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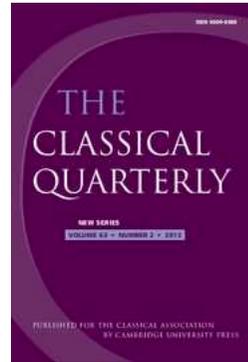
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## THEOPHRASTUS ON PLATONIC AND 'PYTHAGOREAN' IMITATION

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## THEOPHRASTUS ON PLATONIC AND ‘PYTHAGOREAN’ IMITATION\*

### I. INTRODUCTION

In the twenty-fourth aporia of Theophrastus’ *Metaphysics*,<sup>1</sup> there appears an important, if ‘bafflingly elliptical’,<sup>2</sup> ascription to Plato and the ‘Pythagoreans’ of a theory of reduction to the first principles via ‘imitation’ (μίμησις):

Πλάτων δὲ καὶ οἱ Πυθαγόρειοι μακρὰν τὴν ἀπόστασιν, ἐπιμιεῖσθαι τ’ ἐθέλειν ἅπαντα· καίτοι καθάπερ ἀντίθεσιν τινα ποιῶσιν τῆς ἀορίστου δυνάδος καὶ τοῦ ἐνός, ἐν ᾗ καὶ τὸ ἄπειρον καὶ τὸ ἄτακτον καὶ ὡς εἰπεῖν πᾶσα ἀμορφία καθ’ αὐτήν, ὅλας δ’ οὐχ οἶον τ’ ἄνευ ταύτης τὴν τοῦ ὅλου φύσιν, ἀλλ’ οἶον ἰσομοιεῖν ἢ καὶ ὑπερέχειν τῆς ἐτέρας, ἢ καὶ τὰς ἀρχὰς ἐναντίας. Διὸ καὶ οὐδὲ τὸν θεόν, ὅσοι τῷ θεῷ τὴν αἰτίαν ἀνάπτουσιν, δύνασθαι πάντ’ εἰς τὸ ἄριστον ἄγειν, ἀλλ’ εἴπερ, ἐφ’ ὅσον ἐνδέχεται τάχα δ’ οὐδ’ ἂν προέλοιτ’, εἴπερ ἀναιρεῖσθαι συμβήσεται τὴν ὅλην οὐσίαν ἐξ ἐναντίων γε καὶ ἐν ἐναντίοις οὐσαν.

(Theophrastus, *Metaphysics*, 11a26–b12)

Plato and the Pythagoreans make the distance [between the first principles and everything else]<sup>3</sup> a great one, and they make all things desire to imitate

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<sup>1</sup> Also known as *On the First Principles* (Περὶ ἀρχῶν), or perhaps *On Basic Problems* (Περὶ τῶν ἀπλῶν διαπορημάτων). For a good discussion of the problems involved in recovering a title for this text, see especially A. Laks and G. Most, *Théophraste: Métaphysique* (Paris, 1993), ix–xviii. My choice to employ a system of organization according to aporiae follows D. Gutas, *Theophrastus: On First Principles (known as his Metaphysics)* (Leiden, 2010), 38–43, who argues persuasively that the study of each aporia ‘on its own merit’ allows us to ‘better perceive the significance of each detail for Theophrastus’s immediate milieu and thus better gauge its historical moment’. Following convention, I will also supply Usener’s page numbering when citing the text.

<sup>2</sup> The phrase is Dillon’s (J. Dillon, ‘Theophrastus’ critique of the Old Academy in the *Metaphysics*’, in W.W. Fortenbaugh and G. Wöhrlé [edd.], *On the Opuscula of Theophrastus* [Stuttgart, 2002], 175–87, at 177) with reference to Theophrastus’ attack on the Platonists at 5a23–8. By ‘Platonism’ I refer to the attempts to systematize Plato’s thought in the Early Academy following his death in 347 B.C.E. By ‘Platonic’ I refer to concepts that can be derived directly from Plato’s dialogues but are not explicitly present in the writings or thoughts of the Platonists.

<sup>3</sup> W. Burkert, *Lore and Science in Ancient Pythagoreanism*, tr. E.L. Minar, Jr. (Cambridge, MA, 1972), at 62 with n. 57, posits that Theophrastus is contrasting the Good (τὸ ἀγαθόν at 11a19), (in Burkert’s words) the ‘model of everything real’ (*sc. τὰ ὄντα* at 11a25), with everything else. This reading has the advantage of drawing from the terms employed in the previous paragraph, where Theophrastus was discussing Speusippus’ doctrine of the Good. M. Van Raalte, *Theophrastus’ Metaphysics* (Leiden, 1993), 566, in contrast, will only commit to the claim that ‘the term here

fully;<sup>4</sup> and yet, they set up a certain opposition, as it were, between the Indefinite Dyad and the One. In the former [resides] the Unlimited and the Unordered and, as it were, all Shapelessness as such; and they make it altogether impossible for the nature of the universe to exist without this [that is, the Indefinite Dyad] – it [that is, the Indefinite Dyad] could only have an equal share in things, or even exceed the other [first principle, that is, the One] – whereby they also make their first principles contrary [to one another]. Therefore, those who ascribe causation to the god claim that not even the god is able to reduce all things<sup>5</sup> to the best, but, even if at all, only in so far as is possible. And perhaps he wouldn't even choose to, if indeed it were to result in the destruction of all existence, given that it [that is, existence] is constituted from contraries and consists of contraries.

One can imagine the excitement that might accompany such a complex description of and challenge to the metaphysics ascribed to Plato and the 'Pythagoreans'. After all, Aristotle's summary of Plato's adoption of the Pythagorean philosophical system (*pragmateia*) in *Metaphysics* A assumes strong relationships between their metaphysics, especially their employment of the coextensive operations of 'participation' (μέθεξις) and 'imitation' (μίμησις), but it is cryptic and inconclusive.<sup>6</sup> Naturally, Aporia 24 in Theophrastus' *Metaphysics*, a text which might have been an appendix placed before *Metaphysics* A in the Corpus,<sup>7</sup> should have stirred up excitement among scholars who are interested in two controversial topics, (1) Plato's unwritten dialogues (and the first principles of Plato's philosophy) and (2) the relationship between Plato and the 'Pythagoreans' (and the curious interposition of 'participation' and 'imitation'). On the former, there have been many commentators. Burkert, who thought that a Platonist of the Early Academy (most likely Speusippus)<sup>8</sup> was the source for Theophrastus' description in Aporia 24, focusses on the meaning of the 'distance' (ἀπόστασις) apparently posited between the One and the Indefinite Dyad – itself a

apparently refers to the distance between two provinces of being, one endowed with a value which is lacking in the other'. Yet, as is clear from the context of the argument (on which, see the illuminating discussion of Gutas [n. 1], 384–6), what Theophrastus is contrasting is the opinion of Speusippus, who holds that the Good is at the centre of the universe, with Plato and the 'Pythagoreans', who hold that the first principles, which are of highest value, are far away from the sensible world. Moreover, Gutas's interpretation has the advantage of reflecting what Theophrastus says earlier on (*Metaph.* 6a14–7a6) about derivation from the first principles as a sort of 'imitation'. See below.

<sup>4</sup> I follow Ross–Fobes, Philip and Gutas in maintaining the manuscript readings of ἐπιμμεῖσθαι, which is a *hapax legomenon*. For a persuasive defence of the manuscript rendering, see Gutas (n. 1), 384–5. The other option, preferred by Laks–Most and Van Raalte would be to emend the text to ἐπεῖ μμεῖσθαι, which would produce a reading something like 'seeing that all things wish to imitate' (Van Raalte) or 's'il est vrai que tout a la volonté d'imiter' (Laks–Most). Either way, however, the point stands: Plato and the 'Pythagoreans' believe that things other than the first principles desire to imitate them.

<sup>5</sup> I understand ἄγειν as ἀνάγειν, given that the prefix ἀν- should be understood as transferable from the previous verb ἀνάπτουσι. Theophrastus had used the technical term ἀνάγειν with reference to ἀνάπτων when describing Plato's ontological hierarchy earlier at *Metaph.* 6b11–13, and reduction to the first principles is the point in both passages. I will tend to refer to 'reduction' rather than something like 'reference to' (which is also a meaning that ἀνάγειν carries) because of the ontological force that this concept carries in the writings under discussion. For useful general studies of reduction from opposites in the thought of Aristotle, see especially P. Merlan, *From Platonism to Neoplatonism* (The Hague, 1975<sup>3</sup>), ch. 7 (but also see the correctives of W. Leszl, 'Philip Merlan e la metafisica aristotelica', *RSF* 25 [1970], 3–24 and 227–49, and E. Berti, 'La "riduzione dei contrari" in Aristotele', in *Zetesis: Album amicorum* [Antwerp/Utrecht], 122–46).

<sup>6</sup> Arist. *Metaph.* 1.6, 987a29–988a2.

<sup>7</sup> For a balanced discussion of the problems involving the title and location of the work vis-à-vis Aristotle's *Metaphysics*, see esp. Laks–Most (n. 1), ix–xviii.

<sup>8</sup> Burkert (n. 3), 62–3. For my criticism of Burkert's hypothesis that Aporia 24 refers to Speusippus, see below.

debatable inference into the text; on ‘imitation’ of the first principles he has little to say. The same goes for Huffman and Philip, who follow Burkert’s interpretation closely and emphasize the interweaving of ‘Pythagorean’ with Platonist first principles in the Early Academy.<sup>9</sup> Cherniss, who did indeed spend a great deal of energy trying to unpack the relationship of production to ‘imitation’ in Plato’s metaphysics,<sup>10</sup> nevertheless used this passage primarily to make sense of the various aspects of the Indefinite Dyad.<sup>11</sup> Reale brought some colour to the debate by arguing that Theophrastus places the thought of Plato and the ‘Pythagoreans’ in an intermediary position within a larger dialectic between those who posit evil and disorder as a ruling element in the universe (that is, Speusippus, on Theophrastus’ count) and those who postulate good and order as predominant.<sup>12</sup>

Concerning the ascription to Plato and the ‘Pythagoreans’ of a theory of reduction by means of the obscure operation called ‘imitation’, however, little ink has been spilled. In his discussion of ‘imitation’ in Aristotle’s famous passage from *Metaphysics* A, Kahn, for example, does not take into account Theophrastus’ testimony.<sup>13</sup> Fine, in her analysis of Aristotle’s criticism of Platonic metaphysics, doesn’t even mention Theophrastus;<sup>14</sup> neither does Pradeau, whose comprehensive new monograph sets the tone for the future of studies on Platonic ‘imitation’ without reference to Aristotle’s student.<sup>15</sup> In a more helpful light, Laks and Most, in their critical edition of Theophrastus’ *Metaphysics*, explain how the operation of ‘imitation’ ascribed to Platonic and ‘Pythagorean’ metaphysics is meant to be distinguished from the aforementioned position ascribed to Speusippus, but their exegesis of this passage cannot be said to follow in any obvious way from the textual evidence.<sup>16</sup> Dillon, who also discusses this passage in detail, uncharacteristically does not put to the test the relationship of Plato to the ‘Pythagoreans’ or the details of the first principles, but instead provides a general analysis of how it reiterates earlier arguments made by Theophrastus.<sup>17</sup> In this way, he follows Van Raalte, who, in her commentary on the Greek text, relates Aporia 24 to the larger issues of ‘imitation’ in Plato’s writings as well as Theophrastus’ and Aristotle’s *Metaphysics*. In her analysis of Aporia 8 (Theophr. *Metaph.* 5a25–8) she usefully contextualizes this passage with the larger philosophical approach in Theophrastus’ work:

<sup>9</sup> C.A. Huffman, *Philolaus of Croton: Pythagorean and Presocratic* (Cambridge, 1993), 22–5; J.A. Philip, *Pythagoras and Early Pythagoreanism* (Toronto, 1966), 11–12 and 96. In a more recent article, ‘Two problems in Pythagoreanism’, in P. Curd and D.W. Graham (edd.), *The Oxford Handbook of Presocratic Philosophy* (Oxford, 2008), 284–304, at 284–91, Huffman argues against the traditional interpretation of *Metaph.* 987a29–31 by suggesting that Aristotle sees Plato’s *pragmata* as ‘agreeing with the Presocratic tradition as a whole’ rather than following the ‘Pythagoreans’ in particular, but he does not take into account Theophrastus’ evidence at all.

<sup>10</sup> H. Cherniss, *Aristotle’s Criticism of Plato and the Academy* (Baltimore, 1944), 246–8.

<sup>11</sup> *Ibid.* 95–7 with n. 62.

<sup>12</sup> G. Reale, *The Concept of First Philosophy and the Unity of the Metaphysics of Aristotle*, tr. J.R. Catan (Albany, NY, 1980), 422.

<sup>13</sup> C. Kahn, ‘Pythagorean philosophy before Plato’, in A.P.D. Mourelatos (ed.), *The Pre-Socratics* (Garden City, 1974), 174. Nor does he account for this passage in his more comprehensive study of Pythagoreanism, *Pythagoras and the Pythagoreans* (Indianapolis and Cambridge, 2002), although he does there cite (p. 62) an earlier passage of Theophrastus’ text (*Metaph.* 6b11).

<sup>14</sup> G. Fine, *On Ideas: Aristotle’s Criticism of Plato’s Theory of the Forms* (Oxford, 1993).

<sup>15</sup> J.-F. Pradeau, *Platon, l’imitation de la philosophie* (Paris, 2009).

<sup>16</sup> Laks and Most (n. 1), 86 speculate without comparative evidence that ‘l’existence même du désir d’imitation est prise comme un *signe* de la distance qui sépare le monde naturel de l’Un-bien’ (italics original). To my knowledge, Theophrastus nowhere speaks of distinguishing a metaphysical operation from a ‘sign’ in the *Metaphysics*.

<sup>17</sup> Dillon (n. 2), 185–6.

