DE CAELO 2.2 AND ITS DEBT TO THE DE INCESSU ANIMALIUM

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1. Introduction

In *De caelo* 2.2, Aristotle considers the questions whether it is legitimate to apply the principles “right” and “left” to “the body of the heaven” and if so in what manner to do so. This essay examines his attempt to answer those questions. The examination has three goals:

(a) to understand Aristotle’s appeals to his conclusions about such “directional” principles in the *De incessu animalium*, and to assess his grounds for doing so,
(b) to determine whether his assertion, during the course of this discussion, that “the heavens are ensouled and have a source of motion” (*De caelo* 2.2, 285a29–30) plays a significant role in his argument,
(c) to draw out some of the implications of this discussion for how we should understand the logical and explanatory structure of Aristotle’s science (or philosophy) of nature.

I will contend that a significant epistemological problem lies behind the appeal to the *De incessu* in this passage, and that Aristotle was fully aware of it.

2. Cosmic dimensions and cosmic directions

Aristotle’s *De caelo* begins by declaring that the science of nature appears most of all to be concerned with bodies, magnitudes, their affections and their changes, but also with the first principles\(^1\) of such substantial

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\(^1\) I will adopt the following policy for translating ἀρχή: where it appears clearly to refer to the starting points of a science, I will use the term “principle”; where it appears to...
beings.\textsuperscript{2} This claim rests on ontological grounds—things constituted by nature either are bodies and magnitudes, have body and magnitude, or are the first principles of things having body and magnitude (268a1–6). Moreover, each of the natural bodies that constitute the cosmos is said to be complete in so far as it has all three of the dimensions of magnitude (πάσας γὰρ ἑκεῖ τὰς διαστάσεις, 268b7), i.e., in so far as it is divisible in length, breadth, and depth. Here, then, διαστάσις is naturally rendered “dimension” and refers to precisely what we designate by that English word.\textsuperscript{3}

At the beginning of the second book, after reviewing weaknesses in the arguments of those who deny that the heavens are eternal, Aristotle considers whether the right and the left are among the principles of natural bodies—an idea defended, we are there told, by the Pythagoreans.\textsuperscript{4}

Since there are some, such as those called Pythagoreans (for this is one of their statements), who claim there to be a certain right and left to the heavens, one should investigate whether this is so in the way they claim, or in some other way—if indeed one ought to apply these principles (τὰς ἀρχὰς τῶς ὁλόκληρος) to the body of the whole cosmos. (284b6–10)

\textsuperscript{2} See Johansen (2009, 10–13), for the significance of this starting point in understanding the relationship between the inquiry represented by Aristotle’s \textit{De caelo} and the very different project described in Plato’s \textit{Timaeus}.

\textsuperscript{3} This passage also includes an odd endorsement of the Pythagorean dictum that the all and everything are defined by threes, a claim that we take the number three from nature and make use of it in worship of the gods and a claim that the completeness of three is shown by the fact that the first time we say “all” (rather than “both”) is when we refer to three items. I will take up later the question of why Aristotle stretches in these various ways for support of the idea that objects with these three dimensions of magnitude are complete objects, but for now it is enough to note that it is part of a set of wider epistemological questions raised by the method and style of the \textit{De caelo} discussed in Robert Bolton’s contribution to this volume.

\textsuperscript{4} The actual Greek term used consistently for the object of this natural inquiry is the singular noun οὐρανὸς. But English convention uses the plural to refer to the stars and planets, while the singular has primarily religious connotations of a dwelling place for angels and disembodied souls, so I have been encouraged to use the plural expression.