

THE *POSTERIOR ANALYTICS*

LESHER (J.H.) (ed.) *From Inquiry to Demonstrative Knowledge. New Essays on Aristotle's Posterior Analytics*. Pp. xii + 211. Kelowna, BC, Canada: Academic Printing & Publishing, 2010. Paper, Cdn\$28.95 (Cased, Cdn\$74.95). ISBN: 978-1-926598-01-7 (978-1-926598-02-4 hbk).

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This anthology collects papers and responses presented at the 2009 Duke-UNC-Chapel Hill Conference on Ancient Philosophy. There are five pairs of paper and commentary. The Editor provides a brief introduction, concisely summarising all the contributions. Collectively, the essays attempt to answer three main questions related to Aristotle's *Posterior Analytics* (henceforth *APo*): '(1) "How does the *APo* model of scientific knowledge, focused as it is on the construction of syllogisms, relate to the scientific accounts Aristotle presents elsewhere, especially in the biological treatises?" (2) "How do the arguments and views presented in the *APo* relate to other aspects of Aristotle's philosophy?" and (3) "How do the remarks in the concluding chapter of the *APo* concerning perception, memory, experience, and the grasp of the universal add up to an explanation of how we come to know first principles?"' (pp. vii–viii). The papers by J.G. Lennox, M. Leunissen and R. McKirahan are concerned with the first two questions, while those by M. Tuominen and G. Salmieri deal with that touching on the well-known *APo* 2.19.

The first paper, by Lennox, examines the unity of the science of nature, raising problems (without offering solutions) to the question whether there is one natural science or many. Relying upon a distinction between science (*epistêmê*), which refers primarily to the knowledge of a domain structured by causal demonstration from fundamental principles, and inquiry or methods of investigation employed in pursuit of science – with *APo* Book 1 devoted to science and Book 2 to inquiry – Lennox argues that Aristotle at some point realised that the goal of a unified science of nature would not be achieved by means of a single, undifferentiated method of investigation. The problem arose when he turned from his study of eternal natural entities, the celestial bodies and the elements, to that of animals, which are mortal. In her response G. Striker takes the commonly-held view that a divergence between Aristotle's practice as a natural scientist and the 'official account of science' presented in the *APo* is to be expected. Furthermore, she claims the theory of the *APo* is primarily focussed on explanatory proofs, definitions and scientific understanding such that Lennox's concern with the unity and relations between possibly different natural sciences would not figure prominently in it.

In her paper Leunissen shows how the syllogistic model of knowledge can be used to demonstrate natural processes. Leunissen accomplishes two things: first, she shows that besides the paradigmatic demonstrative science of mathematics in which demonstrations are of eternal matters of fact (i.e. certain attributes holding always and of necessity of a subject), there are passages in the *APo*, especially 2.11–12, that manifest Aristotle's attempts to incorporate time, change and processes into the syllogistic structure of demonstrations. These passages suggest that the *APo* already contains the basis for a natural science model of demonstration apart from the geometry model. Secondly, Leunissen applies the model to several passages in the biological treatises in order to illuminate, first, a demonstration of a 'simultaneous process', one in which cause and effect occur simultaneously, and

next, a demonstration of ‘same-type processes’, where cause and effect do not occur simultaneously but are of the same type. Her examination of the latter case contains insightful analysis of conditional necessity and teleological demonstrations. A. Gotthelf rightly praises Leunissen’s paper, merely taking issue with certain particular claims made in her reading of *APo* 2.11 and with minor points in her application of the model of demonstration.

McKirahan’s contribution may be divided into two main parts. In the first part he describes two phases of scientific work: the research phase and the organisational phase. McKirahan claims the *APo* outlines the features of the second phase, during which the form of a finished science is constructed; and he directs particular attention to the forming of definitions. In the second part McKirahan examines the *Poetics* and shows how the definition of tragedy, both in the forming of it and the consequences deduced from it once formed, follow in the main the *APo* (and the revised model of definition in the *Parts of Animals*). By means of this case study, McKirahan demonstrates (successfully, I think) how the *APo*, an early work, was not abandoned by Aristotle; some of its ‘leading ideas influenced his scientific work, even though he did not arrange his scientific works in the form described there’ (p. 76). C.D.C. Reeve strongly objects to claims made in the first part. He disagrees with the characterisation of the *APo* as dealing solely with the organisational phase of science; and related to this, he disagrees with McKirahan’s characterisation of the role of dialectic in science. Moreover, he claims that McKirahan’s account of definition fails to explain the unity of a definition, which Reeve believes is crucial.

