

of the nature of language and how it functions in philosophical investigation" (p. 6). This is unintelligible given Aristotle's logical treatises and Long's own book. Second, Long puts some effort into showing that Aristotle's claim "it is necessary to proceed from the universal [ἐκ τῶν καθόλου] to the particulars [τὰ καθ' ἕκαστα]" (*Physics* 1,1, 184a23–24) is best understood as moving from undifferentiated wholes to what Heidegger calls "those moments that bring what is at first superficially meant into a compelling distance so that I actually see it in its articulateness" (p. 57). Heidegger's phrase is a very convoluted way of saying that the term τὰ καθ' ἕκαστα refers here to what is specific, and not to the particular. It would have been helpful to inform the reader that Aristotle uses this term in these two different senses.

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TONY ROARK: *Aristotle on Time. A Study of the Physics*. Cambridge University Press, Cambridge – New York 2011. ISBN 978-1-107-00262-3. XIII, 232 pp. GBP 50, USD 82.

Tony Roark has written an impressive book on Aristotle's account of time in *Physics* 4,10–14. His major argument is that the account is best understood in hylomorphic terms: as a compound of matter and form. In short, the proposal put forward is that the matter of time is movement, and the form of time is perception. Roark readily admits that his approach is rather uncontroversial given Aristotle's general tendency to apply his preferred hylomorphic framework to all kinds of explanatory purposes, but observes that the details require careful consideration. This is particularly the case with perception, the role of which is not entirely clear in Aristotle's theory.

The book is conveniently structured around the aforementioned major argument. Part II is devoted to movement, and Part III to perception. Part I serves as an introduction, contrasting Aristotle's approach with other lines of argument, in particular with McTaggart's and Plato's, whereas Part IV concentrates on some specific issues related to simultaneity and temporal passage, addressing objections raised to Aristotle's theory.

Roark begins by contrasting ancient and modern conceptions of time. For this purpose he introduces McTaggart's highly influential distinction between two series of time, the idea that the temporal relations "earlier than" and "later than" are more fundamental than, and to be separated from, the relations of "past", "present" and "future". Roark stresses that the former relations only imply temporal extension, whereas the latter also require some passage of time, and he applies the notions of "extension" and "passage" to clarify and contrast Plato's and Aristotle's views. In my judgement, the comparison given works well for introductory purposes, but on closer inspection "extension" and "passage" are not very helpful notions in clarifying what is distinctive about ancient views. First of all, the distinction in question does not seem to be relevant to ancient thinkers. Secondly, as Roark himself points out, there are other notions such as "periodicity" which better illuminate ancient intuitions. Nonetheless, Roark succeeds in making clear that Plato and Aristotle take time to be defined in terms of motion, and yet insist that motion is not similarly defined in terms of time. The latter claim is unintelligible to modern thinkers, and this constitutes a key contrast between the ancient and modern thinkers.

After this introductory part, Roark turns to the claim about motion as the matter of time. In Chapter 3 he discusses what he refers to as the "Exactly When" argument in *Physics* 4,11,

218b21–219a1. The argument says that if we perceive time when, and only when, we perceive motion, time does not exist without motion. Many interpreters have judged that the argument, in order to make sense, must be based on an implicit assumption. Roark discusses and criticizes two proposals: one according to which "any postulation of imperceptible temporal intervals is false (or perhaps even meaningless), because we could never have evidence of their existence" (p. 47), and another one which says that Aristotle is applying a dialectical method here, assuming, on the basis of received views, not only that time cannot exist without motion, but also, by parity of reasoning, that motion cannot exist without time (p. 49). Roark's criticisms are carefully thought out, but his own solution is not entirely satisfactory. He manages to show that the "Exactly When" argument relies on a supporting argument that time is something consisting of motion rather than being identical to it (p. 54), but his further reflections on the nature of the implied perception remain incomplete. Roark reasonably assumes that the perception of time requires a perception of motion, and his explanation for this dependency is that the perception of time implies a perception of an object as moving. Time and motion, according to him, are perceived as pairs, and the perception involved is to be seen as a *de dicto* perception. He argues, "In each case, an agent who fails to perceive the first member of the pair cannot properly be said to perceive the second member of the pair as such, because *de dicto* perception involves the employment of concepts, and in each case the first member of the pair is a perceptible feature, the concept of which is included in the concept of the second member" (p. 59). This might work as a philosophical theory, but Roark adduces no evidence that this is indeed Aristotle's theory. The problem is that Aristotle's explicit considerations about the nature of perception make no reference to proper conceptual content, and yet Roark takes time perception as involving concepts. He discusses time perception in more detail in Part III, but for some reason ignores his earlier suggestion about *de dicto* perception.

