

ALL IS NUMBER?

A review of Aristotle's Claim on Pythagoreans fundamental Beliefs

Gabriele Cornelli
Universidade de Brasília

ABSTRACT

The question, "All is number?", significantly the title of Zhmud's famous 1989 article in *Phronesis*, opens a challenge to the extremely important Aristotelian testimony that "all is number" was the fundamental definition of Pythagorean philosophy. Such a challenge is anything but easy, especially when one considers that, so far, the histories of both ancient philosophy and ancient mathematics seemed to have no doubts that this definition was correct. This paper aims to submit Aristotle's claim that the Pythagoreans believed that "all is number" to critical review. Our analysis of the many ways that Aristotle states the thesis "all is number" will reveal, beyond merely semantic variations, a fundamental theoretical contradiction that Aristotle himself seems incapable of solving. Three different versions of the doctrine are in fact present in the Aristotelian doxography: a) an identification of numbers with the sensible objects; b) an identification of the *principles* of numbers with the principles of things that are; c) an *imitation* of objects by numbers. While versions a) and c) seem to identify numbers with the material cause of reality, in terms ("imitation") reminiscent of Plato, version b), numbers as

formal causes of reality, is an Aristotelian reconstruction of the Pythagorean theory. Aristotle would have been pushed to such a reconstruction by the difficulty he found in accepting the Pythagorean material notion of number, and by considering it closer to its sensitivity, strongly marked by the reception of that same theory in the Academic realm. In contrast, the Platonizing tradition treats numbers as ontological principles. The Aristotelian summary of the Pythagorean theory of numbers reveals itself to be simultaneously a response to Plato, and also, therefore, dependent on Plato's commentary. Although it is clear that Aristotle deeply values the fundamental insight of the Pythagoreans, that is, their attempt to understand the nature of the numbers in relation to the nature of the world, the fact is that his attempt at reconciliation, straddling both pre-Socratic sources and Platonizing mediation, seems less than successful.