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METAPHYSICS AS AN ARISTOTELIAN SCIENCE

by

Ian Hamilton Bell

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy, Graduate Department of Philosophy, University of Toronto

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Metaphysics as an Aristotelian Science. Doctor of Philosophy, 1998. Ian Hamilton Bell, Department of Philosophy, University of Toronto.

The dissertation's primary task is to discern to what extent the investigations contained in Aristotle's *Metaphysics* conform to the model of science (ἐπιστήμη) developed in the *Posterior Analytics*. It concludes that the *Metaphysics* substantially follows the model of the *Analytics* in studying the causes and attributes of a specific nature, although it makes significant departures especially in its conception of the principles of being and substance.

Two introductory chapters discuss respectively Aristotle's conception of science in the *Analytics* and the problems one is likely to face in attempting to apply this conception to the *Metaphysics*. Chapter 3 clarifies the meaning of the phrase "science of being qua being" by reference to the *Posterior Analytics*, and introduces the concept of πρὸς ἐν equivocity. Chapter 4 considers the role of dialectic in metaphysics with particular reference to the principle of noncontradiction. Chapter 5 argues that the second part of *Meta.* 4.2 introduces a demonstrative science of the per se attributes of being and unity.

Chapter 6 introduces the investigation into the principles and causes of being (*Meta.* 6.1) and reviews the aporias about the principles (*Meta.* 3.3-6). Chapter 7 offers a hypothesis to explain Aristotle's identification of the science of being with first philosophy. The last two chapters (8 and 9) argue that Aristotle is pursuing this investigation in the central books of *Metaphysics*, but his pursuit of the investigation there is incomplete.
This interpretation provides an alternative to those of T. H. Irwin and Walter Leszl, who argue that metaphysics is a second-order discipline and not a science after the model of the *Analytics*. It finds explicit support in recent work by Robert Bolton and Alan Code, while widening the range of issues to include the attributes of being and the importance of first philosophy for understanding the nature of being. It supports many of the conclusions of Joseph Owens’s, Urbain Dhondt’s, and Frede and Patzig’s work on the object of metaphysics. There are also substantial discussions of the contributions of G. E. L. Owen, J. G. Stevenson, Theodore Scalsas, and John Thorp.
Acknowledgments

I should like to thank first of all my supervisor, Lloyd Gerson, and my advisor, Stephen Dumont. I am most grateful to my external reader Michael Ferejohn, and to Brad Inwood, Thomas Robinson, and James Morrison for their comments, suggestions, and corrections. The starting point for this dissertation was a master’s thesis on *APo. 2.1-10* written at the Catholic University of America under the supervision of Kurt Pritzl, O.P. and Jean de Groot. I am indebted to Errol Katayama, Inna Kupreeva, Ze’ev Perelmuter, and especially Stephen Walker for much useful discussion, and to my parents for their support. The dissertation was researched and written while I was the recipient of a Social Sciences and Humanities Doctoral Fellowship.
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Major Discussions of Aristotelian Texts

Major discussions of Aristotelian texts are listed by chapter and section. If a section is not listed, it is because no specific text is the primary focus of that section.

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Introduction

I

Few works in the Aristotelian corpus are more controverted than the fourteen books that have come down to us as Aristotle's *Metaphysics*.¹ This is so for many reasons, not the least of which is that the work abounds in desperately different passages. More so than in the case of any other work in the corpus, however, scholars disagree on the nature of the *project* undertaken in the *Metaphysics*, in a way that significantly affects the interpretation of the substantive doctrines developed there. While scholars are by no means agreed on the methodology of Aristotle’s *Physics*, for instance, it is possible for all to agree that it constitutes an essay in general physics or the philosophy of physics.² Moreover, the interpretation of specific doctrines is not substantially influenced by which account of his methodology one adopts. The same is true of the *De anima*: the three books of the *DA* are replete with difficulties, but these are not due to uncertainty concerning the nature of the project undertaken there.

Broadly speaking, the interpretation of the *Metaphysics* has traditionally required a choice between an ontological and a theological interpretation of its project. The ontological interpretation takes its starting point from Aristotle’s characterization of metaphysics as a universal science of being, the theological interpretation from the identification of the same science with first philosophy and theology. The debate over

¹ As is well known, the word “metaphysics” is a post-Aristotelian coinage, and does not occur in the Aristotelian corpus. See Frede 1987b: 81-2, and Owens 1978: 73-4. Aristotle himself characterizes this science alternatively as wisdom (σοφία), first philosophy (πρώτη φιλοσοφία), theology (θεολογική), or the science of being qua being (δό ν ὤν). It is not universally accepted that these all refer to one science: see, e.g., Leszl 1975: 524-40; Aubenque 1962; Mansion 1958. Most recent studies that explicitly raise the question tend to accept the identification (Patzig 1961, Merlan 1968, Kahn 1985, Frede 1987b), even if it is thought to be seriously mistaken (Barnes 1995, Thorp 1989). In what follows we shall frequently use “metaphysics” as a convenient shorthand for “the science of being qua being,” though we shall also argue that this science may be identified with first philosophy and theology.
² For two different approaches to Aristotle’s methodology in the *Physics*, see Owen 1961 and Bolton 1991. Aristotle himself does not distinguish between physics and the philosophy of physics, although presumably he would admit a distinction between general (or “universal”) physics and the specific subdisciplines (e.g., biology, the study of the elements) that fall under it.
which of these conceptions is to be adopted goes back at least to Avicenna and Averroes; a summary can be found in the first chapter of Owens’s *Doctrine of Being*. ³ Neither conception is unproblematic as an interpretation of the available textual evidence. The ontological interpreter of the *Metaphysics* characteristically must ignore much of Aristotle’s methodological reflection—particularly *Meta*. 1.1-2 and 6.1—as well as many individual passages scattered throughout the text. It usually becomes necessary either to reject these texts as spurious interpolations or to assign them to an immature stage in Aristotle’s metaphysical thought.⁴ On the other hand, the bulk of Aristotle’s substantive discussion in *Meta*. 7–10 seems to be concerned with being and unity in sensible substances, and it is not clear how this is compatible with a theological conception of the science of being. Many scholars have thought it possible to study the doctrine of these “central” books without any reference to the methodological discussions that precede them.

If anything may be inferred from these debates, it is that it is necessary to do more than simply amass texts supporting a theological or an ontological interpretation if one is understand Aristotle’s project in the *Metaphysics*. A promising approach to the question is made possible by the revival of interest in the *Posterior Analytics* over the last twenty years. Recent scholarship has focused extensively on the influence of Aristotle’s account of scientific knowledge in the *Posterior Analytics* on the structure and methodology of other parts of the corpus, especially the biological works.⁵ While there has not yet been the same enthusiasm to apply the methodology of the *Posterior Analytics* to the *Metaphysics*—to date there are only a handful of articles that make the attempt—it seems worthwhile at least to determine to what extent the former work may be of use for elucidating Aristotle’s project in the latter.⁶

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³ Owens 1978.
⁴ See, e.g., Natorp 1888, Jaeger 1912 and 1948, Leszl 1975. (On developmental interpretations, of course, it would not make sense to speak of a single project for the *Metaphysics*.)
⁵ See, for instance, many of the contributions in Gotthelf and Lennox (1987). For considerations of the role of the *APO*. outside biology proper see particularly Bolton (1991) for the *Physics*, and Anagnostopoulos (1994) which focuses primarily though not exclusively on the *Ethics*.
⁶ For attempts to apply the methodology of the *APO*. to the central books see esp. Bolton 1995; also Bolton 1994, Code 1997.
In what follows we undertake a careful examination of the *Posterior Analytics* and the *Metaphysics* with precisely this goal in mind. We shall argue that the *Metaphysics* follows the methodology of the *Posterior Analytics* in many respects, and thus that the conception of science in the former is helpful for understanding Aristotle's project in the latter. The *APo.* conception of science as an investigation into the causes and attributes of a nature provides the structure for the science of being and substance undertaken in the *Metaphysics.* However, in the *Metaphysics* Aristotle modifies the methodology developed in the *APo.* in certain crucial respects. We shall examine Aristotle's reasons for his modifications of the *APo.* methodology, and develop the implications of these departures. Having done this, we shall be in a better position to understand the relation between a universal science of being and the science of unmoved entities with which Aristotle identifies it. In other words, a close examination of the relation of the *Metaphysics* to the *Posterior Analytics* also sheds light on questions raised by the traditional theology-ontology debates.

II

Some bibliographical background is helpful in order to put our study into perspective. Recent work on the *Metaphysics* in the Anglo-American tradition has been devoted especially to questions arising out Aristotle's treatment of the being of sensible substances in *Meta.* 7–9.7 Such work rarely raises questions concerning the relation of the central books to the rest of the *Metaphysics,* rather, it generally assumes that the central books can be understood in isolation from the methodological books that precede them.8 Interpretations in this tradition thus implicitly conceive Aristotle's project in the middle books of the *Metaphysics* as an independent ontology of the sensible world.9

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7 A recent bibliography may be found in Bostock 1994; see also Scaltsas 1994 and its bibliography. Other common targets of scholarly attention include Aristotle's treatment of the principle of noncontradiction in *Meta.* 4.3-8 and the treatment of coincidence in *Meta.* 6.2-3. See the bibliography in Kirwan 1993.
8 There are, for instance, no references to *Meta.* 4.1-2 or 6.1 in Scaltsas's index locorum. Witt (1989) offers a comparatively generous but still very sketchy account of the methodological books.
9 Not everyone who uses "ontology" to describe Aristotelian metaphysics is using the word in this restricted sense. Both Dondon 1961 and Reale 1980 use "ontology" without any anti-theological connotations and simply to emphasize that metaphysics is a science of being. Patzig 1961, Frede 1987, and Rist 1989 attempt to show how metaphysics can be both theology and ontology. Owens's deliberate
Although studies that assume an ontological conception of the *Metaphysics* are much more numerous than explicit defenses of this interpretation, the last thirty years have seen two major attempts to conceive metaphysics in this manner. In 1975 Walter Leszl argued for this interpretation mainly on the basis of a study of book 4. In so doing, Leszl argued that the *Metaphysics* should be conceived not as a first-order science after the model of the *Analytics*, but rather as a second-order conceptual investigation related to Aristotle's sciences much as twentieth-century analytic ontology is often supposed to be related to contemporary empirical science.\(^{10}\)

In 1988, T. H. Irwin adopted this account of the role of the *Metaphysics* in his monumental *Aristotle's First Principles*. While not explicitly a contribution to the ontology-theology debate, Irwin's study defends an interpretation of the *Metaphysics* according to which it is essentially a foreshadowing of Kant's attempt to establish an ontology on the basis of the conditions for the possibility of knowledge of objects.\(^{11}\) Like Leszl, Irwin argued that metaphysics is distinguished from the other sciences by its character as a noncausal, second-order investigation. Unlike sciences modeled after the *Analytics*, it does not seek to discover the principles and causes of some phenomenon and to demonstrate its attributes, but rather uses "strong dialectic" to establish general truths about subjects for predication.\(^{12}\)

Both these defenses of the ontological interpretation of the *Metaphysics* argue that the study undertaken there is something other than an investigation into the causes and attributes of a nature or phenomenon that constitutes an Aristotelian science in the *Posterior Analytics*, and so both present a challenge to our hypothesis that the *Analytics* is

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avoidance of "ontology" (1978\(^3\) and esp. 1986), although understandable given the connotations the word has acquired, risks obscuring Aristotle's intended implication that theology is also the science of being qua being.