In Chapter 4 Roark proposes an alternative to the widely held view that the "*qua* such" qualification in Aristotle's definition of motion as "the actuality of what is potentially, *qua* such" (*Physics* 3,1, 201a10–11 and b4–5) picks up the immediately preceding "potentially". According to the received view, the significance of the qualification is to limit the potentialities in question to incomplete ones. Roark objects that this fails "to take seriously Aristotle's attempt to provide a real definition of motion" (p. 75). The problem is, according to Roark, that the definition, thus understood, would reify potentialities rather than properly place "substance at the center of the definition" (p. 75). To appreciate this requirement, his own proposal is that the qualification refers to the unit phrase "what is potentially", which "functions as a generic kind-term for *kinoumena*, and the '*qua* such' qualification makes clear that the phrase refers strictly to the telic property compound as such, not simply the *hypokeimenon* of the compound" (p. 74). By "telic property compound", Roark refers to Coriscus being potentially in the Lyceum, for example. This is to be contrasted with non-telic compounds such as his being in the agora. This is a remarkable proposal. However, as Roark acknowledges, it immediately raises an objection: why should Aristotle define motion in terms of a kind of object rather than a kind of process? This objection readily arises from the process examples (e.g. *oikodomesis* "house-building" in *Physics* 3,1, 201b7–15), by which Aristotle illustrates his discussion. Given Aristotle's emphasis on compound substances as fundamental entities, the objection is by no means conclusive, and Roark takes some reasonable steps to address it. In general, however, the proposal he makes has such far-reaching implications that it would require a more comprehensive study. For example, Roark would be consistent in suggesting that perception, according to

Aristotle, is to be defined as Coriscus taking on the perceptible form without matter. In effect, then, this line of argument requires a substantial reformulation of Aristotle's major arguments, which I think Aristotle himself would have no reason to resist.

Chapter 5 clarifies Aristotle's definition of time as "a number of motion with respect to the before and after". Roark makes an attempt to show that the definition is not circular. In other words, he intends to demonstrate that even if Aristotle acknowledges a temporal usage of "before" and "after" he does not rely on it in defining time. On the basis of *Physics* 4,11, 219a10–19, Roark argues that Aristotle singles out a specific "kinetic before-and-after", which is dependent on "spatial before-and-after". Roark criticizes Simplicius' characterization of kinetic before-and-after in terms of distinct stages of motion, and proposes instead that the kinetic before-and-after comes with "zero extension". To accentuate this understanding, he introduces the notion of "kinetic cut", which implies his conceiving of the item in question as point-like. A problem with this suggestion is that it runs the risk of losing the directionality of motion: how is it that in a point-like entity "before" can be kinetically and spatially prior to "after"? However, Roark explains in detail how his interpretation avoids this risk. His proposal is that each kinetic cut is to be understood as an ordered pair of a telic compound and a spatial location. Diares heading for Crete, for example, can be accounted for in terms of Diares being potentially on Crete, his present location being, e.g., immediately south of Kasos. This strikes me as an ingenious argument. Of course, Roark goes much further than what Aristotle explicitly says in the text: for example, Aristotle has no set-theoretic understanding of the concept of "ordered pair". But this is not a problem in a philosophical study. In essence, then, Roark's considerations can be seen as an attempt to spell out the implications of Aristotle's view.