It is to be noted that in the present discussion the theory of μίμησις is in contrast to the Aristotelian doctrine of cosmic ἔφεις/ὄρεξις, whereas elsewhere these notions are associated with it, μίμησις featuring in the context of cosmic ὄρεξις, 7b 23ff. ... ὄρεξις/ ἔφεις in that of cosmic μίμησις, 11a 27 f.: Πλάτων δὲ καὶ οἱ Πυθαγόρειοι μακρὰν τὴν ἀπόστασιν, ἐπεὶ μιμεῖσθαι γ' ἐθέλειν ἅπαντα. All this seems to indicate that, although he takes as his point of departure here the Aristotelian doctrine, to [Theophrastus] himself cosmic ὄρεξις and cosmic μίμησις are cognate notions – which, incidentally, may be precisely why the discussion of ὄρεξις here provokes his comments on the notion of μίμησις.<sup>18</sup>

Van Raalte's interpretation improves our understanding of the passage by placing it within the larger context of Theophrastus' thought. But it does not sufficiently address the concerns I have raised about what (if anything) could be understood by Theophrastus' attribution to Plato and the 'Pythagoreans' of reduction to the first principles via 'imitation'. Moreover, while she is correct to note that Aristotelian 'tendency toward' (ἔφεις) and Platonic/'Pythagorean' 'imitation' (μίμησις) are 'cognate notions' for Theophrastus in Aporia 24, Van Raalte assumes that the arguments concerning the 'Pythagoreans' agree with and substantiate Aristotle's claim that, for the 'Pythagoreans', sensibles imitate numbers.<sup>19</sup> Unfortunately, she goes no further in making sense of how Theophrastus – whose treatment of these issues, as I will show, diverges in notable ways from his teacher's – modifies, appropriates or responds to the Aristotelian claim.<sup>20</sup>

What is apparent from this brief discussion of the secondary literature is that – with the exception of Van Raalte, whose account, while valuable as an impetus, is both problematic and incomplete<sup>21</sup> – very little attention has been paid to the idea of Platonic and 'Pythagorean' reduction through the operation of 'imitation' as presented by Theophrastus in his *Metaphysics*. This article will proceed by interrogation of the concepts of 'reduction' and 'imitation' as described in the extant fragments of Theophrastus' writings – with special attention to his *Metaphysics* – in an attempt to make sense of how, precisely, Theophrastus characterizes the metaphysical systems of Plato and the 'Pythagoreans'. The goal here is to provide greater insight into Aristotle's claims concerning the intellectual legacy of Plato and the 'Pythagoreans' in *Metaphysics* A by contextualizing his account with that of Theophrastus. A fuller examination of Aporia 24 produces important new understandings of the nature of the Early Academy in the mid fourth century B.C.E. Specifically, what I will argue is that by ascribing the concept of reduction via 'imitation' to Plato and the 'Pythagoreans', Theophrastus is actually describing theories about the structure of the universe held by an important Platonist competitor and the contemporary head of the Academy in Athens, Xenocrates of Chalcedon (396/5–314/13 B.C.E.), who (a) took it upon himself to establish a Platonic doctrine that could be associated with his master's writings and (b) coordinated that doctrine with the philosophical precepts of the Pythagoreans. As a consequence of our study, we are prompted to question Aristotle's famous ascription of a theory of 'imitation' to the metaphysics of the genuine contemporary or recently deceased Pythagoreans (such as Philolaus of Croton or Archytas of Tarentum) and consider how Xenocrates' writings on Plato and the

<sup>18</sup> Van Raalte (n. 3), 185.

<sup>19</sup> She simply closes by quoting Ross and Taylor, whose comments on this passage are not particularly helpful for our study.

<sup>20</sup> This, of course, assumes that Aristotle's *Metaphysics* A was written before Theophrastus' *Metaphysics* or, perhaps, that the question was more generally in the air. On the chronology of the works, see the useful discussion of Gutas (n. 1), 3–9.

<sup>21</sup> I will discuss my criticisms further below.

'Pythagoreans' might be informing both Theophrastus' and Aristotle's descriptions of the Platonic and Pythagorean philosophical system(s). Investigation of such matters might have the potential to enlighten us about how Plato's students in the Early Academy were engaged both in the project of assimilating specific aspects of Plato's philosophy to that of the Pythagoreans and in the codification of the central tenets of Plato's metaphysics.

## II. ARISTOTLE'S ACCOUNT IN *METAPHYSICS A* vs. THEOPHRASTUS' ACCOUNT IN HIS *METAPHYSICS*

Few passages in Aristotle's *Metaphysics A* have catalysed such confusion among historians of ancient philosophy as his description of Plato's inheritance of Pythagorean philosophy. After all, Aristotle, as Plato's student, is a reliable witness of Plato's philosophy – at least in so far as he reads Plato through his own philosophical assumptions and technical terminology – and, more importantly, he is the first systematic historian of philosophy whose work survives.<sup>22</sup> The pursuit of first principles for philosophy, a project that Aristotle in some ways inherited from Plato (and, I might add, the Pythagorean Philolaus),<sup>23</sup> naturally brings in tow a flurry of problems, questions and concerns that themselves informed both Aristotle's composition of the *Metaphysics* and Theophrastus' approximation to Aristotle's effort. Things are made more complicated, and friction arises, when we seek the first principles of (historical) existence, things that are meant to function on the one hand as logically prior principles of knowledge (such as hypotheses assumed for a proof) and temporally prior origins of a phenomenon that we can trace up to the present moment – such as philosophy which, in Aristotle's opinion anyway, has a traceable history. Throughout the *Metaphysics*, Aristotle exhausts himself with the first of these questions, whereas (for the most part) the second he relegates to a sketch in Book A. Consequently, when he attempts to present a diachronic historical 'lineage' for the development of philosophy in *Metaphysics A*, he sometimes complicates this 'lineage' with a comparative or dialectical study of principles. One possible result of the tension that arises is that such an exercise in dialectic might force Aristotle into believing that the terms of the comparison employed are unclear, or perhaps even ill-equipped for the subject at hand, as we see in his analysis of Plato and the 'Pythagoreans':

After the aforementioned philosophies [of the 'Pythagoreans'] came the system (πραγματεία) of Plato, which followed them in most respects, but his philosophy had peculiar features that

<sup>22</sup> That is, he is 'systematic' in his historiography in the sense that he (a) attempts to maintain a consistent set of objective interpretive paradigms and terminology for the various types of philosophers who are antecedent to and contemporary with him and (b) gestures in the direction of creating lineages of thought based in temporal progression up to his own philosophy. One could thus see Aristotle as providing a historiographical method that attempts to reconcile, in the words of A.W. Nightingale, 'Historiography and cosmology in Plato's *Laws*', *AncPhil* 19 (1999), 299–326, at 324, the 'objective and atemporal' aspects of first philosophy with an account that recognizes mutability over time. Moreover, countless attempts to identify Aristotle's interpretive paradigms arise in scholarship because of the difficulty in grasping Aristotle's larger system of 'first philosophy', which is reflected in his historiographical material as well. On this subject, see especially R. Barney, 'History and dialectic (*Metaphysics A.3*, 983a24–984b8)', in C. Steel (ed.), *Aristotle's Metaphysics Alpha* (Oxford, 2012), 69–104; M. Frede, 'Aristotle's account of the history of philosophy', *Rhizai* 1 (2004), 9–44; and M. Schofield, 'ARXH', *Hyperboreus* 3 (1997), 218–35.

<sup>23</sup> Cf. Schofield (n. 22), at 222.

went beyond theirs ...<sup>24</sup> With regard to participation (μέθεξις), it was only the name that he changed; for the 'Pythagoreans' say that things exist by 'imitation' (μίμησις) of numbers, whereas Plato says that they exist by 'participation' – changing the name. But what 'imitation' or 'participation of the Forms'<sup>25</sup> could be, they left an open question.

(Aristotle, *Metaph.* 1.6, 987a29–31, b11–15)

In the larger scheme of Aristotle's project, this passage is effectively transitional, that is, it marks the point in the narrative where Aristotle shifts from describing the historical development of Plato's thought – both in terms of the larger scope of the history of philosophy and in terms of the idiomatic development of Plato's thinking throughout his lifetime – to a discussion of Plato's ontology, with special attention paid to the three types of entities (Forms, intermediary objects of mathematics, sensibles) and the chain of causation that leads from first principles. Aristotle pays special attention to the first principles of Plato and the 'Pythagoreans', that is, the 'One' and the 'Unlimited': in the passage that follows (1.6, 987b14–988a2), he emphasizes that Plato 'spoke' (ἔλεγε) in a way very close to the 'Pythagoreans', with the characteristic differences in their philosophical systems being (a) Plato considered the Unlimited not to be one thing, but two (that is, the 'Great and the Small'); (b) that Plato treated the 'One' as a substance (οὐσία) and not a predicate; (c) that he regarded numbers (including the 'One'?) and sensibles as distinct; (d) that he posited an intermediary group (that is, the objects of mathematics) between the 'One' and sensible objects; and (e) that he introduced the Forms. The reason, so Aristotle claims, for (c) and (e) is that Plato employed dialectical arguments, to which the 'earlier (οἱ πρότεροι) Pythagoreans' did not have access.<sup>26</sup> This is the extent to which Aristotle draws comparisons between Plato and the 'Pythagoreans' in this important but frustratingly compact summary.

Now we can use Aristotle's account as a test for that of Theophrastus (and vice versa) since, apparently, Theophrastus has taken up the open question concerning what Plato meant by 'participation in the Forms', as well as what the 'Pythagoreans' meant by 'imitation', by investigating the latter. Theophrastus' examination of 'imitation' takes up from where Aristotle had left off and, although Aporia 24 itself cannot count as a comprehensive analysis of this problem (its focus, after all, is on explaining the 'distance' between the first principles and everything else), examination of the problem of 'imitation' in Theophrastus' *Metaphysics* as a whole yields valuable results. Still, with regard to each author's treatment of the relationship between Plato and the 'Pythagoreans', I would argue that there is significant divergence of opinion.

It will be of value to start by examining what is similar in these accounts. On two issues Aristotle and Theophrastus can be said to agree: first, they agree that, for Plato and the 'Pythagoreans', some sort of 'imitation' is the vehicle for relationships between the first principles and sensible objects; and, second, they both present the essential first principle as the 'One'.

Beyond that, their accounts surprisingly diverge in many ways. The closest point of comparison is their treatment of the Platonic and 'Pythagorean' principle of duality, which Aristotle calls the 'Unlimited' (as a general term that refers to the first principles

<sup>24</sup> I omit the description of how Plato first adopted Heraclitean doctrines through his contacts with Cratylus, next adapted Socratic approaches to definition and then developed a theory of the Forms.

<sup>25</sup> Retaining with Ross the MSS reading τῶν εἰδῶν.

<sup>26</sup> This phrase is important, because it clarifies that the 'Pythagoreans' about whom Aristotle is speaking cannot be the Platonists Philip of Opus, Speusippus or Xenocrates, as is argued by L. Zhmud, 'Some notes on Philolaus and the Pythagoreans', *Hyperboreus* 4 (1998), 243–70, at 265.

of both Plato and the ‘Pythagoreans’) and Theophrastus the ‘Indefinite Dyad’. At first glance, this might seem to be splitting hairs, except for the fact that Theophrastus immediately goes on to explain that, for Plato and the ‘Pythagoreans’, the Unlimited resides (or is) ‘in’ the Indefinite Dyad, just like the qualities of being without order or shape (ἐν ἧ καὶ τὸ ἄπειρον καὶ τὸ ἄτακτον καὶ ὡς εἶπεῖν πᾶσα ἀμορφία καθ’ αὐτήν). As a fundamental term in Aristotle’s classification of beings, to be ‘in’ something must be understood as vastly different from being identical to it. For the Aristotle of the *Categories* (1a24–b9), anything that is ‘in’ a subject is a quality that cannot exist independently of that subject; this is perhaps something like what Theophrastus means when he claims that the ‘Unlimited’ (τὸ ἄπειρον), the ‘Unordered’ (τὸ ἄτακτον) and ‘all Shapelessness as such’ (πᾶσα ἀμορφία καθ’ αὐτήν)<sup>27</sup> are ‘in’ the Indefinite Dyad. It is likely that the terminology for ‘in’ employed by Theophrastus is in dialogue with Aristotle’s and Plato’s usages, although a lack of corroborating evidence from his *Metaphysics* complicates any understanding on our part of Theophrastean ‘inherence’. It should also be noted that Plato’s *Timaeus*, which exercised a great deal of influence over Platonist metaphysics, describes the Receptacle in similar terms, calling it essentially ‘shapeless’ (ἄμορφον) and describing it as the matter ‘in’ which (ἐν ᾧ) the Demiurge creates imitations of the Forms to which he is looking.<sup>28</sup> The fact that ‘in’ features prominently in both Aristotelian and Platonist systems of language and metaphysics suggests that the question of the logical and ontological values of ‘in’ was up for grabs among the successors of Aristotle and Plato.<sup>29</sup>

Related to the issue of the Unlimited, the Unordered and Shapelessness ‘as such’ (καθ’ αὐτήν) is the question of the Forms. Now Aristotle clearly speaks about the Forms in his discussion of Plato’s *pragmateia*, and there has been a long debate about whether numbers played the same role in ontology of the ‘Pythagoreans’ as the Forms did in Plato’s. It is notable that numbers (οἱ ἀριθμοί) do not appear in Theophrastus’ account of the Platonic and ‘Pythagorean’ ontology in Aporia 24 of his *Metaphysics*, although there was a fierce and sustained debate about whether the One and the Indefinite Dyad were actually numbers in the Early Academy and Lyceum. Neither do the Forms, at least explicitly: a survey of occurrences of the ‘Form’ terminology in Theophrastus’ *Metaphysics* suggests that the terms εἶδος and γένος are used taxonomically, as ‘species’ and ‘genus’, in accordance with Aristotelian usage; the only term that apparently means something like ‘Form’ in Theophrastus’ *Metaphysics* is ἰδέα, which he uses twice, once to refer to something like the Forms of Plato’s middle dialogues (6b13) and once to refer to outward shape (10b28), as was relatively more common in the Greek language.<sup>30</sup> But by referring to

<sup>27</sup> On this passage, see more below.

