CHAPTER SEVEN

REAL TEMPORALITY IN AN ARISTOTELIAN WORLD

Aristotle conceives the natural universe to be populated with such existents as trees and mountains, horses and condors, oceans and the Heavenly bodies—what are termed primary substances. These existents move and change. Except for the Heavens and Heavenly bodies, they are also generated and they “corrupt.” The natural universe, accordingly, is the universe of motion and change (“becoming”), and generation and corruption.

Primary substances are also the primary objects—or, rather, the real subjects (hypokeimena)—of sense experience and its “sensibles” (as discussed in Chapter 6). Hence, natural existents are colored, have shape and size, can be seen, heard, smelled, or the like. They, of course, also interact and relate to one another in various perceptible ways—especially in ways canvassed by the pertinent categories of concepts, predicates, or modes of “being” Aristotle articulates in Categories. Consequently, the natural universe is the sensible universe as well.

Similarly, Aristotle does not hold that there is the natural universe and a temporal universe. Rather, the natural universe is the temporal universe. Natural existents just are temporal existents.

Aristotle’s denial that time is not to be just equated with the natural universe as such (as an incredibly huge sphere, for example, or just its cosmic or other motions) does not imply that time is therefore something distinct from the natural universe. How to articulate time’s relationship to the natural universe, though, is perhaps uniquely problematic.

Time, indeed, should not be just equated with natural existence; and yet, Aristotle has stated, it somehow entirely pertains to, “embraces,” exists “in consort with” all (and only) natural existents.

Later in Book IV of Physics Aristotle considers what it means to say that something “exists in time” (to en chronoi einaí); and he avers that, at least sometimes, this means that “when it exists, time likewise exists” (to einai tote ho chronos estin) [IV.221a10]. Aristotle, however, cautions us [IV.221a19–26]: 
Clearly though, too, for something to exist in time is not just a matter of time existing when it exists—anymore than being in motion or existing in a place is a matter just of motion existing and the space existing [when it exists]. For, if to exist in something is just this, then every state of affairs (*pragnai*) will exist in everything whatsoever; and the heavens will exist in a millet grain. For, when the grain of millet exists, the heavens also exist. But, this is mere coincidence (*symbebeken*); whereas the previous relationships follow by necessity—so that when a real thing (*ontos*) exists in time there exists a certain time when that thing exists, and when a real thing is in motion there exists a certain motion which that thing is in.

In sum, natural existence, spatial existence, temporal existence, and “becoming” (as well as sensible existence, too) are related to one another in a manner more indissoluble and necessary than any relationships obtaining among the actual denizens and constituents of nature themselves.

Aristotle has been emphasizing most recently in his discussion time’s relation to (natural) motion—for example, arguing for the derivative character of its continuousness and of its before-and-after from motion’s and spatiality’s, or magnitude’s. Time’s and motion’s inextricable relationship prompts Aristotle also to clarify his associating time with number [IV.220b15–19]:

Not only do we measure (*metroumen*) motion by virtue of time but we also measure time by virtue of motion, inasmuch as they delineate one another. On the one hand, time delineates motion inasmuch as it is its number. Yet, on the other hand, motion delineates time. For, we say that time is much or little by virtue of a motion measuring it, just as in general number depends upon what is numbered—for example, number pertains to horses by virtue of there being one horse.

Aristotle seems in part concerned here to correct any misunderstanding to the effect that time’s relation to motion is something of a one-way street—that time unreciprocally depends upon, is derivative from, motion (and related extensions or magnitudes). In so doing, however, he in a way deepens the mystery of how precisely time and motion do relate to one another. For example, does (one) year denote the time it takes Earth to orbit Sol (in modern cosmology); or, does each completed Earth orbit of Sol delineate (one) year?

Jean Piaget (as discussed in Chapter 3.2) provides an example of young children who recognize that two objects begin moving simultaneously and cease moving simultaneously and yet believe that the object which traversed a longer distance must have taken longer to traverse that distance than the one which traversed a shorter distance. Similarly,