coherent picture of Presocratic development than is usually attained» (4) and he does keep his promise. The theories appearing in his book seem historically appropriate, philosophically coherent, and dialectically relevant. Everything else is either suppressed, e.g. Pythagoreanism or Empedocles' *Katharmoi*, or modified and build into the relevant philosophical discussion, e.g. Diogenes' outdated cosmology. As a result we get no nonsense, only sense; no losers, only winners; no isolated, irrelevant, or manifestly weak theories – only «a series of connected explorations» and «a set of contributions to a common program», unified historically and pragmatically (298). Such a picture seems to me too coherent to be true. A triumphalist attitude to the Presocratics does not do justice to them; it may be good for the beginners, but in serious studies it is rather avoided as something old-fashioned. Related to this and equally popular in Tannery's and Burnet's time is G.'s conception of Ionian 'scientific philosophy' as a forerunner of modern natural science. Having rightly said at the beginning that «modern science is not a pure descendant of Ionian philosophy» (17), G. concludes at the end that the Ionians «perhaps invented a practice that was more important than the sum total of their concepts: that of natural science» (301). Again, he gives at the beginning a proper – and a crucial – distinction between natural philosophy and natural science: naturalistic explanation of the phenomena pro-

¹ It is worth noting that the only Ionian Heraclitus criticize is the quite un-philosophical Hecataeus of Miletus, whereas among the Italians he attacks Xenophanes and in particular Pythagoras, who completely falls out of G.'s scheme of philosophic development.

vides only a necessary condition for science but lacks sufficient conditions «for testing hypotheses in relation to the world» (12-13). In the rest of the book, however, Ionian philosophy, worldview, research program, etc. are repeatedly called ‘scientific’. Moreover, if we disregard «major historical detours from the Ionian scientific program, advocated by Plato and Aristotle, which dominated the intellectual landscape until the early modern period» (17), we could deduce that Newton started at the point where Democritus stopped. Yet in fact Newton responded to Galileo and Kepler, who defended and developed Copernicus, whose theory in turn was a revision of Ptolemy’s mathematical astronomy. Looking for a closer connection between Presocratics and early modern science we should rather focus on their contributions to mathematical astronomy (the only Presocratic Copernicus named was Philolaus with his non-geocentric theory) than on their natural philosophy which was obviously pre-scientific. But mathematical astronomy, either Ionian or Pythagorean, hardly appears at all in the book. It is only due to this that Parmenides emerges «as the premier figure in early Greek astronomy» (182), which is at the very least a gross overestimate.

Let us now try to establish whether G.’s Revisionary Interpretation withstands criticism better than the Standard one.

1) and 5). The Modern term Material Monism is applied to those Greek thinkers, who according to Aristotle and Theophrastus postulated only one corporeal *arché*, from which all existing things emerge and into which they perish. Since this *arché* is always preserved as a material substratum of the world, says Aristotle, the monists «think that nothing either comes into being or perishes» (*Met.* 983b12), or rather «it is necessary for them to say it» (*GC* 314a10). While many students of Presocratic philosophy deny Aristotle’s conclusion that unqualified generation and destruction, e.g. in the form of cosmogony, was impossible for Monists, G. accepts Aristotle’s definition of MM and concludes that before Parmenides such theory was impossible. He further claims that virtually all the interpreters accept Aristotle’s reading of the early Ionians as Material Monists, including his corollary on generation and destruction, and that neither verbatim fragments nor doxographic evidence unambiguously support MM (50f.). The first claim is incorrect; as for the second, at least in Anaximenes’ case we have a fragment of Theophrastus that unambiguously ascribes to air a role of underlying substratum that undergoes a series of qualitative transformations (fr. 2 Diels = fr. 226a FHSG).²

Unlike Cherniss, who also denied MM but tended to treat every case individually, G. introduces Generating Substance Theory as a universal substitute for MM. This theory states that in course of transformations the *arché*, e.g. air does not remain a substratum but becomes

² G. quotes this fragment as «Simplicius *Physics* 24.26-28 – A5a» (58) without saying that it comes from Theophrastus, our principal source on the Presocratics.

water, or fire, etc. Since G. does not conceal from the reader that «it is difficult to find decisive texts that exclude MM while supporting GST» (68) and that no evidence actually *proves* that Diogenes, an alleged inventor of MM, did invent it (289), it seems safer to stick to the Standard Interpretation. A role of innovative philosopher and perceptive respondent to Parmenides' criticism hardly suits Diogenes; it is not clear even whether he responded to the Eleatics at all.

2) That Parmenides' ontology does not reply to MM but to GST, stays or falls together with the first thesis, and since it does not look very persuasive, so does the second. G. makes it very probable that Parmenides wrote after and in reaction to Heraclitus, but the Pythagoreans are not to be ignored either. First, Parmenides' cosmology is dualistic, whereas Ionian theories are not. Even if one does not believe that the Pythagorean principles, *peras* and *apeiron*, are pre-Parmenidean, Alcmaeon's theory of qualitative contrarities (24 A 3, B 4) certainly is. Second, a deductive form of Parmenides' reasoning, in particular his use of *reductio ad absurdum*, cannot be explained intra-philosophically; rather it implies the influence of Pythagorean mathematics.³ Further, I agree with G. that Parmenides' cosmology must not be rejected as completely false, but if it was intended as a serious contribution to scientific knowledge, how should we explain its «intentional use of ambiguity»⁴ that makes it unreconstructable?

3) G. distinguishes between strong Eleaticism that denies plurality and weak Eleaticism that is compatible with pluralism and thus with cosmology (165f.). His Parmenides endorses rather the strong version, but leaves room for the weak version as well (243). Accordingly, Anaxagoras and Empedocles see Parmenides as advocating weak Eleatic theory and themselves as Eleatic pluralists, whereas Zeno and Melissus follow and advance the strong Eleatic monism. This is a very ingenious solution that reconciles both Parmenides' two ways and the opposite ways of his followers. Still, one problem remains: in addition to plurality, cosmology presupposes change of place that was ruled out by Parmenides (28 B 8.41), as G. himself admits (164). Thus, Anaxagoras and Empedocles *had* to reject at least some of Parmenides' views, even if they did not criticise him explicitly. If, however, weak Eleaticism is compatible with pluralism *and* change of place, it is quite weak, indeed.

4) To be philosophically coherent and dialectically relevant, the atomists had to counter the arguments of Zeno and Melissus. «Instead, they assume without justification what their critics have already denied» (255). Since such a move is «dialectically indefensible», G. himself constructs the atomist's case against the Eleatics and concludes: «It seems consistent with

³ Gomperz T. *Griechische Denker*. Bd. I. Leipzig 1895, 139; Cherniss H. The Characteristics and Effects of Presocratic Philosophy, D. J. Furley, R. E. Allen, ed. *Studies in Presocratic Philosophy*. V. I. London 1970, 17.

⁴ Kahn C. H. On Early Greek Astronomy, *JHS* 90 (1970) 105 n. 22.

the principle of charity to attribute to them something like the argument that makes sense of their responses to the Eleatics» (269). It may be consistent with the principle of charity, but is inconsistent with G.'s approach to Anaxagoras and Empedocles. They also assume plurality and change denied by Parmenides, instead of explicitly criticising his position, yet in this case G. does not try to make an argument for them but interprets the lack of criticism from their side as a sign of their positive attitude towards Parmenides (188f.).

Though such an ambitious revisionist work as G.'s cannot satisfy every reader, it certainly deserves attentive reading and serious consideration as an original attempt at better understanding the Presocratics.

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