<sup>28</sup> Pl. *Ti.* 50c6–e1. Luc Brisson reminds me that the overall inheritance of this passage goes back to Plato’s *Phaedo* (esp. 101b10–102a1), but I might emphasize that there we see a focus on ‘participation’ (μετοσχεῖν) of things in ‘Oneness’ or ‘Twoness’, rather than the language of being ‘in’, as we find in the account of *Timaeus* and in Theophrastus’ summary.

<sup>29</sup> Note that Theophrastus emphasizes the importance of being ‘in’ for his *Metaphysics* by concluding it (11b27–12a2) with the statement that ‘this is the ἀρχή of the study of the whole, in what the things that are real exist (ἐν τῶν τῶν ὄντων) and how they relate to one another (πᾶς ἔχει πρὸς ἄλληλα)’. Cf. Theophr. *Metaph.* 4a17ff. and 4b8–11: ‘Therefore, it is in accordance with better reason that, having the nature of a principle [a prior and more powerful substance (τις οὐσία προτέρα καὶ κρείττων) than mathematical] be in a few, unordinary things – that is, if not in things primary, then in the first thing’.

<sup>30</sup> For an informative study of ‘Form’ terminology in antecedent Greek literature and in Plato’s dialogues (up to the *Phaedo*), see F.-G. Herrmann, *Words & Ideas: The Roots of Plato’s Philosophy* (Swansea, 2007), chh. 5 and 9.

the Unlimited, Unordered and Shapelessness 'as such' (καθ' αὐτήν) Theophrastus is probably speaking about Forms (in a Platonic and/or Platonist sense) of the qualities of being limitless or lacking order and shape. This is the language Plato himself uses to describe the Forms in the *Phaedo*, in what we might consider, with Ross, their definitive appearance in Plato's oeuvre.<sup>31</sup> On this reading, Theophrastus does address the problem of the Forms as Aristotle had done, but only in an oblique way: the attributes or qualities of being shapeless, and their attendant Forms (if that is how we are to read them), are ontologically dependent on the Indefinite Dyad as a first principle.<sup>32</sup>

It is only in the aforementioned sense, that is, ontologically, that one might understand any possible reference to predication, which is expressly discussed in Aristotle's account. In general, Theophrastus does not treat predication of the Aristotelian type in his *Metaphysics*, despite its central importance to both of Aristotle's major works on first philosophy, the *Categories* and *Metaphysics*.<sup>33</sup> Nor does Theophrastus attribute any sort of 'definition' that might lead to predication, thus removing entirely the Socratic element that Aristotle emphasized as a distinguishing factor between the philosophies of Plato and the 'Pythagoreans'. Finally, and most conspicuously, Aporia 24 makes no explicit reference to anything like the 'objects of mathematics' with which Aristotle famously associated Plato's philosophy. We might be surprised to find that, in many aspects of his philosophy (notwithstanding the history of philosophy), Theophrastus does not simply adopt Aristotelian assumptions about language and logic.

What is the result of such a comparison between the accounts of Aristotle and his student? What becomes quickly apparent is that Theophrastus' account, while it takes up the question of 'imitation' raised by Aristotle, represents a distinct treatment of the relationship between Plato and the 'Pythagoreans'. We are thus prompted to ask ourselves whether Aristotle's and Theophrastus' accounts of this relationship (a) are informed by different sources on this relationship<sup>34</sup> or (b) focus on different aspects of the relationship. The picture that begins to develop is one of divergent ways of linking

<sup>31</sup> Pl. *Phd.* 65b8–66a5. Cf. W.D. Ross, *Plato's Theory of Ideas* (Oxford, 1951), at 22. Note the epistemological compatibility, as 'thinking itself by itself' might discover 'reality itself by itself': 'Then he will do this [grasp that thing itself] most perfectly who approaches the object with thought alone, without associating any sight with his thought, or dragging in any sense perception with his reasoning, but how, using pure thought alone (ὅντῃ καθ' αὐτήν εἰλικρινεῖ τῇ διανοίᾳ χρόμενος), tries to track down each reality pure and by itself (αὐτὸ καθ' αὐτό), freeing himself as far as possible from eyes and ears, and in a word, from the whole body ...' (tr. after Grube). Of course, Plato inherited what was a relatively common phrase from earlier writers (cf. Herrmann [n. 30], 14–20) and modified its semantic potential, in such a way that it could be appropriated in a new technical sense. Cf. Herrmann (n. 30), 19: 'In the case of καθ' αὐτό, the phrase did establish itself as part of Plato's technical terminology and was as such received and adapted by Aristotle and subsequent philosophers.'

<sup>32</sup> See Merlan (n. 5), 195–7 for a helpful discussion of the tendency of Plato to suggest something like reduction to 'non-being' in Plato's *Sophist*, a tendency that the Platonists developed into systems.

<sup>33</sup> It is debatable to what extent we can follow the late antique sources that suggest a *Categories* had been written by Theophrastus (cf. H.B. Gottschalk, 'Did Theophrastus write a *Categories*?', *Philologus* 181 [1987], 245–53). There is one clear example of Theophrastus having knowledge of Aristotle's *Categories* and criticizing it (F 153a FHSG = Simpl. in *Cat.* 435.27–31 Kalbfleisch).

<sup>34</sup> A question of concern especially to Philip (n. 9), 11–12, who allows for the possibility that Speusippus and Xenocrates, whom he takes to be the sources for Theophrastus' descriptions here, were 'right' and Aristotle 'wrong'. But the pursuit of 'right' and 'wrong' understandings of Pythagoreanism/s obscures the path to understanding both (a) how each group, the Peripatetics and the Platonists, presented various accounts of the Pythagoreanizing of Plato and (b) how each philosopher's system tried to represent Platonic and/or 'Pythagorean' doctrine in its own terms.

Plato with Pythagoreanism, with Aristotle on one side, and his student Theophrastus on the other. Does this divergence occur because Theophrastus is expanding upon Aristotle's characterizations of Platonic and Pythagorean thought (perhaps in a lost work?), because both are independently deriving their propositions from the same source/s, or perhaps both? Are the 'unwritten' doctrines lurking in the background? Multiple attempts to make better sense of Aristotle's claim (*Metaph.* 987b11–14) that 'the "Pythagoreans" say that things exist by "imitation" of numbers, whereas Plato says that they exist by "participation" in the Forms – changing the name' have produced little if any agreement among scholars, even going as far back as Zeller in the late nineteenth century. I suggest that we might gain traction on the problem of 'imitation' by appeal to a closer examination of Theophrastus' *Aporia* 24, directing our attention to how Theophrastus understands 'imitation' throughout his philosophical writings and how this might be derived from what are likely to have been his immediate sources in the Early Academy.

### III. THEOPHRASTUS ON XENOCRATEAN REDUCTION VIA 'IMITATION'

Theophrastus and the doxographical tradition that follows from his fragmentary and lost writings constitute some of the most important sources for our knowledge of the Early Academy after Plato's death. The other major early source is Aristotle. But, as we have already seen, it is relatively common for Theophrastus and Aristotle to disagree about attribution of philosophical doctrine to various competitors and predecessors, as well as to clash about how to challenge those figures. Theophrastus' treatment of the major Platonists Speusippus and Xenocrates, as well as less notable figures like Hestiaeus, Philip of Opus and Hermodorus, comes out of the perspective of his own philosophical system, as Dillon has argued in recent work.<sup>35</sup> This means that we are able to approach the problem of Platonic/'Pythagorean' 'imitation' by way of (a) Theophrastus' employment of this concept in his own philosophical systems and (b) the Platonists' application of the same concept to their own philosophical systems.

In the most general sense, 'imitation' (μίμησις) is an activity or, perhaps better, a metaphysical operation that is associated with various topics in Theophrastus' writings. It is possible that, like Aristotle, he had a theory of literary 'imitation', or at least used the term and its cognates in reference to comedy, drama and historiography, although the evidence is meagre and circumstantial.<sup>36</sup> With regard to Theophrastus' writings on plants and other natural objects, there is no evidence for any peculiar notion of 'imitation'. There is, however, one example where Theophrastus describes 'imitation' as an operation that mediates between entities. While defending the idea that mountains grow in his writings on physics, Theophrastus ascribes to 'wise men of old' the idea that the upward force of fire from deep inside the earth brings with it earth that, once it reaches a certain peak, 'imitates' the shape of fire (τὸ πρὸς σχῆμα μιμουμένη).<sup>37</sup>

<sup>35</sup> J. Dillon, *The Heirs of Plato: A Study of the Old Academy (347–274 BC)* (Oxford, 2003), especially ch. 3 on Xenocrates and the article cited at n. 2, which remains the best overall assessment of this topic.

<sup>36</sup> Cf. S. Halliwell, *The Aesthetics of Mimesis: Ancient Texts and Modern Problems* (Princeton, 2002), 287; R. Janko, *Aristotle on Comedy: Towards a Reconstruction of Poetics II* (Berkeley, 1984), 48–52 with n. 111; and V. Gray, 'Mimesis in Greek historical theory', *AJPh* 108.3 (1987), 467–86, at 484–5.

<sup>37</sup> Theophrastus F 184.105–21 FHSG = Philo, *De aeternitate mundi* 25.134–36.

Precisely who the 'wise men of old' might be is under dispute, with plausible candidates including Democritus, Heraclitus, and the Pythagorean Hippasus of Metapontum.<sup>38</sup> Regardless of the referent for this testimony, a brief survey of Theophrastus' surviving fragments reveals no unique theory of 'imitation' that we should ascribe to him; on the contrary, the only outstanding example of 'imitation' as an operation in the other fragments of Theophrastus' writings attributes it to another intellectual.

The most compelling descriptions of 'imitation' in Theophrastus' surviving writings, to be sure, come in other aporiae of his *Metaphysics*. In these passages, we discover that Theophrastus inscribes the unique problem of 'imitation' into the more universal problems of cosmic desire and motion. In search of what is most prior, one must seek, Theophrastus claims, the principle that is prior to movement. This principle cannot be moved, and it must exist only 'as such' (καθ' αὐτήν).<sup>39</sup> Theophrastus, following Aristotle, commits himself to the argument that the power which fulfils these requirements is a cosmic version of 'desire' (ὄρεξις) or, perhaps, 'tendency' (ἔφεσις).<sup>40</sup> The special relationship between Aristotelian 'desire' and 'tendency', on the one hand, and the Platonic/'Pythagorean' 'imitation', on the other, has been a noted subject for discussion among scholars since J.B. Skemp, whose contribution to the Symposium Aristotelicum of 1966 generated a debate among the participants about how Theophrastus' account of first principles challenges Aristotle's theories of cosmic motion, especially the unmoved mover.<sup>41</sup> Still, what Skemp and those who have followed him took for granted was the nature of reduction through the operation 'imitation', despite the lack of a clear definition of this concept for both Aristotle and Theophrastus.

'Imitation' plays a role in Theophrastus' metaphysics at several key points, a fact that is surprising given the infrequency of occurrences of terms relating to μίμησις in the corpus of his fragments. Before we can understand more precisely what Theophrastus means by 'imitation', we will be required to take a short detour from this idea in order to see the contexts for its development in his *Metaphysics*. A brief digression on the general description of Theophrastus' first principles in Aporia 5.1 allows us to

<sup>38</sup> For Democritus, see R. W. Sharples, *Theophrastus of Eresus: Sources for his Life, Writings, Thought and Influence, Commentary Volume 3.1: Sources on Physics (Texts 137–223)* (Leiden, 1998), 139–40. Heraclitus and Hippasus, however (cf. F 225.15–28 FHSG = Simpl. in *Phys.* pp. 23.33–24.12 Diels), were the figures associated with fire as the first principle that was 'One', 'in motion' and 'limited'. Theophrastus himself, in *On Fire* (F 4 Coutant), criticizes those who believe that fire is the first principle on the grounds that fire cannot subsist 'without matter' (ὄνευ τῆς ὕλης).

<sup>39</sup> Theophr. *Metaph.* 4b22. Cf. Aristotle's description of the prime mover at *Metaph.* 12.7, 1072a19–27 as 'something which moves although it is not moved' (τι ὃ οὐ κινούμενον κινεῖ). It should be noted that the difference between Aristotle's unmoved mover and the first principle described by Theophrastus is precisely the Platonic *per se* language.

<sup>40</sup> Theophr. *Metaph.* 5a1–5. Theophrastus' use of these terms indicates a strong affinity with Aristotle's accounts of cosmic will – if we can call it that – at both the levels of the heavenly and the individual human. Cf. Arist. *Metaph.* 12.7, 1072a26–30 (τὸ ὄρεκτόν described); *De motu an.* 6, 700b35–701a2 (τὸ μὲν οὖν πρῶτον οὐ κινούμενον κινεῖ, ἢ δ' ὄρεξις καὶ ὄρεκτικόν κινούμενον κινεῖ), where motion of animals is compared and contrasted with the motion of the heavens; *De an.* 3.10, 433a31 (ὄρεξις, considered the 'power in the soul' that originates movement). On ἔφεσις as a 'neutral term' related to ὄρεξις but 'apposite in physical contexts' specifically, see Van Raalte (n. 3), 165.

<sup>41</sup> J.B. Skemp, 'The *Metaphysics* of Theophrastus in relation to the doctrine of κίνησις in Plato's later dialogues', in I. Düring (ed.), *Naturphilosophie bei Aristoteles und Theophrast* (Heidelberg, 1969), 217–23, at 218 with n. 3.

see how Theophrastus conceives of ‘imitation’ as somehow related to how sensibles ‘connect’ with the first principles:

Such is the first principle [i.e. divine (θεία)], and since it is connected with the sensibles (συνάπτει τοῖς αἰσθητοῖς) – and nature is, to put it simply, in motion, and this is the property unique to it – it is clear that we must posit that principle as a cause of movement. And since it is as such unmoved (ἀκίνητος καθ’ αὐτήν), it is evident that it could not by being in motion serve as a cause of the things of nature. Rather, the only alternative is that it could do so by some other power superior and prior [to this]. And such is the nature of the object of desire (ἡ τοῦ ὀρεκτοῦ φύσις), from which comes the circular [motion] which is continuous and unceasing. Therefore, on this basis, [the objection] that there could not be any origin of motion except one that has been moved by means of a motion could be resolved.