\(^{10}\) See esp. Leszl 1975: 404-20. In his introduction, Leszl mentions the influence of Strawson and Quine (pp. 5-6). Graham (1987: 20-1, 36-7) follows Gaukroger (1978) in attributing an ontology to Aristotle as part of the "explanatory structure" assumed by his natural science. For Graham, Aristotle's works actually contain two incompatible ontologies, one developed in the works commonly called the *Organon* and the other in the *Physics* and *Metaphysics*. Graham thus sees part of the *Physics* as ontological (as does Leszl, pp. 494-526). Graham ignores Aristotle's own mature reflections on the division and methods of the sciences: there are no substantive references to *Phys. 2.2, Meta. 4.1-2, Meta. 6.1, Meta. 13.3*, or *DA 1.1* in his index locorum.


\(^{12}\) Irwin 1988: 168-78.
helpful for understanding Aristotle's project in the *Metaphysics*. Irwin in particular attempts to show why metaphysics cannot be an Aristotelian science, appealing to the methodological requirements of Aristotelian science in general and of a universal science of being in particular. Irwin thus attempts to show that his conception of Aristotle's project in the *Metaphysics* is compatible with the characterizations of this discipline in Aristotle's own methodological discussions.\(^\text{13}\)

According to Irwin, Aristotle's discovery of metaphysics arose out of the need for a justification of the indemonstrable principles of the Aristotelian sciences, and the inability of either scientific intuition (*vòòç*) or dialectic to provide that justification in a metaphysical realist account of scientific knowledge.\(^\text{14}\) Irwin argues that *vòòç* as described in the *Posterior Analytics* is an impossible cognitive state, and that Aristotle himself eschews the use of *vòòç* as a grasp of first principles in the *Metaphysics*.\(^\text{15}\) While Aristotle does endorse and use dialectic in his earlier works (the *Organon* and the *Physics*), Irwin argues that his dialectical arguments "seem too weak to support his conclusions" and that even if they were stronger, they would only "show how things seem to common sense, not how they are" (pp. 16-17). In the *Metaphysics* Aristotle himself comes to share this belief: dialectic is merely tentative, whereas philosophy can have knowledge of objective truth (4.2.1004b25-6). For Irwin this is especially to say that whereas dialectic remains bound by common beliefs, philosophy, and in particular metaphysics, can provide justifications of these beliefs that do not depend on anyone's opinions and are thus of a high enough epistemological standard to meet the demands of metaphysical realism.

Irwin maintains that the argument for this conception of the science of being is found in the methodological books of the *Metaphysics*. The principal purpose of *Meta.* 1.3-10 is to show that his predecessors "were conducting first-order inquiry relying on

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\(^{13}\) Although Lesz1 discusses *Meta*. 4.1-2 and *Meta*. 6.1 in a clearer and less summary fashion than Irwin, he does not even attempt to show that books 1 and 3 can be interpreted consistently with his overall interpretation. Rather, he dismisses them as early and unrepresentative (1975: chap. 3).

As we have noted, there are very few sustained attempts to show that an ontological interpretation of the *Metaphysics* is compatible with the doctrine of *Meta*. 1-6, and so our concentration on Irwin is not at the expense of ignoring other solutions.


\(^{15}\) Irwin 1988: 143, 197. The role of *vòòç*, *δυνατα*, and dialectic in Aristotelian science and the *Metaphysics* in particular is the topic of our fourth chapter.
erroneous second-order assumptions about the proper conduct of a first-order inquiry” (p. 160). Aristotle’s predecessors’ accounts of the causes are faulty precisely because they make incorrect assumptions about the nature of a causal investigation, and their errors show us that we need a second-order universal science to examine the assumptions made by the first-order sciences.\(^{16}\) It is for this reason, according to Irwin, that Meta. 1 “justifies us in taking the *Metaphysics* to be a metaphysical inquiry.” It indicates that the *Metaphysics* will accomplish the tasks assigned to the discipline by Kant, treating of “those elements and highest maxims which must form the basis of the very possibility of some sciences, and of the use of all.”\(^{17}\)

The purpose of the methodological aporias, according to Irwin, is to show that metaphysics cannot be a science modeled after the *Analytics*. The aporias “arise if we think a universal science should meet Aristotle’s criteria for a first-order, demonstrative science” (p. 162). A universal science of causes, according to Irwin, “preempts the special sciences studying subsets of substances or causes”; likewise a universal demonstrative science violates the *APo*. requirement that each demonstrative science have “its own proper area of appearances and its own undemonstrated assumptions” (pp. 162-3). The solution is to maintain that the universal science is neither demonstrative nor strictly a science of causes.\(^{18}\) Irwin emphasizes the study of the common axioms as the model for

\(^{16}\) “Though no single set of principles implies the truths of both arithmetic and physics, a single set of principles may show that arithmetic and physics should investigate two different sorts of causes. In *Metaphysics* 1 Aristotle argues that we need this sort of second-order science” (p. 160). I do not see any kind of textual evidence in *Meta*. 1 for this last assertion, nor does Irwin provide any. Rather, Aristotle uses the survey as evidence for the completeness of his account of the causes (983b1-6, 988b18-23, 993b11-15); the moral of Aristotle’s criticism of his predecessors is that a much better (first-order) account of the causes is needed; in particular, one that gives an adequate account of ὀνόματι as a cause. See section I of chapter 2.

Irwin also sees in *Meta*. 1.1 an attempt to find a stronger justification for the four causes than those offered in *Phys*. 2.2 and *PA* 1.1. Unlike the *Phys*. and *PA*, according to Irwin, the *Metaphysics* defends the four causes not only by an appeal to the “appearances” (φανόμενα) but by Aristotle’s “standing” outside his own view of the appearances, and showing why his predecessors could have answered their own questions better by recognizing the four causes” (p. 159). This seems unconvincing both as an account of Aristotle’s procedure in the *Phys*. and *PA* and of his procedure in the *Meta*.

\(^{17}\) *Critique of Pure Reason*, A851/B879, quoted p. 160. In his note on this passage (541 n. 18) Irwin claims that the Kantian conception of metaphysics “is not necessarily alien to Aristotle” but does not offer any further argument that Aristotelian metaphysics should be conceived in a Kantian way.

\(^{18}\) Irwin attempts to deal with the passages that suggest that metaphysics seeks causes of being and substance (1003a31-2, 1003b17-19, 1025b3-4, 1028a2-4) by suggesting that Aristotle intends not an investigation into the causes of a particular nature or phenomenon but rather an investigation into the
metaphysics: this study cannot be demonstrative, and so neither can metaphysics as a whole.\textsuperscript{19}

Irwin sees the aporias about the principles as akin to Kantian antinomies. As apparently unresolvable first-order questions, they raise second-order questions; they make assumptions that need to be scrutinized by a second-order science. Thus metaphysics should not so much answer the questions raised \textit{in} the aporias as those raised \textit{by} the aporias (p. 166). In short, we should not expect Aristotle's actual metaphysical investigations to address the substantive questions discussed in \textit{Meta}. 1 and 3: in both cases, Irwin argues, these investigations are the products of unexamined assumptions. The purpose of the science described in \textit{Meta}. 4 is to examine these assumptions.\textsuperscript{20}

If metaphysics is not a demonstrative science, it must be dialectical. It cannot, however, rely on the kind of dialectic suitable for discussion only at the level of opinion: it must be able to justify its conclusions as objectively true (p. 175). "Strong" dialectic, then, will find its premises not in mere common opinion but in a much more restricted set of opinions: for instance, it will start from the assumption that scientific knowledge is possible and (in a Kantian fashion) ask what must be true if this is so (p. 176). The first conclusion that can be drawn is the principle of noncontradiction: the defense of the PNC in \textit{Meta}. 4.4-5 is the first test for strong dialectic as the method for first philosophy (p. 180). Metaphysics distinguishes itself from the first-order sciences by studying the conditions of their possibility.

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\textsuperscript{19} Irwin 1988: 162-3, 172-3. Likewise, Aristotle's defense of the axioms "will show us what it is like to argue about being qua being" (p. 179), and "the defence of the [principle of noncontradiction] is a test for the method of first philosophy" (p. 180).

One might note in passing that two important methodological passages that Irwin takes to refer to the study of the common axioms (1003a31-2 and 995b22-5, both cited on p. 163) actually refer to the per se attributes of being. The per se attributes are almost completely ignored by Irwin: he never raises them as a topic on their own, and ignores both the discussion in \textit{Meta}. 4.2 and their treatment in \textit{Meta}. 10 when he lists the tasks of first philosophy (p. 154).

\textsuperscript{20} Irwin relies almost entirely on \textit{Meta}. 4.1-2, rather than \textit{Meta}. 6.1, for his characterization of metaphysics. The only substantive use of 6.1 is 1025b9-16 (to show that metaphysics is not demonstrative—see our discussion in chapter 6, p. 158). On Irwin's treatment of 1026a23-32 see chapter 7, note 54 below.
III

A brief overview of Irwin’s approach to the *Metaphysics* thus indicates some of main problems that must be addressed if metaphysics is to be shown to be a science after the model of the *Posterior Analytics*. It is necessary to show how there can be a universal science of causes and demonstrable attributes that does not infringe on the independence of the special sciences. Otherwise put, it is necessary to conceive the nature that is the object of a science of being in such a way that the science of being does not simply become an attempt to demonstrate and explain everything that is true of the world. Furthermore, it is necessary to explain what distinguishes metaphysics from the other sciences, if it is not the fact of being a second-order discipline with a dialectical rather than a demonstrative methodology. It is clear from important passages in *Meta*. 4.3-8 that at least one of the tasks of metaphysics cannot have a demonstrative methodology: the common axioms are assumed by any demonstration and so cannot be established demonstratively. Irwin’s conclusion that metaphysics as a whole is the study of indemonstrable principles of the special sciences, even if wrong, is nevertheless not without *prima facie* plausibility.

In what follows we shall argue that what the tasks assigned to the science of being have in common is not a methodology or proof structure distinct from that of the special sciences, but rather the “qua itself” (ἡ αὑτό) relation of their respective objects to a specific nature, being and substance. The being and substantiality of a substance can be distinguished from everything else that is true of that substance, and so there can be a science of being. The ἡ αὑτό relation of its objects to being and substantiality both gives the science of being its unity and distinguishes it from the special sciences.

The ἡ αὑτό relation is most easily understood by considering Aristotle’s account in *APo*. 1.4 of what demonstrable properties are ἡ αὑτό to their subjects. A ἡ αὑτό property must belong to all instances of the subject, and to that subject primarily (πρῶτον, 

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21 I use “proof-structure” specifically to refer to the part of a discipline’s methodology that indicates how the principles or premises of an investigation are to be related to its conclusions. In *APo*. 1.2 Aristotle indicates that the proof-structure is supposed to follow the explanatory structure: the premises are the causes of the conclusions. One of the points at issue is whether the proof-structure of metaphysics follows this explanatory structure.
73b39; cf. b33). For instance, the property of having angles equal to two right angles belongs ἃ ἄντο to triangles. It is not ἃ ἄντο to the genus above triangle, i.e., plane figure, because there are plane figures to which the property does not belong. Nor is it ἃ ἄντο to isosceles triangles, even though it does necessarily belong to isosceles triangles. Rather, the property of having angles equal to two right angles is ἃ ἄντο to the widest subject genus of which it is true that the property belongs to all of its members, and belongs universally (καθόλου) to that subject genus (73b32-74a3).

Aristotle introduces the science of being in Meta. 4.1 with the statement that there is a science that studies being qua being and whatever belongs to it per se (τὸ ὁν ἃ ὁν καὶ τὰ τοῦτῳ ὑπάρχοντα καθ’ ἄντο, 1003a21-2). This science is distinguished from those that do not investigate universally about being qua being (καθόλου περὶ τοῦ ὁντος ἃ ὁν, a24) but only about a part of being. If we are to read this declaration in light of the methodology espoused in the Posterior Analytics, we should expect Aristotle to be indicating the level of generality at which the science of being studies beings. There are scientific truths applicable to beings not qua some kind of being but precisely because they are beings. What Aristotle takes to be distinctive to metaphysics is not a second-order, dialectical methodology but rather the ἃ ἄντο relation that all objects of metaphysics have to being and substance. There are three kinds of things that possess this ἃ ἄντο relation to being: the principles and causes of being, the per se attributes of being, and the common axioms or principles of demonstration. Metaphysics thus has three tasks, each of which will have a proof-structure appropriate to it.

