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Aristotle’s views on time have received sporadic attention over the years, but Ursula Coope’s elegantly-written book is the first monograph available in English dedicated exclusively to the account that Aristotle develops in the final five chapters of Physics IV. Three topics form the thematic core of the book: time’s relation to change, time’s status as a kind of number, and the unity and diversity of times. I shall touch on each of these themes and indicate how I think Coope’s interpretation fares. While I disagree with her reconstruction of the account on several central points, it exhibits a great deal of ingenuity and sophistication and deserves careful consideration.

Figuring at the center of Aristotle’s account is his definition of time as ‘a number of change with respect to the before and after’. The definition has been branded as patently circular by pretty nearly every modern commentator, including the likes of Annas, Owen, and Ross. Rebutting the charge of circularity requires a two-pronged defense: articulating a non-temporal account of change, and a non-temporal account of priority and posteriority.

The resources for the first prong of the defense are readily available in Book III of the Physics, since the definition of change (kinêsis) Aristotle offers in its opening chapter contains no overtly temporal language: ‘change is the actuality of that which is potentially, qua such’ (201a10-11). While identifying the resources is a relatively simple matter, the definition’s obscurity makes is rather less clear how to fashion it into a fully satisfactory response. Coope draws on the work of Kosman, Broadie, and Hussey to unpack the sense of the definition. She reads the ‘qua such’ qualification as restricting ‘potentially’ to incomplete potentialities, so that, for example, ‘[a lump of] bronze’s potential to be a statue is actual-qua-potential when it is not yet a statue’ (p. 9). Despite its attractive simplicity, I am convinced that this line of explication is inadequate, principally because it reifies potentialities. Not only is it implausible to think that Aristotle is eager to regard potentialities as subjects of predication, it is independently quite difficult to understand how this might be made to work. As Coope herself laments, ‘This notion of a potential’s being actual is almost impossible to explain without resorting to metaphor’ (p. 7). A more promising strategy to my mind takes the unit phrase ‘that which is potentially’ to refer to a peculiar kind of compound entity consisting of a substance (e.g., Ajax) and a de re modal property (e.g., his potentially being in Troy), which kind of entity Aristotle calls a ‘kinoumenon’. The ‘qua such’ qualification functions to make it clear that the referent is the compound as such, rather than merely the substance under an accidental description, such as ‘the thing that happens to be potentially located in Troy’. (Cf. Aristotle’s use of the singular term ‘cloak’ to refer to ‘the pale man’ qua composite in Metaph. Z 4.) Change, on this reading, is the actuality or being of a peculiar kind of compound entity, one of whose essential features is a telic or directed property to be in a determinate condition or location. This interpretation eschews reified potentialities and instead places substances at center stage, consonant with Aristotle’s view expressed everywhere that being is always grounded in substance. But more to the point, any adequate reading of Aristotle’s definition of change must be capable of contributing to the second prong of the defense of his definition of time, since ‘with respect to the before and after’ functions there to denote what he calls ‘the before and after in change’.

Coope takes these kinetic befores and afters to be stages of change, or change series (p. 65 ff.), whose relations of priority and posteriority are determined by counterfactuals concerning interference:

… P is before Q in a change, just in case, where O is the beginning of the change, the change-part OP can occur without the change-part OQ but not vice versa. (p. 73)

The values for ‘P’ and ‘Q’ are a bit puzzling. Here they seem to be the limiting extremes of change stages, but the variables appear directly above the analysis where they explicitly designate entire stages (pp. 72-3). Be that as it may, the aim is to define kinetic priority and posteriority by appeal to the telic or directed nature of change itself: ‘When Socrates is moving from A to C a certain potential is actual in him, the potential to be at C’(p. 75). On Coope’s analysis, change stage P (from point A to point B) is before change
stage Q (from B to C), by virtue of the fact that the former stage could exist without the latter (through interruption), but not vice versa.

The analysis appears to satisfy the demand for a non-temporal account of priority and posteriority, but I think it is subject to two objections. The first is that counterfactual analyses are rarely to be found in Aristotle. Thus, an otherwise equally satisfactory analysis that grounds kinetic priority and posteriority in actual features of the world would be preferable. The second objection is that it seems to get the size of the before and after in change wrong, as the following passage strongly suggests:

> But we apprehend time only when we have marked out change, marking it out by means of the before and after. And it is only when we have perceived the before and after in change that we say that time has passed. Now we mark them out by judging that one thing is different from another, and that some third thing is between them. When we think of the limits as different from the middle, and the soul pronounces that the nows are two, one before and one after, that is when and what we say time is. (219a22-9)

The before and after in change are evidently not change stages, series, or intervals. It is *by means of* (Aristotle uses the instrumental dative here) the before and after in change that we mark off a single interval of change. These kinetic befores and afters are limits (*akra*) that define (*horizein*) kinetic intervals.

Much of Coope’s efforts focus on time’s status as a kind of number, and she ultimately attributes to Aristotle a view of time as ‘a universal order within which all changes are related’ (p. 86). Thus, the notion of number as a kind of order is put into service in connection with the unity and diversity of times. With respect to the former, she envisions Aristotle as exploiting the activity of counting nows to explain how there can be a unique time series that comprehends all changes (p. 36). The explanation, though, turns out to be somewhat thin: ‘In counting a now, we are *creating* boundaries … within *all* the changes that are currently going on … [a] now that they are all “at’” (p. 116). There is no further suggestion that Aristotle might have the theoretical resources to analyse simultaneity. In fact, Coope explicitly states that Aristotle takes simultaneity as a metaphysically primitive relation (pp. 4, 116), which is an interpretation that seems rather difficult to motivate given that he regards temporal priority and posteriority as analysable in terms of kinetic priority and posteriority.

As for the matter of diversity of times, and more specifically of temporal order, counting again plays a central role in Coope’s interpretation. She says:

> Time is, by definition, something that is counted by counting nows in this way [sc., in a numeric order reflecting the priority and posteriority relations among change stages—cf. n.3 p. 86]. As such, it inherits its order from the order of the nows that are counted. (p. 91)

It is difficult to see what the significance of counting amounts to in tracking temporal order. For surely Aristotle would say that we are no less aware of time’s passage when we simply recite ‘now … now … now’ than we are when we count ‘one … two … three’.

The more traditional reading of ‘number’ is as ‘metric’, which Aristotle overtly endorses at several places in his account. Coope acknowledges these endorsements but claims that time’s nature as a metric or measure of change is secondary to its nature as something enumerated (p. 87). But if (as Aristotle seems to think) change is something determinable but intrinsically indeterminate with respect to units of ‘length’, then time is precisely what determines units (and multiples) of kinetic ‘length’. The determining activity in question is the individuation of a before and after in change (the underlying kinetic counterparts of nows) by perceiving them as numerically distinct. The text leading up to his definition of time is laden with perception-talk, and issues relating to perception recur throughout these chapters of the *Physics*. Aristotle also discusses perceiving time and change elsewhere, principally in the *De Anima* and the *Parva Naturalia*. These treatises confirm the central role of perception in Aristotle’s account of time and fill out the details of
the account developed in the *Physics*, among which is an analysis of simultaneity cast in terms of joint-perceptibility.

Despite my disagreement with Coope on various matters, I enthusiastically recommend this book to anyone with an interest in Aristotle, ancient metaphysics, or the philosophy of time. She ably addresses interesting and difficult issues too numerous to mention here, and the excellent appendix on Aristotle’s use of the expression ‘ho pote on X esti’ might by itself be worth the price of admission.

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