(Theophrastus, *Metaphysics* 4b19–5a5)

As is clear from this passage as well as earlier ones,<sup>42</sup> what is being examined throughout Theophrastus’ doxography of other intellectuals’ metaphysical systems (especially, for our purposes, those of Plato and the ‘Pythagoreans’) is the nature of the ‘connection’ (ἡ συναφή) between the first principle/s and sensibles. Theophrastus is not fully innovating here, as investigation into the precise nature of the ‘connection’ between metaphysical and physical objects had been a concern of Plato in his various accounts of the Forms and dialectic.<sup>43</sup> Moreover, Theophrastus’ pursuit of the ‘connection’ between first principle/s and the phenomena reflects a Platonic and likely Platonist heritage, and it provides Theophrastus with a way to interrogate the anonymous proposal that ‘number itself’ (αὐτὸς ὁ ἀριθμὸς) could be a first principle. Aristotle, for his part, declares (*Metaph.* 987b22–988a2) that Plato ‘spoke’ in a way very similar to the ‘Pythagoreans’, by which Aristotle means that each held that ‘numbers are the causes of Being for everything else’ (τοὺς ἀριθμοὺς αἰτίους εἶναι τοῖς ἄλλοις τῆς οὐσίας). As I discussed earlier, Aristotle goes on to describe the distinctions between their systems, but at this point we might focus on one aspect that was of great concern to Theophrastus, namely the relationship of ‘connection’ between causes (or, in some cases, first principles) and sensibles. Aristotle claims in arguments (c) and (d) cited above that Plato did not conflate causes with sensibles, as the ‘Pythagoreans’ had done, but instead separated them out and provided as an intermediary the mathematical objects. Nowhere in this account does Aristotle refer to a ‘connection’ per se, but instead he concerns himself with relationships of ‘participation’ and ‘imitation’. In certain places of his earlier works *On Philosophy* and *Categories*, Aristotle figures problems of general ontology in terms of ‘connection’, and this is especially the case with mathematics.<sup>44</sup> Still, it should be noted that crucial passages of import in the *Physics* and *Metaphysics* refrain from using ‘connection’ as an operational term and might suggest

<sup>42</sup> At Theophr. *Metaph.* 4a20 and 4b1. Cf. Skemp (n. 41), 219 but, other than identifying the significance of συνάπτειν and its cognates for Theophrastus’ criticism of Aristotle, he does not go into detail about this concept. Van Raalte (n. 3), 86 simply notes, vis-à-vis Theophrastus’ project, that συναφή is ‘obviously relevant’.

<sup>43</sup> e.g. Pl. *Resp.* 588d7–e1; *Soph.* 253d5–e2.

<sup>44</sup> Aristotle may be said to present his most metaphysical version of this concept in (possibly) *On Philosophy* (F 17 Rose = Schol. in *Proverbia Salomonis*), in a passage worth quoting at length (because of its relevance for Theophrastus’ *Metaphysics*): ‘The first principle is either one or many. If it is one, we have what we’re looking for. But if there are many, they are either arranged or unarranged. And if they are unarranged, the things that come from them are more unarranged, and the ordered world is not ordered (ὁ κόσμος) but chaos (ἄκοσμία), and that which is contrary to nature exists since what is in accordance with nature does not exist. But if they are arranged, either the things were ordered by themselves or by some outside cause. But if they were ordered by themselves, they

some uneasiness about using it in reference to Aristotle's own ideas about physics and metaphysics, at least in his later writings.<sup>45</sup>

The shift away from using 'connection' as a way of describing ontological relationships in Aristotle's philosophy might be thought to signal Aristotle's increased criticism of Platonist doctrines, especially the influence of Xenocrates on the question of the Forms.<sup>46</sup> Of particular concern to Aristotle as well as Theophrastus, I would argue, is the 'mathematical' status of the Form-Numbers. Theophrastus examines this problem with consideration of the semantics of 'connection' and related terms, which were important in theoretical mathematics as discussed in the Lyceum and the Academy.<sup>47</sup> While, among surviving fragments of Speusippus, the term 'connection' (ἡ συναφή) and its cognates do not appear, it features prominently in an important and understudied<sup>48</sup> summary of Xenocrates' ontology of beings that bears import on Theophrastus' account:

Of the three types of triangular entities, the equilateral, so Xenocrates claimed, devotes itself to all the divine souls in so far as they are controlled by the One. For Equality is Unity. Thus they are also called divine, for the One is the unique property of the divine. But since the one that is in souls is not [the One] by itself, but it participates (μετεχόμενον) in the Multiplicity that is in them, Unity becomes Equality in the souls devoted to the divine on all sides and generates in all

have something in common, a connection (τι κοινὸν τὸ συνάπτων), and that is the first principle'. Also cf. Arist. *Cat.* 4b26–5a1, on which see the next note.

<sup>45</sup> 'Connection' is an activity associated with the activity of mental combination, and contrasted with separation, in Aristotle's analysis of dialectic in *Metaphysics* E (6.4, 1027b23–34; cf. 13.4, 1078b9–12, where he warns against 'connecting' (συνάπτωντας) the Forms with numbers. The classic example of Aristotle's discussion of 'connection' as a mathematical term would be his treatment of quantity in ch. 6 of the *Categories* (4b20–6a36). There, Aristotle identifies two types of quantity, namely, the discrete (τὸ διορισμένον) and the continuous (τὸ συνεχές). He classifies number and speech as discrete, as well as line, superficies, solid, time (cf. *Phys.* 4.11, 218b25–7), and place as continuous. Aristotle demonstrates that number is discrete by arguing that 'there is no common boundary (κοινὸς ὄρος) among the parts of number towards which its parts connect' (πρὸς ὃν συνάπτει τὰ μόρια αὐτοῦ). Further development of this usage occurs in Books 5–6 of the *Physics*, especially in Aristotle's definition of 'continuity' (τὸ συνεχές), where he claims it is due to something's natural constitution vis-à-vis 'connection' (ἡ συναψις) that it is able to be continuous (cf. *Phys.* 5.3, 227a15). In this section of the *Physics*, however, Aristotle prefers to speak more simply of 'touching' (τὸ ἄπτεσθαί τιγγάνων) rather than 'connection', which he associates with people who confuse universality and separate existence (*Metaph.* 13.9, 1086a35–7, but there is a problem with the text, on which see Ross' note ad loc.; also cf. *De motu an.* 3, 699a15, with Nussbaum's note ad loc.). For a useful discussion of the shift in Aristotle's position regarding the ontology of mathematical objects, see J. Cleary, *Aristotle and Mathematics: Aporetic Method in Cosmology and Metaphysics* (Leiden, 1995), 143–8.

<sup>46</sup> Note e.g. Aristotle's criticism of Xenocrates' Form-Numbers in *Metaphysics* M (13.4, 1078b9–11, not in Isnardi Parente's or Heinze's editions): 'But with regard to the Ideas we should first examine the actual theory in relation to the Idea, without connecting it with the nature of number (μηδὲν συνάπτωντας πρὸς τὴν τῶν ἀριθμῶν φύσιν), but as the first people who posited Ideas originally propounded it.' For an elegant but not uncontroversial narrative of the development of Aristotle's *Metaphysics* vis-à-vis Xenocrates, see W. Jaeger, *Aristotle: Fundamentals of the History of his Development*, tr. R. Robinson (Oxford, 1948<sup>2</sup>), ch. 7.3.

<sup>47</sup> A remarkable treatment of the problem of 'contact' (figured variously as συναφή, συναψις, ἐκταφή and related cognates) among circles, lines and points occupies a sustained criticism of some anonymous mathematicians in the Pseudo-Aristotelian *On Indivisible Lines* (970a27–971b31). One of the figures being criticized in this text, as Dillon (n. 2), 113–17 has discussed in detail, is Xenocrates, on whom see below.

<sup>48</sup> See e.g. Dillon (n. 2), 183 who prophetically comments: 'Presumably lying behind this theological exposition there was a more "physical" account, involving something like the basic triangles of the *Timaeus*.' I have not found that any of the major studies of Xenocrates or, for that matter, of Theophrastus have taken this passage sufficiently into account.

living beings a triangle equal on all sides. Thereby, they [wise men of old?]<sup>49</sup> also devote the entirety [of the triangle to the divine], both the motions in straight lines and the conjunctions of motions in angles.

The isosceles triangle is consecrated to those souls that come after the divine souls and are daemonic. In these souls, which are intermediary, are both Equality and Inequality, Unification and Diversity of powers, since their bases are unequal to the lines above them. Consequently, then, the *daimones* attach themselves (*ἐφάπτονται*) to the inferior entities at their [lower] extremities, as well as to the superior entities at their higher extremities; and attachment assimilates them (*ἢ ἐπαφή ... ἐξομοιοῖ*) to the [superior entities] in virtue of Equality, whereas it connects them (*συνάπτει*) to the [inferior entities] in virtue of Inequality.

And, in fact, the third type of souls, the scalene, which is unequal in every way, is the image (*εἰκόν*) of those that ascend and descend, the ones which are unequal to the superior and the inferior entities – for, indeed, they [the isosceles souls?], once put into motion, touch upon [the superior entities] now more, and now less; and the same with regard to the inferior entities; and, most incredible, the same with regard to one another as well. Thus, to those which are unequal in every way, that which is Unequal in all aspects is assigned.

(Xenocrates F 223 Isnardi Parente = Procl. *In Remp.* 2.48.4ff. Kroll)

I suggest that Proclus' presentation of Xenocrates' fragment helps us to understand more precisely what Theophrastus means when he discusses 'connection' between sensibles and first principles in his *Metaphysics*. In order to make sense of this claim, however, it will be necessary to discuss in some detail what Proclus is saying about Xenocrates' so-called 'intermediary' type of souls, since the 'intermediary' realm is the place where 'imitation' of some sort apparently occurs. Xenocrates associates the 'daemonic' souls, *which are not the same as the 'divine' souls*, with isosceles triangles, on the grounds that 'daemonic' souls are (a) intermediary between the superior (that is, the equilateral) and the most inferior (that is, the scalene) entities and (b) have 'in' them contrary Forms, such as Equality and Inequality or Unification and Diversity. They are unlike the superior entities apparently by virtue of their being at a distance from the first principles, namely the One and Multiplicity, which are the Forms in which only the highest type of triangle (that is, the equilateral) participates (*μετεχόμενον*). Note that participation is an operation that *only occurs between the very highest orders of being*, whereas everything below employs different operations related to what we might consider types of 'attachment'.<sup>50</sup> The intermediary entities are 'assimilated' (*ἐξομοιοῖ*) to the highest type of entities, which is evident, so Xenocrates argues, in the fact that two of their three sides (that is, the two that are distinct from the base) are equal. Contrastively, their base is unequal to the other two sides; by virtue of the Inequality 'in' them, the isosceles entities are said to be 'attached' (*συνάπτει*) to the lower entities, the scalene triangles, which possess sides that are all unequal. It is difficult to know with precision what terminology can be traced directly back to Xenocrates,<sup>51</sup> but the text is pretty clear in distinguishing two species of 'attachment'

<sup>49</sup> So speculates A.J. Festugière, *Proclus: Commentaire sur la République* (Paris, 1970), 156, but the issue of who is doing this activity must be kept open especially if Proclus is following Xenocrates' text closely.

<sup>50</sup> It is easy to underestimate the significance of this point. We will recall that Aristotle (*Metaph.* 1.6, 987b11–15) characterizes Plato as understanding 'participation' (*μέθεξις*) as the vehicle for bridging separation between the Forms and sensibles, and the 'Pythagoreans' as understanding the same operation to be 'imitation' (*μίμησις*). Apparently, Xenocrates *combines Platonic and Pythagorean metaphysics* (in Aristotle's description) by setting up 'participation' and 'imitation' as operations that catalyse relations between particular strata of the entire cosmos. Thanks to George Boys-Stones for pressing me on this.

<sup>51</sup> Speusippus may have used comparable terminology, which makes it possible that the language

(ἡ ἐπαφή) for the daemonic types of souls, namely, attachment to the superior parts of the cosmos, which is the activity of upwards 'assimilation' (ἡ ἐξομοίωσις), and attachment to the inferior parts of the cosmos, which is activity of downwards 'connection' (ἡ συνναφή).<sup>52</sup> Importantly, the attachment of the daemonic souls that leads upwards, namely 'assimilation', might be a concept coextensive with the concept of reduction through 'imitation' that Theophrastus attributes to Plato and the 'Pythagoreans' in *Aporia* 24 of his *Metaphysics*.<sup>53</sup>

Indeed, if we return to the basic notion under scrutiny in Theophrastus' discussion of first principles and of the nature of the 'connection' between superior and inferior entities, namely, whether 'number itself' (αὐτὸς ὁ ἀριθμὸς) could be a first principle, we are struck by quite specifically Xenocratean-sounding language.<sup>54</sup> 'Number itself'

itself goes back to the Early Academy. L. Tarán, *Speusippus of Athens* (Leiden, 1981), 430–1 speculates about Speusippus' use of the term ἐπαφή for mental 'apprehension' (F 74 Tarán = Procl. *In Euc.* p. 179.12–22), which he compares (following Stenzel) with similar usages of ἐφάπτεσθαι in passages of Plato's dialogues (*Symp.* 212a4 and *Ti.* 37a5–6). Indeed, it is possible that the Peripatetic author of *On Indivisible Lines* is referring to Speusippus when (969a32–b2) he criticizes the proposition, attributed to people who might think that the mind's 'apprehending of infinite things' (ἐφάπτεσθαι τῶν ἀπειρῶν) is 'counting' (ἀριθμεῖν). Xenocrates' use (if it is indeed his) of the term ἐπαφή, to be sure, does not demonstrate applicability to cognition in the same way as Speusippus', in part because Xenocrates accepts the Forms and the attendant *per se* ontology. For example, Xenocrates' use accords more fully (in an epistemological context) with Plato's working definition of φρόνησις (*Phd.* 79d1–9) as the soul's activity of 'ceas[ing] to stray and remain[ing] in the same state, since it is in touch with things of the same kind' (ἀεὶ κατὰ ταῦτά ὡσαύτως ἔχει, ὅτε τοιούτων ἐφαπτομένη). According to Cherniss (n. 10), 407 and 394 with n. 316, Aristotle takes the notion of attachment as described in Plato's *Timaeus* (37a2–b3) too literally because he assumes that the soul's activity of ἐφάπτεσθαι with the objects of thinking is a physical contact of two divisible magnitudes.