We shall develop this account of Aristotle's metaphysical project over the course of nine chapters. Chapter 1 considers Aristotle's conception of wisdom and the account of scientific explanation developed in the Posterior Analytics, with special attention to facets of this account that are likely to create problems when applied to a science of being. Chapter 2 considers introductory material in the Metaphysics, including Aristotle's account of his predecessors in Meta. 1.3-10 and the methodological aporias in Meta. 3.2. Chapter 3 applies the ἃ ἄντο relation in the Posterior Analytics to the science of ὁν ἃ ὁν, and provides a preliminary account of the nature studied in that science. With chapter 4

22 We develop our account of the "qua" locution in chapter 3.
we begin our accounts of the individual tasks assigned to metaphysics. Chapter 4 considers Aristotle’s treatment of the common axioms (while making some remarks about Aristotle’s use of dialectic in the sciences generally), chapter 5 the properties or attributes that belong to being qua being, and chapters 6 and 7 the investigation into the principles and causes of being and the identification of this investigation with first philosophy. Finally, in chapters 8 and 9, we attempt to show how Aristotle applies the methodology of the investigation into the principles and causes of being in the central books, and consider the relation of *Meta.* 12 to the rest of the *Metaphysics.*

IV

Since we are arguing that the methodology of the *Metaphysics* is significantly influenced by the *Posterior Analytics,* it seems worthwhile to recall the reasons why the *Meta.* is traditionally dated later than the *APo.* Furthermore, we shall find it convenient to refer to the *Physics, Metaphysics,* and *De anima* as Aristotle’s “later” or “mature” works, and will give some reasons for this designation here. The most recent comprehensive attempts to develop a chronology of Aristotle’s works are two books by Daniel Graham and John Rist. Graham’s chronology is motivated by his hypothesis that Aristotle’s thought comprises two incommensurable systems, characterized mainly by the presence or absence of a hylomorphic conception of substance. He attempts to show that the works we call the *Organon,* where there is no mention of form or matter, present an earlier ontology than the *Physics, Metaphysics,* and *De anima.* Rist, on the other hand, attempts to establish a philologically based chronology which he also believes to yield an intelligible account of Aristotle’s philosophical development.

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23 Graham 1987; Rist 1989. As their dates would suggest, neither work is influenced by the conclusions of the other.

24 As Gill (1993) points out, Graham’s interpretation depends on putting very heavy weight on the word ἀτομον (*Catg.* 3b12), which Graham on p. 35 takes to imply ontological indivisibility, e.g., indivisibility into matter and form. This goes against the more usual translation of ἀτομον as “individual” (see Frede 1987d), which Graham appears to accept on p. 25. Certainly the Aristotelian of the *Categories* is aware that substances are not unqualifiedly simple, as his passing reference to the parts of a substance at *Catg.* 2.1a24-5 indicates. For arguments in favour of a more gradual but still definite development in Aristotle’s conception of substance see Rist 1989: chap. 14; on the development of Aristotle’s account of the principles of substance see esp. chaps. 6-8 of the present dissertation.
Our primary interest, of course, is in the relation between the *Posterior Analytics* and the *Metaphysics*. The conclusion that the two works are not wholly in agreement, and that the latter is later than the former, will follow from the overall argument of our dissertation. This conclusion has already become accepted in the literature for several reasons. Many commentators focus on the fact that the *APo.* denies the possibility of any sort of universal science, while metaphysics is clearly a sort of universal science.\(^{25}\) It is not clear that Aristotle’s arguments in the *APo.* rule out the kind of universal science that metaphysics is, but it is certainly true that that there is no sign there of such a science.\(^{26}\) Had Aristotle admitted the existence of a science of metaphysics at the time he was writing the *APo.*, we should expect the axioms or common doctrines to have been assigned to it, as they are in *Meta*. 4.3-8. In the *APo.*, however, the axioms are common to all the sciences by analogy (1.10.76a37-41) and in themselves are discussed dialectically rather than scientifically (1.11.77a26-35). Additional evidence is to be found in the fact that Aristotle raises the idea of scientific investigation of the causes of substance in *APo.* 2.1-2, but appears to lack the conceptual instruments to develop this idea as he does in the *Meta*.\(^{27}\) Conversely, it is clear that the doctrines developed in the *APo.* are available to Aristotle while writing the *Meta*. The demonstrative character of *APo.* science is the source of the fifth aporia of book 3, and the possibility of a science of being if being is not univocal (as the *APo.* requires) is an issue treated throughout the early books of the *Metaphysics*.\(^{28}\) Likewise, in *Meta*. 4.2 Aristotle uses the *APo.* terminology of καθ’ αὐτά πάθη and συμβεβηκότα to describe a part of metaphysics’ subject matter (1004b5-8).

What of the relation of the *Metaphysics* and *Posterior Analytics* to Aristotle’s other theoretical works? The *De anima* defines the soul in terms of the technical terminology worked out in the central books of the *Meta.*: as the form of a natural substance the soul is also its actuality, τί ἐν εἶναι, οὕσια κατὰ τὸν λόγον, and αἰτιον

\(^{26}\) Cf. chapter 1, pp. 39-45, and chapter 3, pp. 78-80.
\(^{27}\) Although Aristotle uses “man” and “soul” as examples of objects of explanation at 2.8.93a23-4, he never develops these examples. See Rist 1989: 53-4; and our discussion in chapter 6, p. 163.
\(^{28}\) An electronic search of the TLG yields a total of 69 references to demonstration (ἀποδείκνυ- and ἀποδείξ-), though no one of them explicitly states that metaphysics is demonstrative. See chapter 5, n. 22 below.
This suggests that the DA is either contemporaneous with or later than the Meta., and in fact scholars tend to date it very late. The Physics is generally thought to predate the Metaphysics: Meta. 1, on most accounts the earliest book of the series, refers to Phys. 2 in several places.

This may lead to an implausibly early date for the Phys. and APo. if one follows Jaeger on an early date for book 1 of the Metaphysics. Jaeger took Aristotle's use of the first person plural ("we") when discussing Platonic views on the Forms to indicate that Meta. 1 "was written at a time when Aristotle could still consider himself a Platonist and a recent supporter of the theory." Thus Jaeger dates Meta. 1 to early in the Assos period (i.e., 347 or slightly later), with the result that the APo. and the Phys. passages to which it refers must be dated to the Academic period. In other words, during his years at the Academy Aristotle would not only have embraced and subsequently rejected Plato's theory of Forms, but also would have composed the bulk of the Organon and developed his mature account of the four causes. Although Aristotle was at the Academy for twenty years, this nevertheless seems unlikely.

It is not clear, however, that Aristotle was ever a supporter of a Platonic theory of Forms in the first place. Jaeger's conclusion that he was is based on reading references to "nature" in the Protrepticus as references to Platonic Forms. It is not necessary to read these references in this way, however, and Owen's and Rist's thorough examinations of the dialogues both conclude that there is no evidence that Aristotle ever held the theory of Forms. Although an explanation for Aristotle's use of "we" in Meta. 1 is still required, the explanation does not lie in Aristotle's ever having been held a Platonic theory of

29 Rist (1989: 286) dates it ca 327, contemporaneous with the latest part of the Meta. In this he follows a well-established consensus; see Ross 1957: 65-6.
31 As Graham 1987 does; again, p. 119 and n. 2.
32 Jaeger 1948: 171. As Owen (1965) points out, the meaning of "Platonist" is not as clear as Jaeger seems to have thought; there are many points on which Aristotle's philosophy is consistently influenced by Plato. In this paragraph we are using it only to refer to belief the existence of Platonic Forms.
33 Cf. Ross 1949: 22-3. Graham (1987: 301-2) points out that we can often date the logical and mathematical work of great thinkers to a fairly early age, so an early date for the APo. is certainly not impossible.
Forms. This allows for much greater latitude in dating *Meta* 1, and hence also *Phys.* 1–2 and the *APo.* On the one hand, since there is no evidence that Aristotle was ever an orthodox Platonist, the polemics against the Forms in the *APo.* can be dated as early as is consistent with other evidence. Conversely, since Aristotle was not *recently* a Platonist while writing *Meta* 1, it can be dated as late as other evidence may require. In any event, there is plenty of time for the *Physics* and *Posterior Analytics* to have been written before the *Metaphysics*.

Assuming that the *Posterior Analytics* and the *Physics* are both earlier than the *Metaphysics*, can we reach any conclusions about their relationship to each other? Graham’s Two Systems theory requires that the *APo.* be dated earlier than the *Physics*. Rist, however, tends to date the bulk of the *Physics* early, mainly because of a cross-reference in the agreed-to-be-early *De Caelo* to *Phys.* 6 (which in turn appears to refer to discussions in *Phys.* 4 and 5). This leads to a completion date circa 345 for *Phys.* 2–7, well before the *APo.* (341/0).

Whatever one makes of the cross-reference, there are good reasons to doubt that the whole of *Phys.* 2–7 should be dated so early. As Rist points out, the *DC* still follows Plato in positing a self-moved mover as the ultimate cause of motion, rather than the unmoved mover argued for and described in *Phys.* 8 and *Meta.* 12. In *Phys.* 2.7, however, Aristotle maintains at some length that some movers are not “physical” because they move without themselves being moved (198a21-b4). Thus in *Phys.* 2.7 (198a30) Aristotle writes that the unmoved movers described there are properly objects of a science of unmoved entities (i.e., first philosophy), while *Phys.* 2.2.194b14-15 refers to first philosophy explicitly. Additionally, *Phys.* 3.1-3 also refers to an unmoved mover (3.1.201a27), and Aristotle’s insistence there that motion is in the thing moved rather than

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35 Rist (1989: 63–4) dates *Meta.* 1 to Aristotle’s return to Athens (334 BC), and hypothesizes that the use of “we” is part of a more conciliatory tone connected with the circumstances of his return.
36 Rist 1989: 45; *DC* 3.1.299a10.
37 *Phys.* 1 is considered to be later because of the reference to first philosophy at 1.9.192a34-b1, *Phys.* 8 because of its doctrine of the unmoved mover. We shall see momentarily that *Phys.* 2–3 should also be dated later on the same grounds.
39 It is just possible that 194b14-15 is an addition to the end of *Phys.* 2.2 (though it seems perfectly appropriate in the context), but it is difficult to argue to same for what is in effect a substantial part of *Phys.* 2.7. See further our discussion of these passages in section I of chapter 7.
the mover seems designed to allow for the possibility of movers that are not themselves moved. The passages in question clearly date from a time when Aristotle recognizes the existence of first philosophy and of the unmoved movers that constitute its primary object. Although the cross-reference suggests that *Phys.* 4–6 (or parts thereof, or at least a version thereof) is early, the references to first philosophy and unmoved movers seem to rule out a very early date for *Phys.* 2–3.  

A significant piece of evidence that the *Posterior Analytics* actually predates at least *Phys.* 2 is the contrast between his treatment of teleological explanation in *APo.* 2.11 and in *Phys.* 2.9. In *APo.* 2.11, Aristotle attempts to show that a final cause can be expressed as a middle term of a demonstration. In *Phys.* 2.9 and *PA* 1.1, by contrast, Aristotle appears to have abandoned the attempt to construe the final cause as a middle term; and has introduced an explanatory structure completely absent from the *Posterior Analytics*, demonstration through hypothetical necessity.  