In Part III, Roark turns to discussing the form of time and its perception. In Chapter 6, he argues that Aristotle understands the number of motion in two different ways: on the one hand, time is that which is determinable, i.e. numerable, and on the other, it is that which is determinate, i.e. counted. Roark refers to the first as "time" in general, and to the second as "a time" (pp. 116–7). Both, according to him, are dependent on perception. But how? Roark argues that there are in fact two different ways, one "thin" and the other "thick", corresponding to the proposed distinction. The thin way, Roark argues, is as follows: "[T]he very act of perceiving a movement *as* a movement requires that one perceive the movement as having some indeterminate (but determinable) value of extension" (p. 118; Roark's italics). In the thin sense, then, perception of time consists in perceiving an indeterminate extension, which Roark identifies with "noticing two distinct kinetic cuts within a particular movement" (p. 118). This understanding matches *Physics* 4,11, 219a14–22, which is Roark's key evidence. However, Roark also construes a thick account of time perception, which requires measuring motion with a standard. As far as I can see, there is no explicit evidence of this in the *Physics*, but Roark motivates the suggestion with reference to Aristotle's discussion of water measurement with a *chous* standard in *Constitution of Athens* 67.2.

In Chapters 7 to 9, the focus is on some specific issues in the *De Anima* and *Parva Naturalia*. Chapter 7 clarifies Aristotle's view that there are no imperceptible moments, whereas Chapter 8 claims him to be able to explain the "picket-fence phenomenon" in terms of *phantasia*. The main contribution of Chapter 9 is to criticize Ross' interpretation of *De Memoria* 452b8–23, and give an alternative to it. In this regard, Roark follows Richard Sorabji's interpretation, although he does not refer to him. In general, his discussion is clear and well argued. However, the claim that "the memory has propositional content, as opposed to objectual

content", and that "[t]his propositional character makes memories candidate bearers of truth-value" (p. 145) would have required more detailed elaboration given that memory, according to Aristotle, is a function of the perceptual capacity. Roark makes no attempt to explain how the perceptual capacity is able to allow propositional contents, nor does he consider the possibility that a memory phantasm may be true without being a proper truth-bearer in the way in which an assertion or a denial is.

The concluding part IV discusses simultaneity and temporal passage. In Chapter 11, Roark argues against Ursula Coope and others that Aristotle does not take simultaneity as a primitive notion but instead explains it in terms of togetherness. In Chapter 12, he plausibly rebukes the arguments given by Sorabji and Miller that Aristotle is unable to give a consistent account of temporal passage. He also argues that Aristotle is not subject to Williams's and Dummett's objections to the possibility of temporal passage in the first place. In this way, he attempts to show that Aristotle's theory of time is more powerful than many alternative views. However, Roark reasonably confesses that the success of the theory ultimately depends on the plausibility of the account of motion, which Aristotle gives in teleological terms (i.e. in terms of potentiality and actuality). Since many later thinkers regard these as dubious or at least not sufficiently clear for explanatory purposes, Roark judges that further work should be done to clarify and strengthen the basis of the theory in terms of non-temporal causal relations, for example.

In conclusion, I recommend Roark's book to anyone who is interested in Aristotle's account of time. Despite the aforementioned shortcomings, the book is an important contribution to this area of study, and invites the reader to delve into a variety of intractable problems about time in Aristotle and others thinkers.

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NIKETAS SINIOSSOGLOU: *Radical Platonism in Byzantium. Illumination and Utopia in Gemistos Plethon*. Cambridge University Press, Cambridge – New York 2011. ISBN 978-1-107-01303-2. XVI, 454 pp. GBP 70, USD 120.

Niketas Siniossoglou examines George Gemistos Plethon's (1355–1452) thoughts and actions in the context of the survival of pagan Platonism from the 6th to the 15th century. Siniossoglou's argument is that during the Byzantine period, the Hellenic or pagan worldview stayed as a hidden challenger and a continuous threat to Orthodoxy.

A very interesting point in Siniossoglou's work is his admirable criticism of the fashionable overkills of the constructivism and the relativism inspired by deconstruction and post-modern thought in the current studies of the intellectual history of the ancient and medieval world. Siniossoglou's call for a more realist perspective is very welcome: "it is time to abandon the anti-essentialist or anti-foundationalist (in reality relativist) methodological approaches that blur the boundaries between Hellenism and Christianity" (x–xi).

In 1451, thanks to the spies working for the main clerical leader of the day, Gennadios Scholarios (c. 1400 – c. 1473), the Byzantine authorities in the Peloponnese arrested a pagan agitator named Juvenalios. His hand, tongue and ears were cut off and he was executed by drowning. Scholarios, in his letter which made the episode known to posterity, congratulated