<sup>52</sup> M. Isnardi Parente, *Senocrate – Hermodoro: Frammenti* (Naples, 1982), at 414 follows Heinze in suggesting that it is more likely that Proclus has derived some information here from Plutarch, rather than directly from Xenocrates. There is reason to doubt this. Of the nine occurrences of ἐπαφή in Plutarch's works (outside of quotations of Greek tragedians), only one (*Adv. Col.* 1109d4) evinces philosophical application, and there it is employed in an epistemological context that resembles (to some degree) the usage of Plato and Speusippus. Importantly, there is no mathematical or ontological context for this term in Plutarch's works; likewise, it never occurs in the surviving fragments of Nicomachus. It is also doubtful that the language of 'attachment', especially the nominal concept of ἐπαφή, is uniquely Proclean: outside of Xenocrates F 223 IP and Speusippus F 73 Tarán (cited above), we should note, the term does occur eighteen times in Proclus' corpus. Of those occurrences, twice (*In Ti.* 2.296.28 Diehl and *Mal. Sub.* 51.3) does ἐπαφή refer to an explicitly epistemological context (developing Plato's and Speusippus' usage of ἐφάπτεσθαι); and twice (*In Prm.* p. 871.24 Stallbaum and *In Ti.* 1.349.30 Diehl) does it refer to an expressly mathematical context, following a standard usage in Euclid, Archimedes and Apollonius of Perga, who wrote two books *On Tangents*. We cannot be absolutely sure when the language of tangents/attachment became associated with Platonism, but we cannot discount Xenocrates himself, who undertook the project of geometricizing Plato's metaphysics in several works.

<sup>53</sup> Of course, Plato closes description of the history of the universe in the *Timaeus* (90d1–7) by suggesting that humans should learn the harmonies and revolutions of the universe in order to 'assimilate' (ἐξομοίωσαι) the activity of contemplation to the objects of said contemplation. Such assimilation produces the best life possible for humans.

<sup>54</sup> Plutarch (*Quaest. Plat.* 1007c = F 171 IP), Alexander of Aphrodisias (*In Top.* 493.21 Wallies = F 173 IP), Philoponus (*In An. post.* p. 348.2 Wallies = F 185 IP) and others formulate Xenocrates' famous definition of the soul as 'number itself moving itself' (ἀριθμὸς αὐτὸς ἐαυτὸν κινῶν), apparently following Aristotle's description at *Top.* 6.3, 140b2 (= F 168 IP). Cf. Dillon (n. 2), 177. It is true, as Mariska Leunissen points out to me, that Aristotle too employs the term 'number itself' (ἀριθμὸς αὐτὸς) when giving an explanation for how things could have essential attributes (i.e. exist καθ' αὐτά) in the *Posterior Analytics* (1.22, 84a12–18). But, within the context of discussing ontological 'connection', and given the significance of number to the entire metaphysical system being described by Theophrastus, it becomes unlikely that Aristotle is the target here.

as described here suggests the absolute Form-Number that is associated with Xenocrates' philosophy by Aristotle and others.<sup>55</sup> Moreover, when Theophrastus explicitly describes Xenocrates' ontological system – under the general heading of those who posit the first principles as the One and the Indefinite Dyad<sup>56</sup> – he praises Xenocrates and distinguishes him from the other Platonists for 'somehow assign[ing] everything a place in the universe, alike objects of sense, objects of intellection, mathematical objects and, furthermore, divine things' (ὁμοίως αἰσθητὰ καὶ νοητὰ καὶ μαθηματικὰ καὶ ἔτι δὴ τὰ θεῖα). Comparison between this tripartite scheme and that outlined by Sextus Empiricus – which posits three realms of being, namely the 'sensible', the 'intelligible' and the 'opinable' – has led to confusion for Dillon, who unnecessarily assumes that the 'divine things' that Theophrastus apparently tacks on to (ἔτι δὴ) his tripartite levels of reality are heavenly bodies, which, one might imagine, should occupy an intermediary position between intelligibles and sensibles.<sup>57</sup> But if we compare these accounts with that of Proclus quoted above, we see that in mentioning the 'divine

<sup>55</sup> On Xenocrates' first principles and the role that Number plays in his metaphysics, see recently Dillon (n. 35), 99–103. An important passage that suggests how Xenocrates might have described Form-Numbers appears in the Aristotelian treatise *On Indivisible Lines*, a title attested for a work of Theophrastus (Diog. Laert. 5.42; see Dillon [n. 2], 113 with n. 69), although we cannot be sure the Peripatetic text in question was his (968a10–14 = F 127 IP): 'Moreover, if there is a Form of Line (ἰδέα γραμμῆς) and the Form is primary among the entities synonymous with it, and if the parts are prior by nature to the whole, the Line Itself (αὐτὴ ἡ γραμμὴ) would be indivisible, and in the same way also the Square, the Triangle, and the other figures, and in general the Plane itself and Body; for the consequence will be that there will be some prior entities in their case also' (tr. Dillon). For the ascription of the theory that the Dyad as the 'Line Itself' (αὐτογραμμὴ) as described elsewhere by Aristotle (*Metaph.* 7.11, 1036b12–15 [= F 105 IP] and 14.3, 1090b20–32 [= F 117–18 IP]) should be attributed to Xenocrates, see Cherniss (n. 10), 567–9 and Isnardi Parente (n. 52), 338–9.

<sup>56</sup> Dillon (n. 2), 181 assumes that Speusippus and Xenocrates are being 'distinguished from "those who postulate the One and the Indefinite Dyad"', but there is no clear evidence in the text that Speusippus and Xenocrates are not being considered under the larger umbrella grouping of those who employ the One and the Indefinite Dyad as first principles. We are better served to read the text with H. Cherniss, 'Some war-time publications concerning Plato', in L. Tarán (ed.), *Harold Cherniss: Selected Papers* (Leiden, 1977), 142–216, at 188 with n. 78, as distinguishing, from among all those who posit the One and the Indefinite Dyad as first principles, two groups: (a) Speusippus and the 'others' who do not give a full account of the derivatives and (b) Xenocrates and Hestiaeus, and Plato, who do provide some sort of account of reduction. Van Raalte (n. 3), 259 and 264, argues that Speusippus is not intended to be included here because he did not posit 'as second principle the indefinite dyad (but posited "multiplicity" (πληθός) instead)'; but this is not persuasive, since it relies on the assumption that Theophrastus followed Aristotle in specifically ascribing multiplicity to Speusippus (cf. Tarán [n. 51], 324–6), which we have already shown to be a problematic assumption, and that Aristotle's version preserves the correct terminology. If anything, it is Aristotle who is more likely to be modifying the original terminology of the Platonists. As Tarán (n. 51), 326 n. 133, himself points out, 'since Xenocrates' system was an attempt to bridge the gap between Plato and Speusippus, it is possible that [Aristotle] indicated that Speusippus' τὸ πληθός was merely a more general term than Indefinite Dyad to designate the material principle'. See Dillon (n. 2), 100–1 for a plausible interpretation that Xenocrates used several terms to describe the second principle depending on the context (and, I might add, the aspect or quality being solicited).

<sup>57</sup> Dillon (n. 2), 181. Merlan (n. 5), 44 misinterprets the point of Theophrastus' text – that Xenocrates is unlike the other Platonists by determining relationships of derivation based on the notion of the divine (καὶ ἔτι δὴ τὰ θεῖα) – in interpreting Theophrastus' text as positing *four* 'spheres of being'. So too Van Raalte (n. 3), 269–70, although she does not cite him. E. Zeller, *Plato and the Older Academy*, tr. S.A. Alleyne and A. Goodwin (London, 1876), 583 n. 11 was closer to the mark when he suggested that τὰ θεῖα, 'only added incidentally by Theophrastus, form no separate class' but 'are found in the three others, so far as they are treated from a theological point of view'. I would speculate, following Zeller, that it is intelligible objects that are most fully divine (and thus called 'divine'), but that mathematical and sensible objects partake of divinity to an extent reversely commensurate with their distance from the supercelestial realm.

things’ Theophrastus is not referring to the heavenly bodies, which would be on the same level as the *daemonic* (and not the *divine*) souls.<sup>58</sup> A diagram comparing these relationships might be appropriate here:

Epistemology (Sextus Empiricus)	Ontology (Theophrastus)	Psychology (Proclus)	Location in Universe <sup>59</sup>	Type of Attachment (ἐπαφή)
Intelligible	Intelligible/Divine Objects	Divine Souls	Supercelestial Realm	Connection (συναφή) ↑
Opinable	Mathematical Objects <sup>60</sup>	Daemonic Souls	Heaven:Stars/ Planets	↓
Sensible	Sensible Objects	Mortal Souls	Sublunary Realm	Assimilation (ἐξομοίωσις)

Such a diagram is potentially obfuscating, in the sense that it draws explicit connections between realms of being that are not expressly analogized in any one given text. It is also the case that we should be careful not to read the ‘Types of Attachment’ as Xenocratean *doctrine*, since we cannot be sure that he employed the very same terms (especially in their nominal form) that Proclus implies. But, if scholars such as Dillon and Merlan are right, Xenocrates represents the first Neoplatonist in the sense that he pursued a doctrinal codification of Plato’s philosophy.<sup>61</sup> The reception of Xenocrates’ philosophy by figures such as Sextus Empiricus also testifies to the antiquity of the Xenocratean ‘realms of being’. Of course, what is of interest to our investigation into ‘connection’ is the intermediary level, called the ‘opinable’ by Sextus and understanding daemonic souls – which might be analogous to the heavenly bodies – as mathematical objects. The status of such mathematical objects is a cause for confusion for modern scholars, but it is comforting to know that such confusion can be traced back to the commentators of Aristotle.<sup>62</sup> The confusion might lie with Xenocrates himself, however. Aristotle, for his part, complained of Xenocrates that his system collapsed eidetic into arithmetical number, effectively eliding out the application of mathematics.<sup>63</sup>

In the absence of a precise understanding of how to parse out the differences between the Formal and mathematical in Xenocrates, we can be confident that he (a) posited at least – but probably not more than – three realms of being and that he (b) conceived of them as being related to one another by means of an intermediary mathematical and ‘opinable’ realm which was in contact with both the superior and inferior realms of being. The nature of Xenocrates’ ‘connection’ was of concern primarily to

<sup>58</sup> It remains not fully clear whether, for Xenocrates, Soul belongs centrally (has a home?) in one of these realms of being, e.g. in the ‘middle’, as Merlan (n. 5), 48 suggests, whether it is able to change places, or whether – in some form – it extends throughout the whole of being, but to various degrees, as plausibly suggested by Zeller (n. 57), 592.

<sup>59</sup> See H. Schibli, ‘Xenocrates’ Daemons and the Irrational Soul’, *CQ* NS 43.1 (1993), 143–67, at 146–7.

<sup>60</sup> Of course, triadic subdivisions that follow the basic order of ‘superior’, ‘intermediary’, and ‘inferior’ include Proclus’ description of the three types of triangles (equilateral, isosceles, and scalene).

<sup>61</sup> Dillon (n. 35), 98 and Merlan (n. 5), 2 and 9.

<sup>62</sup> Cf. Isnardi Parente (n. 52), 341–2.

<sup>63</sup> Arist. *Metaph.* 13.9, 1086a5–10=F 110 IP. See Dillon (n. 35), 108–18 for his illuminating interpretation of Aristotle’s criticism.

Theophrastus and, to a lesser extent, to Aristotle. The testimony of Proclus confirms our suspicions that Theophrastus is referring to Xenocrates when he considers ‘number itself’ as an unmoved mover against Aristotle’s ‘object of desire’. Indeed, in anticipation of his criticism of Aristotle’s principle of impulse (ἡ ἔφεσις), he returns to the problem of ‘imitation’ at Aporia 8, with, I would argue, Xenocrates chiefly in mind:

Also a matter of aporia is how in the world they [rotating bodies], although they have a natural desire, pursue not rest but motion. Why is it, then, that both those who posit the One and those who posit the numbers alike make *that* claim [that is, that rotating bodies pursue motion] along with imitation? For the latter claim that numbers <imitate><sup>64</sup> the One.

(Theophrastus, *Metaphysics*, 5a23–8)

As Ross and Fobes note, the point of comparing Aristotle’s with the Academic explanations of the movements in the universe is that ‘whether we say that the sensible world “desires” or that it “imitates” the first principle, we should expect to find it in that case having the same characteristics as the first principle – not movement but rest’.<sup>65</sup> The challenge Theophrastus poses to the Platonists in particular is to explain how things that seek to be like (that is, to imitate) the first principle, which is at rest, pursue motion in order to achieve that quality. This is an apparent absurdity: how can something that aims to have the quality of being at rest *go into motion* in order to pursue that quality? Implicit here is that the operations of ‘impulse’ and ‘imitation’ are compatible, at least for Theophrastus’ purposes.

Such, indeed, is the problem to which Theophrastus returns when he attempts to define the relationship between the first principles and sensibles in Aporia 16 (*Metaph.* 7b9–8a7). Initially (7b9–23), he proposes to revise the theory by describing ‘actualization’ rather than ‘motion’ as a criterion for first principles, on the grounds that the latter should only be reserved for sensibles, which cannot be prior ontologically. He then shifts the discussion back to the problem of desire and ‘imitation’:

Absurd, too, is the other claim that has been made, that the things that desire what is at rest do not imitate [it]. For why would the [imitation] of the things other [than the first principles] not accompany those [things that desire?]<sup>66</sup> Except that, perhaps, we should not understand

<sup>64</sup> Here I follow W.D. Ross and F.H. Fobes, *Theophrastus: Metaphysics* (Oxford, 1929), 9 and Laks and Most (n. 1), ad loc., in supplementing with the infinitive μιμεῖσθαι. Skemp (n. 41), 218 thought that διώκειν should be supplemented, but see the criticisms of Van Raalte (n. 3), 189, who unfortunately assumes (ibid. 41) that εἶναι has fallen out. She is followed by J. Henrich, *Die Metaphysik Theophrasts: Edition, Kommentar, Interpretation* (Leipzig, 2000), 47 and Dillon (n. 2), 178 with n. 11. But Gutas (n. 1), 284–5 has sufficiently demonstrated that this supplement cannot be entertained especially on stylistic grounds (i.e. it would lead to excessive pleonasm).