The *Posterior Analytics* suggests the following as an example of demonstration using the final cause:

A: being healthy  
B: prevention of the rise of food  
C: a walk after supper

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40 Our evidence for the lateness of book 3 applies strictly only to chapters 1-3. (As Stephen Walker has pointed out to me, ms. E's title for *Phys.* 3 [. . . πέρι ἀνεπίπου] suggests that the first three chapters may not have been part of book 3 at one point or in some versions.) As evidence for the relative lateness of 3.1-3, note also Aristotle's curious reference to being in potency and actuality (3.3.202b9-10), which may be referring to *Meta.* 8 (8.6.1045b17-19?) or 9.  
41 Graham (1987: 160-2) emphasizes the absence of matter in *APo.* 2.11 but not that of hypothetical necessity. The latter seems to be a better indication of development, in that Aristotle is clearly attempting to accomplish the same task (i.e., present the structure of final causal explanation) in *APo.* 2.11 and *Phys.* 2.9, whereas the absence of any mention of matter in the *Apo.* may have other explanations. Although there is no mention of matter in the *Organon*, Aristotle must already have been aware of Plato's arguments for a material principle in the *Timaeus* (i.e., the receptacle), and have had some opinion on the necessity of such a principle himself (cf. Rist 1989: 11-12). The question is rather whether Aristotle had a well-developed conception of this principle available to him while writing the *Apo.*  
Apart from the *Phys.*, the treatise where these issues are dealt with most explicitly is *PA* 1.1, which Rist dates to c. 331, contemporaneous with Aristotle's early work on *Meta.* 1. The *PA* appears to be alluding to first philosophy at 1.1.641a32-b10. Although hypothetical necessity is not mentioned explicitly, the same approach is taken for body and soul at *DA* 2.4.415b15-20. For other mentions of hypothetical necessity in Aristotle see note 44 below.
A belongs to B
B belongs to C
A belongs to C \((APo. \ 2.11.94b11-18)\)

According to 94a23-4, the cause being demonstrated should be in the middle term. Aristotle is aware that in this case the middle term, B, is not the final cause (A); rather, it is the \(\alpha\tau\iota\pi\nu\) of the final cause’s belonging to the third term (C) (94b18-19). It is also in a sense a \(\lambda\gamma\omicron\omicron\) of health, for it is the way that health will be brought about \((\alpha\pi\omicron\delta\omicron\omicron\omicron\omicron\omicron\, \omicron\omicron\iota\), b20). It is at this point that Aristotle makes the cryptic remark that one must transform the formulas \((\mu\epsilon\tau\alpha\lambda\alpha\mu\beta\alpha\nu\epsilon\omicron\tau\nu \tau\omicron\zeta \lambda\gamma\omicron\omicron\omicron\omicron\, \, b21-2)\) in order to make the example clearer. Despite the abundance of commentary on this sentence, it remains far from clear what the transformation is and how it is supposed to generate a demonstration with the final cause as a middle term.\(^{42}\)

What Aristotle’s example strongly resembles, however, is the structure of explanation through hypothetical necessity in \(\textit{Phys.} \ 2.9\) (200a10-13, a24-6) and \(\textit{PA} \ 1.1\) (639b26-30, 640a10-19, 642a2-13).\(^{43}\) To use the example in the last-cited passage, if an axe is to cut it must be hard, and if it is to be hard it must be made of iron: the middle term (hardness) is not the final cause but that which connects the necessity that the axe be made of a certain material to its purpose (cutting). In \(\textit{APo.} \ 2.11\) Aristotle appears to have found the kind of reasoning he will eventually condone in the \(\textit{Phys.}\) and \(\textit{PA}\), but is not yet calling it hypothetical necessity and has not yet realized that this, rather than a demonstration with the final cause as a middle term, is appropriate for final-causal explanation.

Hypothetical necessity is also glaringly absent from Aristotle’s account of the relation between teleology and necessity at the end of \(\textit{APo.} \ 2.11\). He points out that the same thing may exist both of necessity and for the sake of something (94b27-8). In the case of lanterns, for instance, light passes through the pores both (a) due to the nature of light and the size of the pores, and (b) for some purpose, e.g., finding our way without stumbling (94b28-31). Things may also come to be \((\gamma\iota\nu\varepsilon\sigma\theta\alpha\iota, \, a29)\) both out of necessity and for the sake of something: this occurs especially in things that come to be by the workings of nature \((\kappa\alpha\tau\alpha \phi\omicron\omicron\iota\nu, \, b35-7)\). There are \textit{two} kinds of necessity, that which is

\(^{42}\) See, e.g., Barnes 1994\(^{2}\), Ross 1964, and Apostle 1982 \textit{ad loc}.

\(^{43}\) Cf. also Aristotle’s model of generation through \(\tau\epsilon\chi\nu\eta\) at \(\textit{Meta.} \ 7.7.1032b6-9\).
κατα φόσιν καὶ τὴν ὁμήν, and that which arises παρὰ τὴν ὁμήν and by force (bία, 95a1). There is no suggestion yet that the size of the pores are necessitated by the purpose for which the lantern exists. Necessity can work in parallel with teleology, but the notion of something’s being necessitated by a τέλος—hypothetical necessity—is absent from APo. 2.11. This absence becomes conspicuous when this passage is contrasted with Aristotle’s statements in the Metaphysics, for instance, that there are three kinds of necessity. Necessity is contrasted with teleology in the APo. and becomes a vehicle for teleology only in the Phys. and PA.

Comparison of the APo. with Aristotle’s other major “theoretical” works reveals that there are prima facie reasons to consider the former to be at least slightly earlier than the latter. The APo. mentions neither a science of being nor a discipline of first philosophy, whereas the other works under consideration all explicitly mention at least one or the other. Likewise, although the APo. recognizes the Aristotelian concept of nature and the role of final causality, Aristotle does not yet seem to be in possession of his mature account of the structure of teleological explanation and its relation to necessity. One might add that Aristotle nowhere mentions the role of matter in the definitions of substances in the APo., an important theme in Phys. 2.2, Meta. 6.1, and DA 1.1; and presumably one that should be of importance for Aristotle’s account of definition in APo. 2.1-10 and 2.13-14. The prima facie indications we have collected here will receive further confirmation as we proceed to examine the relationship between the Posterior Analytics and the Metaphysics in greater detail.

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44 "For ‘necessity’ has the following senses: (a) by force, which is contrary to a thing’s tendency [παρὰ τὴν ὁμήν], (b) that without which the good is impossible, and (c) that which cannot be otherwise and is necessary without qualification" (Meta. 12.7.1072b11-13, slight modification to Apostle). Cf. Meta. 5.5 (Apostle’s first two senses both amounting to hypothetical necessity), GC 2.11 (on absolute vs. hypothetical necessity), PA 1.1.642a1-14. The PA passage is interesting because it mentions that hypothetical necessity is not referred to in the “theoretical works,” possibly a reference to APo. 2.11 (so Balme 1972: 100). Possibly PA 1 is Aristotle’s first discussion of hypothetical necessity.

45 PA 1.1.642a31-b4 suggests that Aristotle’s mature works allow for both kinds of necessity, i.e., both hypothetical necessity and the kind described in APo. 2.11.
V

Having indicated our position about the relation of the *Metaphysics* to Aristotle’s other major theoretical works, we should say something about the unity of the *Metaphysics* itself. It is fairly clear that two books of our *Meta.*, books 2 (α) and 11 (Κ), would not have a place in a polished *Metaphysics*. Book 2 betrays its origins by the problems it causes for the numbering of the other books, and seems to have been inserted between books A and B which would have constituted the original first two books. Where α does originate is a matter of dispute. Rist, for instance, thinks it was written as an introduction for the *Physics*, Gerson that it represents an earlier stage in Aristotle’s thought when he conceived of god as an efficient cause of being. Book 11 duplicates Aristotle’s treatments of issues in *Meta.* 3-6, with additional material from the *Physics*. Another possible intruder, book 5, could nevertheless easily be part of a unified *Metaphysics*—Owens points out that it seems be the departure point for many discussions in book 7—although it may not belong where it is presently located. Its role in the *Meta.* does not seem particularly important for understanding Aristotle’s conception of the whole. What is significant for understanding Aristotle’s conception of metaphysics are the relations between five texts: (1) *Meta.* 1 and 3; (2) *Meta.* 4; (3) *Meta.* 6.1; (4) *Meta.* 7–9; and (5) *Meta.* 12. Texts (1)–(3) are introductory, programmatic parts of the *Meta.*; text (4) is a treatment of being using sensible substances; and text (5) is a treatment of sensible and suprasensible substances, often thought to be independent of the rest owing to the absence of explicit cross-references.

Disputes about the unity of Aristotle’s conception of metaphysics generally involve the relations between these texts, particularly between (1), (3) and (5) on the one hand and (2) and (4) on the other. There are many ways in which these texts can appear to contradict each other. In particular, texts (2) and (3) can appear to present contradictory accounts of the object of metaphysics, or mutually consistent accounts of the objects of

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46 Rist 1989: 229-31; Gerson 1991. The authenticity of the book is now generally accepted; see Rist, p. 322 n. 10. Owens (1984) defends the current position of *Meta.* 2, but does not purport to show on philological or other grounds that it must be placed where it is.

47 The authenticity of book 11 is disputed; for some commentary see chapter 3, notes 16 and 18 below.

two different sciences. Alternatively, the theological conception of metaphysics in texts (1) and (3) may be downplayed, and the theological parts of (5) assigned to a different science, in order to allow (2), parts of (3), and (4) to be the parts of a single science.\(^4^9\)

As we have mentioned, the most comprehensive account of the various positions taken on these questions since the Greek commentators remains the first chapter of the 1978 edition of Owens's *Doctrine of Being*. For the present it will be sufficient to point out that the primary reasons for denying that these texts form part of a unified project are interpretations according to which their doctrines are inconsistent, rather than (as in the case of books 2 and 11) philological evidence that they do not belong together.\(^5^0\) We shall start with the hypothesis that at least texts (1)–(4) are parts of a single project and are broadly consistent in their conception of that project. A convincing account of how this is the case will tend to confirm this hypothesis. In showing how the *Metaphysics* uses and modifies the methodology of the *Posterior Analytics* we shall attempt to provide such an account.

\(^{49}\) This is perhaps the most common approach in recent interpretations of the *Meta*. Leszl (1975) dismisses (1) as early (pp. 111-12, 141-2), and takes (3) to describe and (5) to be part of theology as opposed to the science of being qua being (pp. 331-46, 527-40). (Text [3] becomes the part of ontology that describes the objects of the special sciences.) Irwin (1988) takes (1) to be only preparatory for the science of being qua being proper (pp. 159-61, 166-7), and bases his interpretation on (2), a very selective reading of (3), and (4). Although Irwin depends crucially on part of (5) to establish his theory of forms of individuals (*Meta*. 12.5, p. 253), there are no substantive references to its theological parts (i.e., chapters 6-10) in Irwin’s index locorum.

\(^{50}\) There is *prima facie* evidence that text (5) does not belong to the same project as texts (1)–(4), but the evidence is not decisive (see section I of chapter 9).
Chapter 1

Wisdom and Science

Our first task is to understand Aristotle’s conception of science and, more
generally, of human cognitive activity. Aristotle provides a general consideration of the
human cognitive dispositions (ἐξεικόν), or intellectual virtues, in book 6 of the Nicomachean
Ethics. We shall consider this treatment first, as well as additional material on wisdom
(σοφία) in the first two chapters of the Metaphysics. We shall then move on to Aristotle’s
ex professio account of science (ἐπιστήμη) in the Posterior Analytics, paying special
attention to the features of the APo. account of science which present difficulties for
understanding metaphysics as a science.