Turning to the papers on *APo* 2.19, Tuominen’s aim is to illuminate this chapter’s account of how we come to know the principles in the context of the whole treatise, arguing that 2.19 is congruent with the *APo*, especially Book 2. Her claim is that the explanation in 2.19 is from the point of view of the capacities the human soul necessarily requires in order to be able to acquire knowledge at all, more specifically, how our reason is developed from perceptual experience and how we come to know the premises of proofs. Though Leshner agrees with the general claim regarding the congruence of 2.19 and the rest of the *APo*, he disagrees with her on four points in particular: (1) the simile of the rout is not meant to shed light on how our *nous* recognises the real principles (those better known by nature); (2) *saphôs* (at 100a 14–15) does not refer to degrees of clarity but rather means ‘not sufficiently detailed’; (3) in 2.19 *nous* does not refer to a capacity by which we know but rather the knowledge we can have of universal principles; and (4) 2.19 is not merely a description but also an argument justifying the conclusion that we do actually have some kind of knowledge of first principles.

As for Salmieri’s paper, he sees the fit of 2.19 with the rest of the *APo* by understanding the concluding chapter ‘in the context of the *Analytics*’ doctrine that demonstrations must be conducted at the maximal level of universality’ (p. 155). The chapter re-characterises in descriptive language prescriptions given throughout Book 2 for reaching this level of universality. To that end, Salmieri examines the structure and project of 2.19, the meaning of *aisthêsis*, the nature of *empeiria*, and finally, the advent of universals. D. Bronstein agrees with much of Salmieri’s paper and limits his comments to three criticisms. The first is that Salmieri is not clear regarding the chapter’s aim: on the issue of the knowledge of *nous* emerging from *aisthêsis*, is it knowing those things that are principles or knowing principles as principles? The second concerns Salmieri’s reference to *phantasia* in his analysis of *aisthêsis*. Bronstein astutely raises several problems with it. The third criticism deals with Salmieri’s examination of *empeiria* and the advent of the universal,

which Bronstein thinks is confusing because at times there seems to be a stage between *empeiria* and *nous*, whereas at other times Salmieri suggests there is not.

In sum, Lesher claims '[...] the essays in this volume collectively make a strong case for the systematic character of Aristotle's thought' (p. xii). As such, the anthology makes a worthwhile contribution to the debate regarding whether and, if so, to what extent Aristotle's views on demonstration and scientific knowledge guided his philosophical and scientific work. This volume successfully shows that in fact they do, and to a greater extent than many contemporary scholars have been willing to acknowledge.

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DEFINITION

CHARLES (D.) (ed.) *Definition in Greek Philosophy*. Pp. x + 556. Oxford: Oxford University Press, 2010. Cased, £60. ISBN: 978-0-19-956445-3.

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In fifth-century Athens definition became of central importance in philosophy when Socrates introduced the 'What is F?' question. According to Aristotle, this was Socrates' most important contribution to the discipline (*Metaphysics*, 1078b22). This book seeks to 'reawaken interest' in a set of central and relatively unexplored issues surrounding ancient Greek theories of definition. The volume is divided into three sections covering Plato/Socrates, Aristotle and Post-Aristotelians (Stoics, Galen, Sceptics, Plotinus, Ancient Commentators). In the Introduction, C. attempts to thread these thinkers together by framing the discussion in terms of three central questions: What is the object of definition? What counts as a good definition? Is there a variety of different types of definition? Plato¹ and Aristotle took the objects of definition to be essences, which pick out some causally basic feature(s) belonging to real entities in the world. However, they differed over what counts as a good definition. Drawing on the *Meno*, C. formulates a reasonably clear account of what Plato thinks counts as a good definition or a good answer to the Socratic 'What is F?' question (pp. 3–7). The account is familiar enough to Plato scholars. A definition (1) must identify that one thing in virtue of which all F-things are F. (2) It must be graspable by an intelligent interlocutor without specialised knowledge. It must be such that (3) if one does not know it, one cannot know any other features of F, and (4) if one does know it, one can distinguish on its basis cases of F from those that are not F. Aristotle's requirements on good definitions connect definition with explanation: 'In answering the definitional "What is it?" question, one should, in his [Aristotle's] view, also answer the further question, "Why is it as it is?"' (p. 11) In Aristotle's account, scientific definitions should pick out those features that make a kind what it is *and* explain why it has the other non-accidental properties that it does. In this way definition and explanation 'are two sides of the same coin'. Post-Aristotelian views on definition are taken up from the perspective of how they compare with the views of Plato and Aristotle. Galen followed Aristotle in drawing a distinction between real definitions that specify the essential nature

¹In this review I take 'Plato' to stand also for the views in the so-called Socratic dialogues written by Plato. Occasionally I shall follow C. by referring to '(Plato's) Socrates'.