<sup>65</sup> Ross and Fobes (n. 64), 44. The anonymous reader for *Classical Quarterly* helpfully notes that the perceived absurdity here is slightly uncharitable if one grants that circular motion is the next best thing to primal stability.

<sup>66</sup> The text is corrupt here, and interminably difficult to make sense of. I follow most closely the text and interpretation of Laks and Most – also followed by Gutas (n. 1), 341–2, with some reservations – by accepting Usener’s conjecture τί γὰρ for the most common manuscript reading εἰ γὰρ (attested in the Arabic translation of Ishāq and, among modern commentators, accepted only by Van Raalte) and in accepting Ross’ emendation to οὐ συνακολουθεῖ (as all modern commentators do) for the more common manuscript reading of οὐσιν ἀκολουθεῖν. The resulting text is τί γὰρ αὐτοῖς [sc. ὀργόμενας] οὐ συνακολουθεῖ ἢ τῶν ἄλλων [sc. μίμησις]. This interpretation has the benefit of allowing Theophrastus to restate, in roughly the same terms, the criticism he had mentioned back in Aporia 8; cf. Henrich (n. 64), 120. On this interpretation, συνακολουθεῖ roughly corresponds to a similar usage of Aristotle in *Metaphysics* M (13.9, 1085a16), where Aristotle complains of the Platonists that they imagine of their first principles that the qualities of broad and narrow are

<the universe><sup>67</sup> in the same way as (1) reducing it to the partless (εις τὸ ἀμερῆς ἄγοντας), but rather [to understand it] as (2) something in concord with itself and well fitted together so far as it can be (ὅτι μάλιστα σύμφωνον ἐνυτῶ ἀπηρτισμένον) – indeed, they claim that 'the entire heaven is most perfect' – as though it were a city or an animal or something else that has parts. (Theophrastus, *Metaphysics*, 7b23–8a7)

The key to understanding this extremely terse passage – and, to my mind, understanding the metaphysics ascribed to Plato and the 'Pythagoreans' in Aporia 24 – is making sense of what imitation has to do with reducing all things 'to the partless' (εις τὸ ἀμερῆς ἄγοντας).

The problem of 'desire' and 'imitation' prompts Theophrastus to juxtapose two claims about the structure of the universe and the relationship between its elements: first (1) the complex claim that (a) things that desire the first principle do so by imitating it, and (b) such an activity of imitation is a type of reduction to 'the partless'; and second (2) that the universe is not an indivisible unity but rather a well-fitted (ἀπηρτισμένον) harmony of its disparate parts, like a city or a human being. Note that 'desire' and 'imitation' play no explicit role in the characterization of the second (2) claim; moreover, it would not be easy to make sense of how 'desire' and 'imitation' factor in harmonization of, for example, body parts.

What positions is Theophrastus contrasting here? One scholar<sup>68</sup> makes sense of the argument by suggesting that if imitation follows desire universally, the consequence would be a universe fully undifferentiated and, what is more, fully without motion. This creates a contradiction, since the Platonists who hold that the things that imitate the One (cf. Aporia 8, discussed above) are in motion in order to do so. Thus claim

'associated' (συνακολουθοῦσι) with long and short, respectively. Van Raalte (n. 3), 352 with n. 2 rejects this interpretation on the grounds that 'οὐ συνακολουθεῖ apparently corresponds to οὐ μιμούνηται', but her rejection is far from decisive, despite the persuasive suggestion that there is attested a relationship (unfortunately not defined by Van Raalte) between 'imitation' and 'accompaniment' in Plato's writings (cf. *Plt.* 273e11–274a3, cited by Van Raalte). It might be objected, however, that earlier, at 7a1–6, Theophrastus has used συνακολουθεῖν and μιμεῖσθαι roughly analogously when he compares how the sciences that come after the first principles, such as grammar, music and mathematics, 'accompany' them and how the crafts 'imitate' nature. But it is also likely that Theophrastus, in appropriating the language of his sources (especially the Platonists), sometimes employs their language outside of their Platonist context and for the sake of the diction of his own philosophical argumentation, e.g. at 6a27 where, in discussing the first principles of the Platonists, he criticizes them for only 'touching on' (ἐφαπτόμενοι) the topic of the heavens. In this instance, I would argue, Theophrastus is transferring the language of Plato and the Platonists from their original context (e.g. discussions of relationships between various entities in the chain of being) to a different context, i.e. to the context of his own interpretation of the success or failure of their ideas as philosophy.

<sup>67</sup> I've supplemented 'the universe' for the sake of clarifying the argument. The grammar of this passage offers no obvious help, which could be a consequence of Theophrastus' characteristic brevity or, as Van Raalte (n. 3), 350–2 has suggested, a textual problem, marked by a loss of apodosis from the previous condition. One option would be to assume, as Van Raalte does (ibid. 353), that something like 'all things' (ἅπαντα), in synecdoche for 'the Universe', is intended (cf. a similar description at 11b9: πάντ' εἰς τὸ ἄριστον ἄγειν). This interpretation, also advocated by Ross and Fobes (n. 64), 21 ('reducing the universe') is in contrast to the interpretations of Laks and Most (n. 1), 12 ('l'on rapportait [l'argument] à ce qui est dépourvu de parties'), Gutas (n. 1), 135 ('one should not conceive [of these things] in the same way as if he were reducing to something without parts') and Henrich (n. 64), 59 ('daß man vielleicht nicht [alles] auf diese Weise aufzufassen hat, als ob man sie auf etwas Ungeteiltes hinführt'). Another intratextual point of comparison would be the description of Plato's reduction to first principles (ἀνάγειν εἰς τὰς ἀρχάς) earlier at 6b11–15, where Theophrastus described Plato as reducing the things 'other than' (τῶν ἄλλων) the first principles. The general sense is rather clear, I think: Theophrastus is referring to all things that are other than 'the partless'.

<sup>68</sup> Gutas (n. 1), 342.

(2), which postulates a universe with parts that are differentiated but work in harmony with one another, is being solicited to answer the objections to claim (1). But the question of what claims are being contrasted here might be further enlightened if we can figure out who the authorities behind claims (1) and (2) are.

Van Raalte has implied that Aristotle is behind the claim (1) that things which desire and imitate the first principle do so by reduction to 'the partless' (τὸ ἀμερές). This would make good sense if there were any clear evidence in Aristotle's corpus that desiderative imitation were the vehicle for imperishable sensibles – especially the heavenly bodies – to reduce to the unmoved mover, which indeed is described as 'partless' twice in Aristotle's texts (*Metaph.* 7.7, 1073a6 and *Phys.* 8.10, 267b27). But the evidence she cites from Aristotle's texts for ascription to imitation of the 'partless' in reduction is circumstantial and exhibits Platonic qualities,<sup>69</sup> and internal comparanda from Theophrastus' *Metaphysics* associate both imitation and reduction centrally with Plato and the 'Pythagoreans'.<sup>70</sup> On the other hand, it is perhaps more likely that a Platonist is the object of Theophrastus' criticism of the proposal that imitation of the first principle is a type of reduction to 'the partless'.<sup>71</sup> Now none of the fragments of the Platonists of the Early Academy Speusippus, Philip of Opus, Hermodorus and Hestiaeus claims that the first principle is 'partless'.<sup>72</sup> This fact alone makes it unlikely that any of these Platonists are the intended target of Theophrastus' objection. But we know of one Platonist who did indeed posit a 'partless' first principle, namely Xenocrates of Chalcedon. The relevant source for much of this information is the Peripatetic treatise *On Indivisible Lines*, which, it has been suggested, might be attributed to Theophrastus himself.<sup>73</sup> There, the author first presents a summary of five arguments attributed to someone who posits a 'Form of Line' (ἰδέα γραμμῆς), the first of which constitutes a proof that a certain 'partless' unit is prior to all other mathematical objects:

<sup>69</sup> Van Raalte (n. 3), 351–3 adduces two pieces of evidence that, she thinks, demonstrate for Aristotle a relationship of 'imitation' between the 'objects that desire' and the 'first principles' here: *Metaph.* 9.8, 1050b28 ('Imperishables also are resembled by things undergoing change, such as earth and fire; for the latter are always active, since they are independent and have motion in themselves') and *Met.* 1.9, 346b35–347a8 ('This cycle of changes imitates the cycle of the sun: for the moisture rises and falls as the sun moves in the ecliptic'). The latter evidence simply does not refer to first principles at all and can be dismissed. The former is more interesting, however, and warrants further investigation. It is true that Aristotle ascribes to a theory of 'imitation', especially, from simple bodies to the 'cause' (cf. *Gen. corr.* 2.10, 337a1–17), but in all passages cited we should note that he never describes these relationships as desiderative. That is, elements such as 'fire' and 'earth' are not spoken of in these passages as 'desiring' to adopt the particular attributes of the prime mover. Moreover, in the description of how the simple bodies reduce to the prime mover in *On Generation and Corruption*, there is no attempt to describe them as imitating the 'partlessness' of the cause. My hunch is that these passages of Aristotle exhibit the affection he sometimes shows for Platonic theories of reduction (esp. those related to the *Timaeus*), which he aims to modify in part by emphasizing the distinction between potentiality and actualization, but that Aristotle does not throw out the baby with the bathwater.

<sup>70</sup> Esp. Theophr. *Metaph.* 11a27–b12.

<sup>71</sup> For comparison, see Dillon's discussion of Theophrastus' critique of the unmoved mover in *Aporiae* 6–12 (Theophr. *Metaph.* 5a14–6a14) as a refutation chiefly of Platonist positions.

<sup>72</sup> It should be noted that it is possible that Speusippus is intended here. If the fragment quoted by Ps.-Iamblichus in the *Theologoumena Arithmeticae* (pp. 82.10–85.23 = F 28 Tarán) is indeed verbatim, Speusippus believed that magnitudes assimilated themselves (l. 55 εὐοικένας; l. 58 ὁμοιοῦτο) to numbers. But Damascius (*De principiis* 1.2.25–3.2 = F 49a Tarán), in attempting to argue that the first One is absolutely ἀμερές, contrasts his own position with that of Speusippus, who (Damascius suggests) conceived of the One as ἐλάχιστον.

<sup>73</sup> M. Timpanaro Cardini, *Pseudo-Aristotele: De lineis insecabilibus* (Milan, 1970), 38 with n. 53.

If 'much' and 'big', and their opposites 'few' and 'little', are similarly constituted, and if it is 'much' that has *nearly* infinite divisions, and not 'few', it is evident that 'few' and 'little' will have a finite number of divisions; if, then, the divisions are finite, there must be a partless magnitude, with the result that in all magnitudes there will be some partless thing (τι ἀμερέζ), since in all of them there is a 'few' and a 'little'.

(*On Indivisible Lines*, 968a1–9)

The argument, which is meant as a response to one of Zeno's paradoxes that stipulated 'if things are many, they must be both small and large: so small as not to have magnitude, but so large as to be infinite' (DK 29B1), operates on the assumption that the arithmetical (that is, of a discrete quantity) terms 'much' and 'few', as well as the geometrical (that is, of a continuous quantity) terms 'big' and 'little', are opposites. The argument runs something like this:

- (i) If we accept that these pairs of terms are oppositional, then the characteristics of the 'much' and the 'big' must be opposite to the characteristics of the 'few' and the 'little';
- (ii) The 'much' and 'big' admit of a nearly infinite number of divisions, and not 'few';
- (iii) Therefore, 'few' and 'little' must admit of the opposite, namely, a finite number of divisions;
- (iv) If the number of divisions for the 'few' and 'little' is finite, then there must be a minimum-sized (most 'small') magnitude that is the most finite (most 'few');
- (v) If a thing is minimum-sized and of the most finite quality, it must have no parts;
- (vi) Therefore, there is a certain minimum-sized thing that has no parts (τι ἀμερέζ).

Now given that Xenocrates assumes the existence of a thing totally partless, one would want to understand its relationship to things, for example, constituted of parts or, moreover, to wholes. Perhaps surprisingly for a Platonist, Xenocrates appears to believe that *parts are prior (ontologically) to the whole*, on the grounds that whenever a part is taken away from a whole, the whole is destroyed, whereas when a whole is destroyed, the part is not necessarily destroyed thereby.<sup>74</sup> From this alone, it becomes likely that, just as things constituted of parts are prior to wholes, so too what is partless is prior to things constituted of parts. Indeed, the universal theory of Xenocratean reduction to the partless described here also applies to the Form-Line as well as geometrical shapes constructed out of the Form-Line, such as squares, triangles and planes, which are constitutive of elemental bodies that have volume.<sup>75</sup> Furthermore, as the author of *On Indivisible Lines* attests explicitly, Xenocrates believed that, by virtue of the priority of the part over the whole, the 'partless thing' (τι ἀμερέζ) exists not only in the intelligible realm (with Form-Lines) but also the sensible realm, where the elemental bodies, such as fire, can be perceived:

Moreover, if there are elements of a body, and nothing is prior to the elements, and if parts are prior to the whole, then fire and, generally speaking, each of the elements of the body would be indivisible, with the result that some partless thing exists not only among the intelligibles, but

<sup>74</sup> Alex. Aphr. *In Arist. De princ. doctr.* pp. 281–2 Badawi = F 121 IP. This fragment is quoted verbatim by Alexander of Aphrodisias and survives in a translation into Arabic by Al-Dimashqī in the tenth century C.E.

<sup>75</sup> Cf. [Arist.] *Lin. Ins.* 968a10–14. In this sense, Xenocrates follows Plato in the *Timaeus* (53c4ff.) in positing rectilinear planes as the mathematical objects to which fire and other elemental bodies can be reduced. That these arguments are chiefly 'logico-dialectical' and relate especially to ontological stratification has been argued by L. Gemelli Marciano, *Democrito e l'Accademia* (Berlin, 2007), 191–3.

also among the sensibles.