I

Human virtue, according to Aristotle, divides into two kinds, intellectual
(δινομητική) and moral (ήθική).1 In Nicomachean Ethics 1.13 Aristotle suggests that the
two kinds of virtue are related to two of the three kinds of soul outlined there: the
intellectual virtues belong to the part that is rational in itself, and the moral virtues to that
part capable of “listening to” and “obeying” reason.2 In NE 6.2 Aristotle divides the
rational part itself into two parts, each with its corresponding virtues or dispositions. The
“scientific” (ἐπιστημονικόν) part of the rational soul is concerned with those things
whose principles cannot be other than they are (ὅσων αἳ ἀρχαὶ μὴ ἐνδεχονται ἄλλως
ἐχειν, 1139a7-8) and the estimative (λογιστικόν) part with those whose principles are
ἐνδεχόμενα (a8). The function of both these parts is truth, and hence “the disposition
according to which each part attains truth in the highest sense is the virtue of that part”

1 NE 1.13.1103a4-7, 2.1.1103a14-15, 6.2.1138b35-1139a1. Unless otherwise noted all translations are
Apostle’s.
2 1.13.1102b13-end. This division is not explicitly stated but seems to be strongly implied; cf. Apostle’s
commentaries 13 and 15.
(1139b12-13). Attaining truth in theoretical matters is part of the function of the soul—indeed the function of the highest part of the soul—and hence a part of human ευδαμονία.

In chapter 3 Aristotle distinguishes the five ways in which the soul possesses truth: art (τέχνη), (scientific) knowledge (ἐπιστήμη), prudence or practical wisdom (φρόνησις), wisdom (σοφία), and intuition (νοῦς) (1139b16-17). Art and prudence are practical and consider things that can be otherwise; knowledge, wisdom, and intuition are of necessary truths. Aristotle begins with an outline of scientific knowledge (6.3), repeating points made at greater length in the Posterior Analytics. The objects of knowledge in the strict sense are those things that exist of necessity and are therefore eternal. Hence they are also ungenerable and indestructible. All knowledge can be taught and learned, and this occurs either by syllogism (συλλογισμός) or by induction (ἐπαγωγή). Induction moves toward the universal; syllogisms use universals, which are reached by induction, as their principles. Aristotle finishes by describing knowledge as a ἔξις ἀποδεικτική and referring us to the Analytics for a fuller characterization (1139b32-3). Perhaps surprisingly, Aristotle does not emphasize here the relation between syllogisms and demonstrations (ἀποδείξεις), which is made clear in APo. 1.2. Characteristically, Aristotle does not go into more detail than necessary for present purposes, and we are referred to a fuller treatment in the appropriate work. The present passage makes it clear that at the time of

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3 NE 1139b22-4; cf. APo. 1.2-8. Notice here (b24) a qualification not yet stated in the Posterior Analytics: those things that exist of absolute necessity (ἔξ ἀνάγκης ἀπλῶς) are eternal; whereas APo. 1.6 and 1.8 speak merely of "necessity." The reason for this difference would seem to be the introduction of hypothetical necessity as an explanatory tool in physics and (by analogy) in the practical sciences. On hypothetical necessity see Phys. 2.9.200a15-30, Pa 1.1.639b30-640a9; on the contrast between hypothetical and absolute necessity see especially GC 2.11.

4 Cf. APo. 1.1; also Meta. 7.17.1041b9-11 on their being no διδαξική about simples.

5 On there being no demonstration of definitions cf. APo. 2.2-10, on induction APo. 2.19. The APo. does not, however, state the connection between induction and the principles of syllogisms quite as forcefully as Aristotle does here, though see 1.1.71a5-11.

6 A demonstration is a συλλογισμὸν ἐπιστημικὸν (APo. 1.2.71b18) which meets the criteria set out in the rest of APo. 1.2. Aristotle uses the same συλλογισμός-ἐπαγωγή contrast in APo. 1.1 (71a5-11) as he does here in the NE.

writing of the *Ethics* Aristotle is still committed to a *Posterior Analytics* account of scientific knowledge.\(^8\)

The next two chapters (4 and 5) deal with art and prudence respectively, that is, with the practical *ἐξετάζει*\(^9\). As Aristotle emphasizes in chapter 5, they are concerned with "things whose principles may vary" (1140a33-4) and come about neither by necessity nor by nature (a14-15). The moving principle is in the agent rather than in the patient (a13-14); that is, it is in the human being who possesses prudence or art. Since metaphysics is not practical,\(^10\) we can pass over these chapters. Chapter 6 introduces intuition as the grasp of the principles (ἀρχαίοι) of scientific knowledge and of demonstration.\(^11\) Since scientific knowledge is universal and necessary, and it must have principles, the study of the principles can be neither a practical science (since they study things whose principles may vary) or scientific knowledge itself (since principles cannot be demonstrated). Hence there is another cognitive disposition, intuition, which is the grasp of universal and necessary principles (1141a7-8). Again Aristotle is substantially repeating the doctrine of the *Posterior Analytics*.

Of the five cognitive dispositions wisdom (*NE 6.7*) is possibly the most important for understanding Aristotle's metaphysical project, yet the one about which Aristotle is most given to vagueness. Aristotle mentions wisdom in his division of cognitive faculties at *APo. 1.33.89b7-9*, yet he refers the reader elsewhere for amplification and does not mention it anywhere else in the *Analytics*.\(^12\) Most of the substantive references to wisdom

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\(^8\) Attempts to establish a chronology for the Aristotelian corpus generally date both *Ethics* later than the *APo*. Rist dates the earliest parts of the *Ethics* (which would include *NE 6=EE 7*) ca 338. He takes *NE 6* to represent Aristotle's views during the composition of *Meta. 1-6* around 330-328 and until the composition of the *De anima* around 327, which (according to Rist) advances a new psychology (1988: 186). Both Rist and Graham (1987: 301-2) date the *APo. early*; see further section IV of our Introduction.

\(^9\) English translators sometimes use the phrase "practical science" or "productive science" for convenience, as Apostle does at *Meta. 982b11*. Note, however, that Aristotle avoids phrases like ἐπιστήμη πρακτική; strictly speaking, as is clear from *NE 6.3*, ἐπιστήμη is of its nature θεωρητική. *NE 6* generally uses ἐξετάζει to refer to the genus to which knowledge, art, etc. belong. Likewise, at *Meta. 6.1.1025b25*, Aristotle refers to practical, productive, and theoretical διανοών. However, cf. 1026a22 where ἐπιστήμη seems to be used loosely to refer to both theoretical and practical disciplines.

\(^10\) Explicitly, *Meta. 1.2.982b11-28, 6.1.1026a18-19*.

\(^11\) Cf. *APo. 2.19.100a8, b15*.

\(^12\) Except in an example at *APr. 1.36.48b12-14.*
are in NE 6, a roughly parallel treatment in Magna Moralia 1.34 (probably spurious), and books 1, 3, and 11 of the Metaphysics. Let us therefore start with NE 6.7 and then move on to the Metaphysics.

Aristotle begins chapter 7 with an analogy to the arts, where wisdom is attributed to those who are “most accurate in their field” (1141a9-10). This is only a restricted sense of wisdom, however; there additionally seem to be people who “are wise in general and not in a particular field [κατὰ μερός] or in some other qualified way” (a13-14). So wisdom, Aristotle concludes, is the most accurate of the sciences (ἀκριβεστάτη τῶν ἐπιστημῶν, a16), that is, the science that is most of all a science of first principles. The wise man will know not only that which follows from the principles, but also the principles themselves (a17-18). Wisdom, then, will be a combination of intuition and scientific knowledge, a sort of highest science dealing with the most honourable objects. As a combination of intuition and scientific knowledge it seems that wisdom can be partially demonstrative. If human beings were the best things in the cosmos, prudence and political science would be the highest science, but there are things that are far more honourable by nature than man, the most evident being the heavenly bodies. The pre-Socratics were considered wise because they investigated “things which are great and admirable and difficult to know and divine” (b3-8).

Aristotle presents substantially the same picture of wisdom in Meta. 1.1-2, though in greater detail and now with the object of defining the science he is about to pursue. He begins with a review of the human cognitive faculties, which largely follows APo. 2.19. “All men,” Aristotle writes, “by nature desire understanding [τὸ εἰδέναι].” Cognition

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13 Rist 1989: 189 and n. 51. In the event the Magna Moralia treatment does not add anything significant to NE 6.7, although there is greater emphasis on the partly demonstrative character of wisdom.
14 On accuracy cf. APo. 1.27 and the discussion on p. 24 below. Note also the use of κατὰ μερός in APo. 1.24.
15 ὁσπερ κεφαλὴν ἔχουσα ἐπιστήμη τῶν τιμίων, a19-20 (cf. b2-3); following Rackham’s interpretation of κεφαλὴν (1926: note c) rather than Apostle (commentary 4). Rackham’s interpretation or something like it is necessary to make sense of the next sentence and its γάρ connective (a20).
16 Cf. 6.6.1141a1-3: “it is possible for the wise man to have demonstration about some things” (ROT); Meta. 11.1.1059a29-34.
17 1141a35-b2, following Rackham and the OCT rather than Apostle. On φανερώτατα cf. perhaps Meta. 6.1.1026a18.
begins in sense-perception and progresses into memory (μνήμη) and experience (ἐμπειρία). Experience in turn is the basis for art (τέχνη). Art is closer to wisdom than experience, not because it is more capable of bringing about successful practice—in fact the opposite is often the case (981a13-15)—but because those who have art as opposed to mere experience know the cause, that is, the αἰτία or διότι (a24-31; cf. b5-6). The master artist, Aristotle implies, possesses something distinctively human that the manual labourers do not: “the latter are like certain inanimate things which act but do so without understanding their action, as in the case of fire which burns” (b2-3). Likewise art is closer to wisdom than experience because it moves further away from mere sensation and, unlike experience, is capable of teaching (b3-13). Sensation is not wisdom because it tells us nothing about the cause (b12-13). Once the arts were developed and men had sufficient leisure, it became possible to make causal inquiries that were not of strictly practical utility (as with mathematics in Egypt), and the theoretical sciences were discovered (b20-5).

Undertaken for the sake of knowing (τοῦ εἰδέναι Χάριν) and not for some instrumental purpose, the theoretical sciences are wisdom to a greater extent (μᾶλλον . . . σοφίαν) than the practical sciences (1.2.982a14-16). The point of this progression is to show that wisdom is the science of certain principles and causes (ἀρχὰς καὶ αἰτίας, 982a1-3).

In the next chapter Aristotle asks what principles and causes wisdom seeks, starting with certain common beliefs about the wise man. The wise man (1) knows all things in a way in which this is possible, (2) possesses knowledge that is difficult to obtain, and (3) has the most accurate knowledge of the causes and is most able to teach. Wisdom (4) is most properly said of sciences that are pursued for their own sake, and (5) is superior rather than subordinate, and gives orders rather than taking them (982a8-19).

Aristotle goes on to expand on these points. The requirement that the wise man somehow know all things points toward a universal science, a science which knows τὰ μάλιστα

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18 Strangely, this step is not actually taken in the progression in 1.1, but it seems necessary for Aristotle’s conclusion at 1.1.981b29-982a3. Cf. also 6.1.1026a22-3.

