

## How Arithmetic is useful for understanding the Good as the Principle of Forms in Plato's *Republic*

As the analogy of the Sun shows, the Good is required for laying the metaphysical foundations of Forms. More specifically, the Good not only sheds "truth and what is" upon the other Forms (508d), but also is responsible for their being (509b). I aim to explicate these two points with the aid of arithmetic, which helps the soul to see the Good (526d-e), and which forms the basis of the other four sciences (including geometry and astronomy).

In this explication, I will consider a remarkable condition Plato places on the possibility of reaching the Good, which is the ability to correlate the five sciences, or, as he puts it, to take "a comprehensive view of the mutual relations and affinities which bind all these sciences together" (531c-d). I shall call this the thesis of *synopsis*. But there is one further thing worth considering: "The common thing which is used by all crafts, all modes of thought, and all sciences, and which everybody of necessity must learn to begin with" is "number and calculation" (522c1-6). I shall call this the thesis of the general applicability of arithmetic. These two theses constitute the basis on which those two points about the Good will be examined.

Careful reading of Plato's treatment of arithmetic makes us distinguish its two aspects, i.e. method and science. The former aspect is related to the applicability thesis, but the latter, which investigates the nature of numbers, to the thesis of *synopsis*. Arithmetic as method is best understood when intelligence is compelled not only to see its objects as *separate*, but also to use numbers in seeing them that way. Calling this the separation corollary of the applicability thesis, I shall explain how this corollary helps see that the truth in question should be defined as self-identity and purity, and that the Good should be characterized as the principle of Unity by participation in which each Form is made a unity. The probable reason Plato uses the name 'the Good' for that principle is that it should also be the one which *correlates* the unities or Forms to be defined: The notion of correlation, which

involves the notion of arrangement or order, essentially implies the notion of 'good'

As for the relevance of the thesis of *synopsis* to understanding the Good, we need to discuss how arithmetic as science forms the basis of the other sciences. In this relation, insofar as they require "the equal, or the double, or any other ratio" (529e), the (arithmetical) unit functioning as *metron* should be essential to the sciences: In them, the function of *metron* makes exact quantity possible, and this in turn makes truth and knowledge possible. The only way to correlate the sciences is to let them assume the unit functioning as *metron* as their principle. I shall show how the notion of the unit as *metron* helps see the Good as the principle of the being of Forms.

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