(*On Indivisible Lines*, 968a15–18)

So much makes sense enough for Xenocrates' philosophy, even if a complete account of Xenocratean ontology and the role of mathematics in it cannot be undertaken here.<sup>76</sup> Serious questions, however, accompany Theophrastus' comparison of Xenocrates' operation of reduction to a 'partless thing' with 'imitation'.<sup>77</sup> Of utmost importance for our study of Aporia 24 is how, in Aporia 16, Theophrastus is distinguishing Xenocrates' position (1) – in which all things can be reduced to a 'partless' thing – from that which he apparently prefers, namely the position of those who (2) 'claim that the entire heaven is most perfect' (ὁ ὅλος οὐρανός ... φασιν εἶναι τελεώτατον) and posit a universe that is 'in concord with itself and well fitted together so far as it can be' (ὅτι μάλιστα σύμφωνον ἑαυτῷ ὀπηρτισμένον), like a city or an animal or something else that has parts (8a3–7). Who might the figures who espouse claim (2) be?

The description of the universe (2) as 'in concord with itself' carries with it Pythagorean and Platonic overtones, in the sense that it associates the cosmos with music. At first glance, we might imagine that Theophrastus is referring to the popular description of the design of the sensible World-Soul by the Demiurge in the *Timaeus* (35a1–36d7), which emphasizes the mixture (συνεκεράσαστο) of the indivisible (ἄμεριστος) reality that is eternally existent and the divisible (μεριστή) into a combined 'type' (εἶδος) by 'fitting together' (συναρμόττων) these contrary qualities in accordance with musical intervals.<sup>78</sup> The likelihood of this being a reference to Plato is strengthened by the description of the 'entire heaven' as 'most perfect', a phrase that echoes the last line of the *Timaeus*.<sup>79</sup> It is certainly possible that Theophrastus is referring to Plato as the authority behind this claim. But there are problems with this hypothesis. Theophrastus is contrasting one position, namely that (1) of Xenocrates, which emphasizes the reduction of the universe, with a theory (2) which emphasizes the divisibility of the universe into disparate parts that, when taken together, create a 'concord'. Plato here is not describing the reconstruction through a type of combination, but rather the opposite, the separation and ordering of parts of the universe. Moreover, the use of the terms 'concord' and 'fitting together' does not signal uniquely Platonic ideas about the structure of the cosmos.

The terms 'concord' and 'fitting together' and their cognates do not appear together anywhere else in Greek philosophy, but 'fitting together' does appear alongside 'perfect' in the contexts of music and epistemology in a fragment of Speusippus (Sext. Emp. *Math.* 8.145–6 = F 75 Tarán).<sup>80</sup> Still, Speusippus' text offers no close thematic

<sup>76</sup> A fuller account would have to answer (a) what sorts of things are partless (across the realms of being), (b) why they are partless and (c) what sorts of objects are clearly 'intermediary' in this schema, a project that might want to take into account the testimonies especially of Alexander of Aphrodisias (*apud* Simpl. *in Phys.* p. 138.10ff. Diels = F 138 IP), Porphyry (*ap. Simpl. in Phys.* p. 140.6ff. Diels = F 139 IP) and Themistius (*Paraphr. in Arist. De an.* p. 11.19ff. Heinze = F 260 IP). For one courageous attempt to make sense of this, see Zeller (n. 57), 587–8 with n. 22.

<sup>77</sup> Also see Themistius' description of Xenocrates' ontology (*Paraphr. in Arist. De an.* p. 11.19ff. Heinze = F 260 IP), in which he quotes Xenocrates directly from a work entitled *On Nature* as saying 'all things resemble Number' (ἄριθμῶ δὲ πάντ' ἐπέοικε) in the context of providing a derivational account of Xenocrates' metaphysics.

<sup>78</sup> For a useful description of the music theory behind the Demiurge's design, see A. Barker, *The Science of Harmonics in Classical Greece* (Cambridge, 2007), 318–23.

<sup>79</sup> Cf. Pl. *Ti.* 92c7–9: μέγιστος καὶ ἄριστος κάλλιστός τε καὶ τελεώτατος γέγονεν εἰς οὐρανὸς ὅδε μονογενῆς ὄν.

<sup>80</sup> I will quote the fragment *in toto* in order to allow the reader to understand the larger context (tr.

or argumentative comparandum here other than in vocabulary. Aristotle indeed does use the term 'fitting together' in mathematical contexts, but he cannot be assumed to have advocated a universe organized according to the principles of 'concord'.<sup>81</sup> None of the other Platonists, to our knowledge, imagined that the universe was constituted of parts in 'concord'.

Rather, the cosmological and ontological position (2) being contrasted with Xenocrates' reduction to the 'partless thing' (1) in *Aporia* 16, I would suggest, is that of Philolaus of Croton and/or other Pythagoreans. Evidence that the Pythagoreans were interested in the relationships between the motions of music and the motions of the heavenly bodies comes as early as Plato's *Republic* Book 7 (530d8–531c4), where Socrates criticizes the 'Pythagoreans' who, like the 'astronomers', 'pursue numbers in ... audible consonances' for 'not ascend[ing] to the problems, that is, to examine which numbers are concordant and which are not, and the reasons for each'. This is a veiled but certain criticism of Archytas of Tarentum, and possibly his predecessors, who apparently investigated the properties of sound by analysis of string length.<sup>82</sup> Er's description of the Spindle of Necessity in *Republic* Book 10 (617a4–b7) illustrates eight Sirens placed at the top of eight cosmic circles, each singing a sustained note of variegated tone as the cosmic circles turn: 'a single concord was harmonized (μίαν ἁρμονίαν συμφωνεῖν) from the eight beings'. This cosmological description, to be sure, does not clearly reflect Archytan cosmology, musicology or astronomy,<sup>83</sup> but most scholars have justly taken it to be generally Pythagorean in the light of Aristotle's ascription to some 'Pythagoreans' of a similar theory (*On the Heavens* 2.9, 290b12–291a10). There, Aristotle explicitly refers to the Pythagorean 'concord of moving bodies' (συμφωνίαν τῶν φερομένων) in reference to the theory that the speed of the moving bodies, based on the distances of the bodies from the centre, conforms to ratios of musical consonances.<sup>84</sup> Huffman's work on Pythagorean astronomy

after Dillon): 'Speusippus' view was that, since there are things which are sensible and others which are intelligible, of those that are intelligible the criterion is cognitive reason, while of the sensible things it is cognitive sense-perception. And cognitive sense-perception he conceived to be that which participates in the truth which accords with reason (ἡ μεταλαμβάνουσα τῆς κατὰ τὸν λόγον ἀληθείας). To take an example: the fingers of a flute-player or harper possess an artistic activity (τεχνικὴ ἐνέργεια) which is, however, not brought to fruition primarily (προηγουμένως τελειομένη) through the fingers themselves, but is fully developed (ἀπαρτιζομένη) as a result of training under the co-operative guidance of reasoning; and the sense-perception of the musician, while it possesses an activity capable of grasping the harmonious and the non-harmonious, nevertheless is not self-produced but is acquired by reason. Even so, cognitive sense-perception naturally derives from reason the cognitive experience which it shares, and which leads to unerring discrimination of its proper objects.'

<sup>81</sup> Van Raalte (n. 3), 354 adduces the Pseudo-Aristotelian *On the Cosmos* (396b7–11) as evidence for cosmic 'concordance' in Aristotelian writing, but does not explicitly argue that the claim under investigation (2) thereby refers to Aristotle's ideas. Mariska Leunissen reminds me that Aristotle does indeed analogize the universe to an army or a household (*Metaph.* 12.10, 1075a11–25). But there Aristotle emphasizes the 'order' (τάξις) of these groupings and does not explicitly broach the subject of the 'fitting together' of parts or ascribe this to any theory of musical harmonization. On these types of analogies in Aristotle's writing, see Van Raalte (n. 3), 354–6.

<sup>82</sup> Archytas F 1 Huffman (Porph. in *Harm.* 1.3). On the topic of Plato's criticism of Archytas in this passage, see especially C.A. Huffman, *Archytas of Tarentum: Pythagorean, Philosopher and Mathematician King* (Cambridge, 2005), 63–5.

<sup>83</sup> Cf. Barker (n. 78), 316 with n. 14.

<sup>84</sup> Cf. Alexander of Aphrodisias' report, likely culled from Aristotle's works on the Pythagoreans (F 203 Rose = in *Metaph.* 38.20), which discusses how the motions of the bodies lead the Pythagoreans to assume that ten is the 'perfect number' (τέλειος ἀριθμός).

has concluded, with very little doubt, that this and other passages that refer to the Pythagoreans in Aristotle's writings are chiefly concerned with the cosmology of Philolaus of Croton.<sup>85</sup>

The ascription of a theory that the universe has 'parts' like a 'city or an animal' can also be traced to the Pythagoreans more generally, and there may be good reason to see this as a reference specifically to Philolaus of Croton. The Doric Pseudo-Pythagorica preserve 'Pythagorean' traditions that both analogize 'god' with the 'king' and 'city state' and do so according to the coextensive operations (in Theophrastus' mind) of 'imitation' and reduction.<sup>86</sup> Unfortunately, we cannot be sure when or by whom these texts were composed. Their employment as evidence can only be circumstantial and might refer to traditions of Pythagoreanism, but not necessarily with unmediated reference to genuine writings of fifth- and fourth-century B.C.E. Pythagoreans like Philolaus of Croton or Archytas of Tarentum. Still, a remarkable fragment (F 17 Huffman = Stob. *Ecl.* 1.15.7) said to come from Philolaus' *Bacchae* and considered genuine by Huffman asserts that the 'cosmos is one' (ὁ κόσμος εἶς), that it grew 'from the middle' (ἀπὸ τοῦ μέσου) both upwards and downwards and that the 'parts' (μέρη) at the upper and lower extremities are similar. This in itself is not convincing evidence for the analogizing of the cosmos to the city state or to the body in Philolaus' thought. But a recent study by Huffman (see n. 87) has demonstrated the relationships of macrocosm to microcosm in Philolaus' overall philosophy by highlighting the analogies between cosmogony and anthropogony, specifically in his description of the birth of an infant (T A 27 Huffman = Meno Anonymi Londinensis 18.8). The central entity responsible for the symmetry that occurs following the birth of the infant as well as the birth of the cosmos is harmony (ἁρμονία), the ultimate 'fitting together' (συναρμόθη) of limiting and unlimited entities (cf. F 1 Huffman = Diog. Laert. 8.85).<sup>87</sup> While Philolaus' fragments do not explicitly elicit the city state in this chain of analogies, it is not beyond imagination that he would have considered such relationships tenable.<sup>88</sup>

The most likely point of reference for Theophrastus' claim that some people (2) see the universe as 'something in concord with itself and well fitted together so far as it can be (ὅτι μάλιστα σύμφωνον ἑαυτῷ ἀπηρτισμένον) as though it were a city or an animal or something else that has parts', then, would be those people called 'Pythagoreans' by Aristotle in *On the Heavens*, and very likely Philolaus of Croton himself.

If this speculative argument holds water, then we are presented with a problem in our understanding of 'imitation' as a modality of reduction to the first principles of Plato and the 'Pythagoreans' in Theophrastus' *Metaphysics*. In this text, there is no evidence that corroborates Aristotle's enigmatic claim that 'imitation' is a uniquely 'Pythagorean' metaphysical operation outside of Aporia 24. Instead, throughout the rest of

<sup>85</sup> Huffman (n. 9), 240–61 and 279–83.

<sup>86</sup> Cf. the texts entitled *On Kingship* attributed by Stobaeus to Diotogenes and Ephantus (ed. Thesleff p. 72.15–23 and pp. 81.21–82.6). Explicit descriptions of analogy according to 'imitation' or 'likeness' are ubiquitous, and it is especially interesting to see 'Diotogenes' echo Theophrastus in claiming δεῖ ... τὸ ἀρίστον ὑπὸ τῷ ἀρίστῳ τιμᾶσθαι καὶ τὸ ἀγεμονοῦν ὑπὸ τῷ ἀγεμονέοντος.

<sup>87</sup> Cf. Huffman (n. 9), 54–77 and, more recently, 'Philolaus and the central fire', in S. Stern-Gillet and K. Corrigan (edd.), *Reading Ancient Texts, Volume I: Presocratics and Plato, Essays in Honour of Denis O'Brien* (Leiden, 2007), 57–94, at 86–9.

<sup>88</sup> The only fragment that remains of Philolaus that pays any heed to political organization does so in the form of an analogy between mathematics and colonial rule (T A7a = Plut. *Quaest. conv.* 718e): 'Geometry [is] the origin and mother-city of the other sciences' (γεωμετρία ... ἀρχὴ καὶ μητρόπολις οὐσα τῶν ἄλλων [μαθημάτων]).

Theophrastus' *Metaphysics*, 'imitation' is associated chiefly with reduction to the first principles in Plato's and Xenocrates' ontology. And in Aporia 16, the position of Xenocrates (1), which associates 'imitation' with the reduction to the 'partless thing' (τι ἀμερές), is contrasted with a genuinely Pythagorean position – that of Philolaus of Croton and demonstrated in his fragments (2) – which also corresponds directly with accounts of 'Pythagorean' astronomy and ontology in Aristotle's fragments on the Pythagoreans as well as in the Corpus. The metaphysical position (2) contrasted with that of Xenocrates, that of (what Aristotle calls) the Pythagoreans, makes no reference to reduction by appeal to 'imitation' as a vehicle.

So we are faced with another difficult interpretive question: when Theophrastus refers to the 'Pythagoreans' as espousing reduction to the first principles by means of 'imitation' in Aporia 24, is he actually referring to the thought of the genuine Pythagoreans whose writings survive (like Philolaus or Archytas), or is he referring to the thought of a Platonist such as Xenocrates or Speusippus?