19 The word “principle” (ἀρχή) is wider than the word “cause” (αἰτία); “cause” is defined in terms of the four causes (Meta. 5.3), whereas a principle is anything “first” (5.1). At 5.1.1013a17 Aristotle indicates that all causes are principles. Aristotle frequently seems to use the words interchangeably, as he does here; and in Meta. 4.2 (1003b24) Aristotle uses “principle” and “cause” as examples of extensional equivalency. Perhaps some things, e.g., the principle of noncontradiction, are principles but not causes.
καθόλου (a24-5). It is a science of first principles, and is hence more accurate than sciences which posit additional principles (τῶν ἐκ προσθέσεως λεγομένων), just as arithmetic is more accurate than geometry (a25-8). Here Aristotle is faithfully following the account of accuracy (ἀκρίβεια) from the Posterior Analytics, where one of the ways that one science can be more accurate than another is by proceeding from fewer rather than additional principles. Units (the objects of arithmetic) are entities without position, whereas points (objects of geometry) have position as an additional principle (APo. 1.27.87a34-7; cf. 1.32.88a30-4).²⁰

Returning to the Metaphysics, wisdom is most able to teach because it knows the highest causes (982a28-9). It is sought for its own sake because it is knowledge of that which is intelligible in the highest degree, and these are the causes of other things and of their intelligibility (a32-b4). Wisdom is the most “architectonic” (ἀρχικοτάτη) of the sciences because it knows the final cause and good of everything, and the highest good in the cosmos (b4-7).²¹ Finally, it is divine science, both in the sense that God alone or most of all would have it; and because God, agreed by all to be a principle, would be the object of such a science (983a5-10).²² As in the Ethics, wisdom in the Metaphysics is the study of the first principles and highest causes.

The Ethics and the Metaphysics, then, draw substantially the same picture of wisdom, the latter with somewhat more detail than the former. How closely does this conception fit in with Aristotle’s conception of science in the Posterior Analytics and of the science of being qua being and first philosophy in Meta. 4 and 6? The NE makes it clear that Aristotle is assuming an APo. account of intuition, scientific knowledge, and demonstration for wisdom: wisdom is a combination of scientific knowledge and intuition and is demonstrative to the extent that it is scientific knowledge. Both accounts of wisdom, moreover, make use of the APo. conception of ἀκρίβεια, and the Meta.

²⁰ These passages will be discussed at length below.
²¹ Notice the Platonic themes being echoed at 982a32ff.: the Good is the highest cause of all things and of their intelligibility (Rep. 6.509b). Aristotle is vague here on what the highest good should be on his account, though clearly it is a reasonable expectation that it should be divine ὄφελος. Notice that in both the NE and the EE (1096a25, 1217b31) Aristotle suggests that ὄφελος may be the highest good in the category of φύσις.
²² Cf. NE 10.7.1177a19-21 with 1177b26-1178a8 and 10.8.1178b21-32; Meta. 12.1072b24-6.
explicitly refers to the contrast between a science with few principles and sciences \( \pi\rho\sigma\theta\epsilon\sigma\varepsilon\omega \). The *Meta.* invites us to see wisdom as a universal science, and hence prepares us for the *Meta.* 4 conception of metaphysics as a science of being qua being. However, it also prepares us to understand the first principles and causes sought by metaphysics not as the widest genera but as certain kinds of entities, particularly divine entities.\(^23\) It thus prepares us for the theological conception of the universality of first philosophy and the science of being qua being in 6.1.\(^24\) On the other hand, Aristotle’s account is vague on several crucial points. The references to the *Posterior Analytics* suggest a generic account of universality: the universals and the highest causes are the highest genera to which the \( \kappa\alpha\theta\'\ \alpha\upsilon\tau\omicron \) attributes belong (1.24.85b23-7). It is unclear how this model is to be applied in a science which does not study a genus (being is not a genus) and where the highest causes appear not to be genera but entities such as Aristotle’s God. Furthermore, in light of Aristotle’s rejection of a universal science in *APo.* 1.9 and his criticism of the search for the elements of all things in *Meta.* 1.9 (992b18-993a3), it is not clear how there can be a universal science in the first place.

Aristotle has remained vague throughout *Meta.* 1.1-2 and *NE* 6 on exactly what the objects of wisdom are. Although theology is clearly a part of wisdom,\(^25\) Aristotle is willing in some places to call physics and mathematics parts of wisdom also.\(^26\) *Meta.* 3.2.996b9 and 4.3.1005a34-b2 suggest that it is also the business of wisdom to investigate the axioms of demonstration. The references to wisdom elsewhere in the corpus are relatively few.\(^27\) The third aporia (995b13; cf. 1059a32) asks whether it is the business of wisdom to investigate all substances; and the book 11 versions of the first and fifth aporias frame them in terms of wisdom (1059a21, 33). However, wisdom is mentioned only once

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\(^{23}\) For highest genera as “first” and causes see *APo.* 1.24.85b22-7.

\(^{24}\) Cf. esp. 6.1.1026a22-32.

\(^{25}\) In addition to *Meta.* 1.1-2, wisdom is mentioned in a theological context (albeit in passing) at *Meta.* 12.10.1075b20.

\(^{26}\) *Meta.* 4.3.1005b1-2 (physics is a kind of wisdom but not primary wisdom); 11.4.1061b32-3 (physics and mathematics are parts of wisdom). (Book 11 may be spurious.) The *Meta.* 4.3 passage (physics is not the \( \pi\rho\omega\chi\nu\theta\varepsilon\omicron\alpha\) suggests a parallel to Aristotle’s distinction between metaphysics and physics as first and second \( \phi\lambda\theta\omicron\sigma\phi\omicron\alpha\). On first and second philosophy cf. 4.2.1004a2-9 (implicit rather than explicit), 6.1.1026a23-32, 7.11.1037a13-16.

\(^{27}\) There are no substantive references to wisdom in the *Analytics, Physics, De anima,* or the *Politics.* (The information in this paragraph is based on an electronic search of the *TLG.*)
in passing in the *ex professo* treatment of the science of being qua being in *Meta*. 4.1-2,\(^{28}\) and nowhere in the Aristotle's exposition of first philosophy as θεολογικὴ in *Meta*. 6.1. After *Meta*. 4.3 it does not occur again until the alternative version of the aporias in book 11, and apart from the single mention in 12.10 (again in passing, and apparently in response to the first aporia) it is never mentioned again. In other words, the only substantive discussion of wisdom in the whole *Metaphysics* occurs in book 1 and in the methodological aporias. The technical definitions of the science of being sought in the *Metaphysics* (4.1-2, 6.1) make no reference to wisdom, which is what one should expect if "wisdom" may also be used derivatively to refer to the other two theoretical sciences. Likewise, wisdom is essentially absent from the *Analytica*. It does not do any classificatory work in Aristotle's philosophy of science; rather, it is defined in terms of ἐπιστήμη and νοῦς. Like its derivative φιλοσοφία, σοφία is only semi-technical: it refers generically to the search for first principles in the theoretical sciences but must eventually be abandoned in favour of more technical formulations of the objects of these sciences.

Our investigation into Aristotle's use of wisdom or σοφία, then, reveals a generic concept used to denote investigation into the most divine things, which are the first principles. *Metaphysics*, it is suggested, is primary σοφία just as it is primary φιλοσοφία; and, it would appear, partakes in both scientific knowledge and intuition. Beyond that, Aristotle's conception of wisdom tells us relatively little about the object of metaphysics or the kind of science it is. Our next task must be to examine Aristotle's account of science in the *Posterior Analytics*, in order to determine what metaphysics should look like if it is an Aristotelian science.

II

In the space of about thirty Bekker pages the *Posterior Analytics* sketches out a comprehensive theory of scientific explanation. Although virtually everything in the *APo*. is potentially relevant for understanding how metaphysics is a science, several themes are of particular importance. First, in the *APo*. science is demonstrative: it demonstrates the

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\(^{28}\) Sophistry is only φαινομένη σοφία, 4.2.1004b19. Cf. SE 165a21-2, 171b29-34.
existence of the properties (πάθη) or per se attributes (καθ' αὑτό συμβεβήκοντα) of a subject genus using the common axioms and the definitions of the subject genus and its attributes as first principles. In the *Metaphysics* Aristotle will inquire how there can be a science not only of the per se attributes of substance but of substance itself.\(^\text{29}\) Second, a science must be universal and necessary, and the universality Aristotle has in mind in the *APo.* is that of univocal genera and species. How, then, can there be a science of being, if being is not a genus?\(^\text{30}\) Furthermore, in various places (*APo.* 1.9, 1.32) Aristotle argues against the possibility of a universal science, or of demonstrating all the attributes from a single set of principles. How is this reconciled with Aristotle's account of wisdom (*Meta.* 1.2) and first philosophy (*Meta.* 6.1) as a universal science? The *Posterior Analytics* also contains doctrine that can help us understand Aristotle's project in the *Meta.* if these difficulties can be resolved. In *APo.* 2.1-2 Aristotle describes scientific inquiry as a search for definitions giving the whatness (τι ἐστι) and the cause (διὰ τι, αἰτία, διότι) of the thing defined. This suggests that the investigation into the nature of being and substance should also be an investigation into its causes. Further, the material on accuracy and additional principles (*APo.* 1.27, 1.32) may help us understand how metaphysics can be universal without being a universal science of the kind criticized in *APo.* 1.9 and (implicitly) in *Meta.* 1.9.

The remainder of this chapter, then, is devoted to examining the passages of the *APo.* that are particularly relevant to understanding metaphysics as a science. There are many controversies concerning the interpretation of the text, and we shall have to assume some interpretations in cases where other interpretations are possible. A particularly difficult problem, which has been the focus of much recent scholarship, concerns the mechanism for deducing the per se attributes of a subject genus from that genus. A traditional interpretation has made two kinds of predication described in *APo.* 1.4 (what have come be called type [1] and type [2] predications) the basis for proving per se attributes. In the first kind, the predicate is part of the definition of the subject, in the

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\(^\text{29}\) *Meta.* 3.2.997a25-34, 11.1.1059a29-34.

\(^\text{30}\) *Meta.* 3.3.998b22-7; cf. 3.4.1001a29-b1.
second kind the predicate is defined in terms of the subject. In particular, type (2) \( \kappa \alpha \theta' \) \( \alpha \upsilon \tau \) predications show how a property can belong necessarily to a subject without being part of its definition, and hence how there can be "accidents" (\( \sigma \upsilon \mu \beta \varepsilon \hat{\eta} \kappa \omicron \upsilon \alpha \)) that belong necessarily to a subject, such as triangles' having angles equal to two right angles (="2R"). This seems to be confirmed by Aristotle's own statement in \( APo. \) 1.6 that demonstrations proceed from either type 1 or type 2 \( \kappa \alpha \theta' \) \( \alpha \upsilon \tau \) predications. Nevertheless, as recent work in the \( APo. \) has pointed out, there are difficulties with this interpretation. It is not clear, for instance, how the property 2R is somehow defined in terms of triangularity or could be arrived at from something that is. Nor are Aristotle's examples in 1.4 (73a38-b1) entirely reassuring—indeed some have taken these to be differentia rather than per se attributes. Most recently, Owen Goldin has attempted to show how per se attributes can be demonstrated without making any use of type 2 \( \kappa \alpha \theta' \) \( \alpha \upsilon \tau \). We shall be largely following the traditional interpretation because, despite the difficulties in putting it into practice, it seems to be the interpretation with the most support from Aristotle's text. The problems we are discussing, however, arise in much the same way independently of the interpretation one follows.

31 Barnes (1994\textsuperscript{2}: 113-14) calls this the view of the "older commentators": see Kullmann 1974: 182-3, Inwood 1979, Apostle 1982: comm. 2 \emph{APo.} 1.6. A modified version of the traditional interpretation is accepted by McKirahan (1992: 87-92). Barnes argues against the traditional interpretation with several counter-examples (p. 114). I am not convinced by his counterexamples: (1) it is not clear that "man is capable of understanding" is not a per se predication (indeed it may be only trivial reformation of the definition of man as a "rational animal"); and (2) in the strict sense of per se (\( APo. \) 1.4.73b28-32), being deciduous is per se not to vines but to the wider genus of deciduous trees.  

32 \emph{Meta.} 5.30.1025a30-2.  

33 \emph{APo.} 1.6.74b5-12. Note also, for instance, \emph{Meta.} 7.5 where it is assumed that attributes that are \( \kappa \alpha \theta' \) \( \alpha \upsilon \tau \) to certain subjects must be defined in terms of them (note esp. 1030b16-26).  

34 Notably Michael Ferejohn (1991: 96-9). Another difficulty is Aristotle's association of type 2 \( \kappa \alpha \theta' \) \( \alpha \upsilon \tau \) with opposites: it is not clear whether he thinks that all such predications involve opposites; nor is it clear how demonstrations from these sorts of premises will work. See Barnes (1994\textsuperscript{2}: 117-18) and McKirahan (1992: 89-90).  

35 Goldin 1996. Note that neither 1.4.73a37-b3 nor 1.6.74b5-12 receive substantive discussion (see his index locorum).
Aristotle begins the *Posterior Analytics* with the statement that all teaching and learning proceed from previous knowledge (προϋπαρχόντες γνώσεως, 71a!-2). This can occur either by induction or by deduction, the first moving from the particular to the universal and the second from definitions which are understood (παρὰ ξυνεύρεται) to conclusions (71a!6-11). It is deductions (or syllogisms) that are of interest for us: Aristotle implies that all sciences are demonstrative in the *APo.*, but appears to deny that metaphysics is wholly demonstrative in the *Meta.*

To have knowledge (ἐπιστήμη) of something in the strict sense is to know (1) the cause through which the thing (or fact) exists, (2) that it is the cause of that thing, and (3) that this could not be otherwise (APo. 1.2.71b9-12). This is to have a demonstration (ἀπόδειξις), that is, a scientific syllogism (συλλογισμός ἐπιστημονικός) of that which we know (b16-18). Demonstrative knowledge must be from principles that are (1) true (ἐξ ἀληθῶν), (2) primary (πρώτων), (3) immediate (ἀμέσων), (4) more known (γνωριμωτέρων), (5) prior (προτέρων), and (6) causes of the conclusion (αἰτίων τοῦ συμπεράσματος, b20-2). These criteria ensure that the principles from which the conclusion is proved are “appropriate” (οἰκεῖοι) to the conclusion (b22-3). A syllogism that meets these criteria is a demonstration; if it fails to meet these criteria, it remains a syllogism but cannot be a demonstration because it does not produce ἐπιστήμη (b23-5).

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36 Compare the use of διδασκαλία and μάθησις here to *NE* 6.3.1139b25-6 and Aristotle’s characterization of the wise man as διδασκαλικότερον and wisdom as διδασκαλική (*Meta.* 1.2.982a13, a28ff.) because it knows the causes. Barnes emphasizes Aristotle’s talk of teaching and learning in order to argue that the *APo.* essentially presents only a method of instruction; Barnes 1969: 77-9. He seems to ignore, however, the fact that Aristotle’s use of διδασκαλία in *NE* 6 and *Meta.* 1.2 suggests the nature of the subject matter determines whether and how the science of it is taught. Cf. also note 44 above.

37 *Meta.* 4.4.1006a5-11, 6.1.1025b10-16.

38 Aristotle is vague about what he is referring to here; it becomes clear in 1.7 and 1.10 that he is referring to per se attributes.

39 Aristotle leaves open the possibility of a ἐτερος . . . τοῦ ἐπιστάσθαι τρόπος, 71b6. It is not clear exactly to what this refers: possibly to induction toward the principles (ἐπαγωγή, cf. *APo.* 1.1.71a5-6 and *NE* 6.3.1139bb26-8 on the two ways of teaching and learning). Cognition of principles itself is intuition (νοῦς), and it seems unlikely that Aristotle would call it ἐπιστήμη given the contrast he draws between the two in *APo.* 2.19 and *NE* 6 (*pace* Apostle, commentary 8).
The first criterion, that the principles be true, is fairly straightforward: “nonbeing cannot be known” (b25-6). It would seem to be a necessary component of any account of knowledge. The other five criteria are less obvious, and are highly instructive about the nature of Aristotle’s account of science. In a syllogism or series of syllogisms that adhere to these criteria, the order of proof will follow the order of causality in nature. The syllogisms will start from simple and indemonstrable principles (first premises) and conclude to the existence of effects whose existence can be demonstrated from, and is causally dependent on, these principles. The principles must therefore be immediate (ἄμεσον); that is, there must be no middle term (μέσον) through which they could be demonstrated. To know something demonstrable is to have a demonstration of it. Therefore, if a demonstration contains undemonstrated but demonstrable first premises, the premises will not themselves be known and the demonstration will not yield knowledge (b26-9). The most significant criterion, and the one which most clearly distinguishes Aristotelian ἐπιστήμη from “knowledge” as it has been used since Descartes, is that the premises be causes of and hence prior to the conclusion. We think we know something, Aristotle writes, when we know its cause (b30-1). In a demonstration in the strict sense the conclusions will follow from the premises because the premises are the causes of the conclusion. Therefore the first premises must be “primary,” which is to say that they are not only immediate and true but are also the first causes of that thing (1.2.72a5-7, 1.9.75b37-40). This is the same as to say that the premises must be appropriate for the conclusion (ibid).

The last of Aristotle’s requirements is that the premises be “more known” (γνωριμώτερα) than the conclusion. In order not to mistakenly attribute to Aristotle the virtually impossible view that the causes of things are more evident to us than the things

40 Apostle italicizes “knowledge” and its cognates when they translate ἐπιστήμη and its cognates. We shall retain this convention when quoting from his translation.

41 Aristotle rejects the possibility that there are no such principles (and hence no ἐπιστήμη), as well as the possibility of infinite and circular demonstrations, in APo. 1.3 and 1.19-23.

42 On this contrast see especially Burnyeat 1981. Burnyeat argues that for Aristotle ἐπιστήμη is better translated as “understanding” than “knowledge,” since the emphasis is on causal explanation rather than justification and certainty. Certainly Burnyeat is right to emphasize the role that explanation plays in making the Greek (and particularly the Aristotelian) conception of ἐπιστήμη different from the post-Cartesian concept of knowledge.
themselves, it is important to appreciate his distinction between two ways in which something can be prior or more known, either by nature (τῇ φυσεῖ) or to us (ἡμῖν, πρὸς ἡμᾶς, 71b33-72a5).\textsuperscript{43} That which is prior and more known to us is the particular, which is closest to sensation; that which is more known by nature, or more known ἀπλῶς, is further away from sensation and more universal. The principles of a demonstration are more known by nature, and their effects are most known to us.\textsuperscript{44}

A demonstration, then, will prove the existence of an effect through its causes, and a demonstration in the strict sense must ultimately be from first causes. Just by itself this leaves open a wide range of possibilities for the structure of demonstrations. In effect, however, Aristotle is much stricter about what kinds of principles appear in demonstrations and what kinds of effects demonstrations prove to exist. As Aristotle explains in \textit{APo.} 1.7 and 1.10, there are three elements in any given demonstration. First, there is the subject genus (τὸ ὑποκείμενον γένος, cf. 75a42-b1), which is posited to exist and whose per se attributes (καθ' αὐτὰ συμβεβήκοτα, 75b1; καθ' αὐτὰ παθημάτων, 76b13)\textsuperscript{45} the science investigates. Each science is one by having one subject genus (1.28.87a38-9), whose signification it assumes (76b5; cf. 1.1.71a15-17). Second, there are the per se accidents which are demonstrated to belong (ὑπάρχει) per se to a subject genus. The signification of a per se attribute is assumed as a premise, but its existence (τὸ ὅπτι)—that is, the fact that it belongs to the subject genus—is the conclusion of a demonstration (75a40; 76a31-6, b6-11).\textsuperscript{46} Finally, there are the common axioms (ἀξιώματα), such as the principle of contradiction, which are used by all of the sciences to the extent that they are useful in each (75a41-2; 76a37-b2, b14-15).\textsuperscript{47}

Aristotle treats the same topic from a slightly different angle in \textit{APo.} 1.2 and in 1.10. A principle or first premise can be either a thesis (θέσις) or an axiom (ἀξίωμα). We

\textsuperscript{43} On this distinction see esp. \textit{Phys.} 1.1.184a16-18; \textit{Meta.} 7.3.1029b3-12; \textit{DA} 413a11-13.

\textsuperscript{44} Recall that one of the characteristics of wisdom is its concern with objects that are more known in themselves and furthest from sensation; \textit{Meta.} 1.2.982a23-b1. Notice that the μάλιστα ἐπιστήμη (b1) are nevertheless χαλκεώτατα . . . γνωρίζειν τοῖς ἀνθρώποις (a24), a statement that makes sense only if one keeps this distinction in mind.

\textsuperscript{45} Cf. τὰ ὑπάρχοντα καθ' αὐτά, 76b4. This seems to be used with a wider sense than the other two expressions: at 1.6.74b6-7 καθ' αὐτά ὑπάρχοντα is used to refer to both the elements of the definition (type [1] per se from \textit{APo.} 1.4) and the per se attributes (type [2] per se).

\textsuperscript{46} Cf. \textit{APo.} 1.1.71a11-17, 1.2.71b29-33.

\textsuperscript{47} Cf. \textit{APo.} 1.11.77a10-35; \textit{Meta.} 4.3-8.
have already seen the axioms discussed in *APo*. 1.7: once again, they are common (*κοίνα*) to all sciences. Theses, on the other hand, are proper (*δικά*) to a given science (72a14-18, 76a37-b11) and divide into two kinds. A hypothesis (ὁπόθεσις) states that something is or is not the case (τὸ ἐίναι τι ἢ τὸ μὴ ἐίναι τι), whereas a definition (ὅρισμός) does not (72a18-21). The definitions state not *that* something is (ὅτι ἐστι), but *what* some (existent) entity is (τί ἐστι). Aristotle argues at length in *APo*. 2.3-10 that there is never a demonstration of a definition or of a τί ἐστι. The conclusion of a demonstration is the existence (ὅτι) of a per se accident, which is shown to belong to the subject genus by means of the common and proper principles. Demonstrations assume the τί ἐστι of the subject genus and per se attributes, and the ὅτι of the subject genus, in order to prove the ὅτι of the per se attributes.

The *Posterior Analytics* contains relatively few complete examples of demonstrations. For the purposes of illustration let us use a demonstration based on Aristotle’s demonstration of the existence of eclipses in *APo*. 2.8-10:

1. An eclipse is an interposition of an opaque object between a light source and a reflecting object (at certain angles).
2. This condition (interposition...) ὑπάρχει to the reflecting object.
3. An eclipse ὑπάρχει to the reflecting object.

The demonstration proves that a reflecting object may be eclipsed. It follows the form of an Aristotelian syllogism, where two extreme terms (eclipse, reflecting object) are...

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48 The parallel passage at 1.10.76b23-77a4 is more complex and perhaps not entirely consistent with *APo*. 1.2. For present purposes the level of detail in the 1.2 passage is sufficient.

49 *APo*. 1.1.71a13, 1.2.72a21-4, 2.10.93a29. Cf. τί σημαίνει (used with the same meaning): 1.10.76a32, b7. There is no definition of non-beings: *APo*. 2.7.92b28-32; cf. *Meta*. 7.4.1030a7-17 (noting the allowance that Aristotle makes for πρὸς ἐν application of τί ἢν ἐίναι to accidents at b3).

50 The principles appear to be arrived at through ἐπαγωγή and are objects of νοῦς, which is the cognitive disposition that grasps the principles (ἀρχαί) of ἐπιστήμη and demonstration (*APo*. 2.19.100a8, b15; *NE* 6.6). On ἐπαγωγή see *APo*. 2.19 passim. Some interpreters have argued that there is a “syllogism of the essence” in a qualified sense; see especially Mansion 1976. Landor (1985) presents compelling arguments against this interpretation.