The evidence presented above suggests that in the ascription of a theory of 'imitation' as a vehicle for reduction to the 'Pythagoreans', the point of reference is a Platonist, likely to be Xenocrates of Chalcedon, whose philosophy is associated with that of Plato in Theophrastus' surviving writings, including the doxography that ultimately traces back to Theophrastus.<sup>89</sup> It is well known that Xenocrates (apparently following Plato)<sup>90</sup> was deeply interested in the specific relationship between the One and the Indefinite Dyad and, moreover, that the latter may have played a significant role in the determination of subordinate ontological entities in his metaphysics.<sup>91</sup> Just as Theophrastus attests for Plato and the 'Pythagoreans' in Aporia 24, for Xenocrates the Indefinite Dyad was the principle of inequality, which made it possible for numbers to be generated.<sup>92</sup> This may have been the position of Speusippus too, although there are reasons to doubt that anything in Aporia 24 can be traced back specifically to him. First of all, Speusippus is likely to have preferred the term 'multiplicity' (πληθος) over 'Indefinite Dyad' (ἡ ἀόριστος δυάς), which is associated strongly with Plato and especially with Xenocrates.<sup>93</sup> Moreover, Xenocrates is considered to have attempted

<sup>89</sup> e.g. Aët. *Plac.* 1.7.30 = F 213 IP; 4.5 = F 205 IP.

<sup>90</sup> Aristotle's criticism of the Platonic Forms in *On Ideas* challenges arguments put forward by Xenocrates in particular. See e.g. Arist. *De ideis* 22.16ff. Harlfinger (Alex. Aphr. *In Arist. Metaph.* 79.15ff. Hayduck) = F 92 IP, with comments by Isnardi Parente (n. 52), 321–5.

<sup>91</sup> See especially Dillon (n. 35), 99–107.

<sup>92</sup> On the emphasis on 'inequality' in the metaphysics of Plato, Speusippus and Xenocrates, see the useful summary of positions by Isnardi Parente (n. 52), 330–3. What is notable about the idea that the Indefinite Dyad could play so important a role in the generation of other entities in Aporia 24 of Theophrastus is the relationship between this statement and a fragment attributed to Speusippus by Proclus (in William of Moerbeke's translation of that text into Latin) which claims that, for Speusippus, 'the Indefinite Dyad is the principle of entities' (*interminabilem dualitatem entium principium induxerunt*). For Burkert (n. 3), 63, and others who follow him, this is evidence for the correlative ideas that (a) Speusippus posited the 'Indefinite Dyad' as the material principle and (b) that it is the principle of entities, a phrase, I might add, reiterated in Aporia 24 (οὐχ οἶον τε ἀνευ ταύτης τὴν τοῦ ὅλου φύσιν). But Tarán's objection (n. 51), 350–6 with 224–6, that the text itself might be tainted especially with the Neopythagoreanism of Nicomachus, has not been sufficiently addressed. Also see L. Zhmud, *Pythagoras and the Early Pythagoreans*, tr. K. Windle and R. Ireland (Oxford, 2012), 424–5.

<sup>93</sup> Cf. Tarán (n. 51), 224–6, following Cherniss (n. 10), 87–8. The association of the term 'Indefinite Dyad' specifically with Xenocrates occurs in the important description of his metaphysics in Plutarch's *On the Generation of the Soul in Plato's Timaeus* (1012d ff. = F 199 IP), which I will provide *in toto* because of its value for our study (tr. after Cherniss): 'The former [i.e. the followers of Xenocrates] believe that nothing but the generation of number is signified by the mixture of the

to save Plato's Forms as well as the language of the Forms by appeal to Form-Numbers, which are implicitly suggested by the language of Aporia 24. Finally, one would be required to explain why Theophrastus contrasts the opinions of Plato and the 'Pythagoreans' in Aporia 24 with those of Speusippus in the preceding paragraph, only two sentences earlier.<sup>94</sup> He had also done so much earlier, in Aporia 13 (*Metaph.* 6a23–b22), where the theories of reduction to first principles of Xenocrates, Hestiaeus and Plato are contrasted with the metaphysics of Speusippus. If he wanted to refer to Speusippus when describing the theory of reduction to first principles via 'imitation', why wouldn't he just have said 'Speusippus' in this circumstance, instead of referring to Plato and the 'Pythagoreans'?<sup>95</sup>

There is one other figure from the Early Academy whose philosophy shows intriguing correspondences with that ascribed to Plato and the 'Pythagoreans' in Aporia 24 of Theophrastus' *Metaphysics*, and whom we should take very seriously as a possible referent for the claims made in this passage: Hermodorus of Syracuse. Little is known about this figure, but one surviving fragment (quoted by Dercylides in Book 11 of his *On the Philosophy of Plato*) testifies to a fully realized theory of derivation from the first principles:<sup>96</sup>

All the things considered to be great in relation to the small possess the More-and-the-Less; for it is more possible (?) that the More-and-the-Less is brought to the unlimited ... those which are described as equal and stable and harmonized do not possess the More-and-the-Less, whereas their opposites do possess [it]. For it is possible for something to be more unequal than another unequal thing, and for something to be more activated than another activated thing, and for something to be more unharmonized than another unharmonized thing, with the result that – of each of these pairs – all except the element One are susceptible to the More-and-the-Less. The result is that such a thing may be said to be unstable and shapeless and unlimited and non-existent, by virtue of the negation of existence (ἄστατον καὶ ἄμορφον καὶ ἄπειρον καὶ οὐκ ὄν τὸ τοιοῦτον λέγεσθαι κατὰ ἀπόφασιν τοῦ ὄντος). To such a thing, neither origin (ἀρχή) nor existence (οὐσία) is befitting, but it is brought into a certain indeterminacy (ἐν ἀκρίσεια). For [Hermodorus] shows that in the same way that what creates is the cause in a strict and distinct sense, so too it is an origin (ἀρχή), but matter (ὑλη) is not an origin (ἀρχή). Thus it used to be said also by the followers of Plato that there is [only] one origin.

(Simplicius, *On the Physics of Aristotle*, p. 247.30ff. Diels = Hermodorus F 7 Isnardi Parente)

indivisible and the divisible being (τῆ μίξει τῆς ἀμερίστου καὶ μερίστης οὐσίας), the One being divisible and Multiplicity divisible and number being the product of these when the One bounds Multiplicity and imposes a limit on infinity (τοῦ ἐνὸς ὀρίζοντος τὸ πλῆθος καὶ τῆ ἀπειρία πέρας ἐντιθέντος), which they call Indefinite Dyad too ... but they believe that number is not yet soul, for it lacks motivity and mobility, but that after the commingling of sameness and difference, the latter of which is the principle of motion and change while the former is that of rest, then the product is soul, soul being a faculty of bringing to a stop and being at rest no less than of being in motion and setting in motion.' Note that, for Plutarch, the standard Platonist term is 'multiplicity' and it is Xenocrates who is credited with calling it the 'Indefinite Dyad'.

<sup>94</sup> See also Henrich (n. 64), 325–6 who in analysing the passage suggests that what Theophrastus is implicitly contrasting here is the Speusippian idea that the material principle is 'evil' and the Platonic and 'Pythagorean' idea that it is simply 'shapeless'.

<sup>95</sup> Cf. Laks and Most (n. 1), 86. One objection that could be raised here would be to say that Aporia 24 does not follow on the passage at Aporia 23 (11a18–26) and was simply inserted there by some later editor. But one would then need to account for Theophrastus' claim that 'reality, then, is just as good as it happens to be' (τὰ μὲν οὖν ὄντα καλῶς ἔτυχεν ὄντα), which ties the preceding criticism of Speusippus and the subsequent criticism of Plato and the 'Pythagoreans' together argumentatively.

<sup>96</sup> For two recent general treatments of Hermodorus, see P.S. Horky, 'Persian cosmos and Greek philosophy: Plato's associates and the Zoroastrian *magoi*', *OSAPh* 37 (Winter 2009), 47–103, at 84–91 and Dillon (n. 35), 198–204.

We might note the similarities between the ontological systems attributed to Plato and the 'Pythagoreans' and to Hermodorus: both assume two principles and focus especially on the ways in which substratum entities adopt the aspects of their first principles. Moreover, both focus on the ways in which the material principle bestows its qualities on its derivatives, especially the absence of shape (*ἄμορφον*; recall Theophrastus' *Metaphysics* 11b4–5: *ἀμορφία καθ' αὐτήν*). In this sense, Hermodorus might be seen to fill in some of the holes that Theophrastus leaves open in his discussion of derivation from the material principle in Aporia 24. But there are two major problems with the hypothesis that Hermodorus is the source of the claims made in Aporia 24: he never (so far as we know) refers to the material principle as the 'Indefinite Dyad', but rather calls it the 'More-and-the-Less'; and, in the case of Hermodorus, derivation from the material principle is established in order to prove that there is only one first principle (*ἀρχή*), namely the One, and that the 'More-and-the-Less' is indeed not a first principle. This squarely contradicts Theophrastus' attribution to Plato and the 'Pythagoreans' of two first principles, and while it could be very easy to confuse many things in Platonist ontologies, the number of first principles is likely not to be one of them.

#### IV. CONCLUSIONS

The evidence collected and analysed here suggests that the information relating to Plato and the 'Pythagoreans' in Aporia 24 of Theophrastus' *Metaphysics* is to be considered most likely derived from the writings of Xenocrates of Chalcedon. In the course of our study, we have traced the ways in which Platonist philosophy more generally, and the ontology of Xenocrates more specifically, are subjects whose ideas are worth examining constantly throughout Theophrastus' aporetic treatise. Several unexpected discoveries occurred in the process of investigating the theory of 'imitation' as vehicle for reduction to the first principles: Xenocrates, we have discovered, posited an ontological system that understood various modalities of ascending (from inferior to superior) and descending (from superior to inferior) 'attachment' between entities in the universe; the former is considered something like upwards 'assimilation' (*ἐξομοίωσις*) and the latter something like downwards 'connection' (*συνάφῃ*) by Xenocrates. Xenocratean reduction, which is something like 'assimilation', is formulated by Theophrastus as a type of 'imitation' of the first principles, and the ultimate form of reduction via imitation is to a 'partless' minimum (*τι ἄμερές*), which is equated with the Form-Line and is said to reside (as a quality) 'in' mathematical objects that are located in both the intelligible and sensible realms. The Form-Line, which is 'partless', is prior to any of its derivatives (planes, solids, etc.) on the ground that a whole cannot preserve its identity if a part of it is destroyed, but a part can preserve its identity even when the whole of which it is a part is destroyed. Theophrastus contrasts this theory of reduction to the 'partless' with the Philolaic (and thus Pythagorean) conceptualization of the universe as a divisible unity that is 'in concord with itself and well fitted together'.

The results of this study compel us to consider two theories regarding the historical relationship between the philosophical systems of the mathematicizing Platonists (such as Xenocrates) and of the genuine Pythagoreans. First, the evidence as presented allows us to raise further inquiries regarding the characterization of the metaphysics of Plato and the 'Pythagoreans' in Theophrastus' *Metaphysics*. There is a strong possibility that the information concerning the 'Pythagoreans' was derived from one of

Xenocrates' writings on the Pythagoreans, the *Pythagoreia*, or was perhaps in his writings on mathematics; it is also possible, in light of the close connections established between Plato and the Pythagoreans by the Platonists, that this information might have come from Xenocrates' discussion of the first principles of Plato's philosophy in his works on metaphysics.<sup>97</sup> A confusion of Platonic and 'Pythagorean' would certainly be understandable if Xenocrates were the primary source for Theophrastus' conceptualization of 'Pythagorean' doctrine. Second, the observation that Xenocrates is really the source for Theophrastus' information regarding the 'Pythagoreans' – and not Aristotle alone – raises further questions for our understanding of Aristotle's summary of the philosophical systems of Plato and the 'Pythagoreans' in *Metaphysics A*: is it the case that both Aristotle and Theophrastus were deriving their knowledge of 'Pythagorean' metaphysics from the same work of Xenocrates but interpreting basic operations (such as 'imitation' or 'connection') in different ways? Or might we speculate that, given the considerable amount of difference in focus between Aristotle's and Theophrastus' accounts of the philosophy of the 'Pythagoreans', that they were responding to different sources?

With regard to the theme of the work under examination, our study has concluded aporetically; but one of the important consequences is that we can better discern how Xenocrates' discussion of Plato and the 'Pythagoreans' played a significant role in the determination of Platonism and Pythagoreanism as philosophical systems associated with one another in the Early Academy. As Plato's students went on to adapt the central tenets of his metaphysics – especially the suggestive corollaries between 'participation' and 'imitation' of sensibles in intelligibles – they sought to clarify various aspects of Plato's thought that remain obscure in the dialogues. The testimony of Theophrastus thus provides us with an important avenue for pursuance of a better understanding of Platonic metaphysics as it was reformulated in the Academy immediately following Plato's death in 347 B.C.E. Does this account reflect Plato's own 'unwritten' teachings in the Academy? We cannot be sure about that, but the results presented here might be worth considering in relation to that debate. Still, Theophrastus' account of the systems of being of Plato and the 'Pythagoreans' has been shown to reflect rather closely what we know to have been genuinely Xenocratean – even if it cannot be considered necessarily Platonic or Pythagorean. The role that Xenocrates has played in the correlation of Platonic and Pythagorean metaphysics is central, so central that the most valuable contemporary 'alternative perspective' to Aristotle's account – that of Theophrastus – might be completely indebted to it. Scholars of ancient Pythagoreanism are thus faced with the impossible task, once again, of extricating genuine Pythagorean ideas from the Platonist substrate. The upshot of our study is that we can now better see how seriously Theophrastus took Xenocrates' claims in the intellectual battles over cosmology, psychology, metaphysics and logic. It has long been recognized that Aristotle saw Xenocrates as a worthy competitor; our study has shown that Theophrastus has much to say about, and in response to, Xenocrates as well, even if we must admit that Theophrastus' own knowledge about Pythagoreanism has been mediated.

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<sup>97</sup> Among attested titles are (Diog. Laert. 4.6–15 = F 2 IP) *On Being, On Ideas, On the Good, On Philosophy, On Wisdom*, and we might also consider a text (not mentioned by Diogenes Laertius, but from which Simplicius apparently quoted) called *On the Life of Plato*. See Dillon (n. 35), 96–7 with n. 27.