51 *APo*. 1.7.75a40-1, 1.10.76a33-6, b6-11.

52 It is not clear what room this makes for type 2 καθ' αὐτό ἡ predication (see p. 34 below), which seem to be neither statements of τί ἐστι nor statements of the existence of a subject genus, yet are clearly indemonstrable first premises of demonstrations (1.2.72a20, 1.6.74b8-10). Perhaps Aristotle’s summary here is defective.

53 We are leaving aside the question of the modality of the demonstration. Certainly reflective objects are not always eclipsed, because premise (2) does not always obtain. See *APo*. 1.8 for Aristotle’s brief discussion.
connected through a middle term (interposition...), which is the definition of an eclipse. The middle term also expresses the cause of eclipses (i.e., interposition), and so the premises are the causes of the conclusion. The subject genus for this demonstration is "reflecting object," whose existence and definition is assumed. The first premise is the definition that identifies eclipses with a certain kind of interposition. The second premise, if immediate, is a hypothesis: it states that the condition defined in the first premise belongs to the subject genus. If it is not immediate, then it will be demonstrable from more general principles, just as the existence of lunar eclipses is demonstrable from the conclusion of this demonstration. Together the two premises allow us to conclude that eclipses belong as per se accidents to reflecting objects. Eclipses are defined in terms of reflecting objects; so the fact becomes clear once we understand what an eclipse is and what a reflecting object is.

To recapitulate, scientific knowledge according to the APo. is demonstrative knowledge, and demonstration proceeds from definitions and hypotheses to prove that per se attributes belong to subject genera. The middle term of the demonstration reveals the cause of the attribute's belonging to its subject; so the demonstration effectively gives a scientific explanation of the existence of the attribute. The existence and nature of the subject genus are assumed. In the Metaphysics, however, this account of demonstrative science emerges as a problem. It is the basis for the fifth aporia in book 3:

Further, is our investigation concerned only with substances or also with their attributes? I mean, for example, if solids and lines and planes are substances, it is

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54 The identification of the definition, the middle term, and the cause does not become explicit until APo. 2.2. See our discussion below.
55 There are reasons to think this premise is immediate: it would be type 2 καθ' α' and commensurately universal (eclipses are defined in terms of opaque and reflecting objects). See the discussion of καθ' ατό (APo. 1.4.73a37-b3) and commensurate universality, p. 34 below. As we have just noted, it is not clear that Aristotle's account of the elements of a demonstration in 1.7 and 1.10 makes adequate room for these kinds of statements, but they do seem necessary if anything not already part of the τά ἔσχη of the subject genus is to be proved to belong to it.
56 There are many questions that one might raise about this demonstration. For instance, how is the definition of "reflecting object" (the subject genus) relevant to the demonstration? Its relevance is explained if the relation between eclipses and reflecting objects is that of a type 2 καθ' ατό. In this case, however, should not the definition of the subject genus somehow explicitly be part of the demonstration? Furthermore, why is "reflecting object" rather than "opaque object" the subject genus? Is it possible for eclipses to be demonstrated for both genera? Aristotle does not raise these questions in the APo., and his examples of demonstrations do not provide sufficient information to answer them.
the concern of the same science to know these and their attributes... for each genus, or of another science. If of the same, then the science of substances, too, would be demonstrative science; but it seems that there is no demonstration of whatness \( \tau \iota \varepsilon \sigma \tau \iota \). (997a25-32).

In *Meta*. 6.1 the objection is phrased in terms of there being no demonstration of substance (\( \sigma \omega \sigma \iota \alpha \) or \( \tau \iota \varepsilon \sigma \tau \iota \) (1025b14), and book 11 raised the aporia as an inquiry into whether wisdom deals with attributes or only with substances, again noting that there is no demonstration of substance (1059a29-34). The attributes of substances can be demonstrated and explained, but not, it appears, substances themselves. On the other hand, substance is the primary instance of being, so the science of being qua being will be above all a science of substance. If we are to understand how metaphysics is a science, we must determine whether Aristotle accepts the objection raised by the aporia and, if so, how there can be scientific explanation of substances if this explanation cannot take the form of a demonstration.

### IV

The second problem raised by the *Posterior Analytics* is its account of universality as generic univocity. In order for there to be \( \varepsilon \pi \iota \sigma \tau \iota \mu \eta \) of something in the strict sense, that thing, as we have seen, cannot be otherwise. Therefore, the fact of which we have \( \varepsilon \pi \iota \sigma \tau \iota \mu \eta \) must be demonstrated from premises (mediate or immediate) that cannot be otherwise. Aristotle considers from what kinds of premises demonstrations must proceed in *APo*. 1.4-6. The solution is that the premises must be essential or per se (\( \kappa \alpha \theta ^{'} \alpha \nu \tau \tau \iota \) predications. Predications that are per se are necessary, and thus can serve as premises for demonstrations (1.6.74b5-7). As we have argued, there are two kinds of predication that

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57 Both whatness (\( \tau \iota \varepsilon \sigma \tau \iota \)) and substance (\( \sigma \omega \sigma \iota \alpha \)) are equivocal across the categories; here however, Aristotle is referring to substance in a primary sense, i.e., as \( \upsilon \pi \kappa \varepsilon \iota \mu \varepsilon \nu \nu \nu \nu \nu \) as opposed to attributes.


59 One should not, of course, forget the role of \( \nu \rho \varsigma \), which is the grasp of principles and presumably also of the principles of substances. It seems unlikely, however, that whole science of substance can be subsumed under \( \nu \rho \varsigma \); although the principles of substances will be grasped by \( \nu \rho \varsigma \), substances do not seem to be identical to their principles.
can be per se in this way.\textsuperscript{60} The first way is by being an element in a definition or whatness (τι ἐστιν): animal is per se to man in this way, as is line to triangle (1.4.73a34-6; cf. 1.6.74b7-8). The second is by being included in the definition of something else. Oddness and evenness are per se to number because they are defined in terms of number (a36-b3): such per se predications are often such that it is necessary that one or the other of two opposites (and presumably any intermediaries in between) belong to the subject genus (1.4.73b18-24, 1.6.8-10). Mathematics, for instance, can prove that any number must be either odd or even. Things that are per se in neither of these ways are accidents (1.4.73b4-5, 1.6.74b11-12) and cannot be objects of scientific knowledge.\textsuperscript{61}

What ensures the necessity of the premises of a demonstration, then, is the fact that they are per se predications of either the first or the second type. Such predications are also “because of themselves” (δι’ αὐτό); that is, as we shall see when we examine \textit{APo}. 1.24, the \textit{cause} is to be found in the definitions of the terms of the predication (74b18). Predications that are καθ’ αὐτό in the strict sense will also be predicated qua that subject (η’ αὐτό, 73b28-9) and are hence universal (καθόλου). That is, the predicate will belong to \textit{any random instance} of the subject and \textit{primarily} to that subject (b32-3): it must belong to all instances of the subject, and the subject must be the widest genus to which it belongs. Having angles equal to two right angles (="2R") belongs to any random instance of an isosceles triangle, for instance, but not primarily to isosceles triangles. The genus of triangles is prior to, and wider than, that of isosceles triangles; and the property 2R also belongs to any random triangle, whether isosceles or not.\textsuperscript{62} This property belongs primarily and η’ αὐτό to triangles; it belongs to isosceles triangles because isosceles is a species of triangle. As we shall see, in \textit{APo}. 1.24 Aristotle argues that attributes should be demonstrated to belong to their subjects universally, that is, to the subjects to which they belong καθ’ αὐτό and η’ αὐτό. Thus having angles equal to right angles will be demonstrated of triangles rather than polygons or isosceles triangles; heaviness and

\textsuperscript{60} \textit{APo}. 1.4 introduces four kinds of per, but \textit{APo}. 1.6 uses only the first two of these. However, cf. Ferejohn (1991: 109-30), who appeals to type (4) per se to explain per se attributes.

\textsuperscript{61} In \textit{APo}. 1.30 Aristotle allows for demonstrations of what occurs for the most part (ὅς ἐπὶ τὸ πολὺ). It is not clear how such demonstrations would fit into this categorization.

\textsuperscript{62} Cf. \textit{APo}. 1.4.73b32-74a3, 1.5, 1.24.85b4-86a30, 2.13.
lightness of things having the four elements rather than of being (qua being) or of living things; and the alternation of proportionals to quantities qua quantities rather than to lines, numbers, etc. (cf. *APo. 1.5.74a17-23*).

Up to this point Aristotle has explained how it is possible for certain predications to be necessary. In order for them to be part of scientific knowledge, however, it must be possible to predicate the same definitions, hence the same *per se* relations, of many things, i.e., of all the instances of a kind. What makes this possible, as Aristotle emphasizes in *APo. 1.11*, is univocity: the same thing is predicated of many instances with the same meaning:

There need not be any Forms, or some one thing apart from the many [ἐν τὶ παρὰ τὰ πολλὰ], in order for there to be demonstrations. It must, however, be true to say that one thing holds of many [κατὰ πολλῶν αληθές εἶπεν]. For there will be no universals [οὐ γὰρ ἔσται τὸ καθόλου] if this is not the case; and if there are no universals there will be no middle terms, and hence no demonstrations. So there should be something which is one and the same and which, without being equivocal, is said of many things.63

We have seen that the definitions of the subject genus and the attributes serve as principles—in effect, as middle terms—of demonstrations. Unless they can be predicated univocally of many instances there will be no middle terms and hence no demonstrations. The requirement of univocity is emphasized again in connection with universality at *APo. 1.24.85b4-22* and *2.13.97b26-39*. Aristotle maintains here that there need not be anything separate from individual instances of the subject and its attributes to make universality possible, although he does not explain how it is possible to predicate one thing of many individuals in the absence of Forms or ἐν τὶ παρὰ τὰ πολλὰ. One of the principal differences between the *APo.* and the *Metaphysics*, as we shall see, is that the latter is concerned with how universality is possible in the absence of Platonic Forms.

The specifically causal role of the universal is made clear in Aristotle's argument for the superiority of universal (καθόλου) demonstrations (that is, those that demonstrate that an attribute belongs universally and primarily to a subject) to particular (κατὰ μέρος)

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63 *APo. 1.11.77a5-9*, combining Barnes's and Apostle's translations, with slight modifications.
demonstrations. Aristotle identifies the universal and the cause with the widest genus to which the attribute belongs, that is, the subject genus to which it belongs καθ’ αὐτό. The easiest way into Aristotle’s point is perhaps via the second of the two arguments he presents at 85b23-7 and 85b27-86a3. In causal investigations we continue the investigation until there is no longer any additional cause of the thing investigated (ὅταν μὴ ἦν ὃτι τι ἄλλο, 85b28-9). This is the end (τέλος) and limit of our investigation. A simple example in the order of final causality can be taken from human action: for instance, someone works to earn money in order to pay off his debt, and that in turn in order not to act unjustly (b30-5). Just as we seek the ultimate cause in the case of final causality, so it is with other causes: we know something in the highest degree ὅταν μηκέτι ὑπάρχει τοῦτο ὃτι ἄλλο. The cause in the case of the demonstrable subject-attribute predications we have been examining is ultimately to be found in the definition of the subject genus to which the attribute is καθ’ αὐτό. It is true but insufficient, for instance, to say that an isosceles triangle has exterior angles equal to four right angles because it is a triangle. It is insufficient because the reason that a triangle has four right angles is that it is rectilinear plane figure. It is only at “rectilinear plane figure” that we reach the point where there is no further cause for the attribute’s belonging to the subject. We have reached the subject to which the attribute belongs primarily and καθ’ αὐτό; the point at which our knowledge is universal (καθόλου). The universal demonstration is better because it is only when we know something universally that we have reached its ultimate cause.

Aristotle is vague on exactly how the mechanics of the causal relation here should be understood. The reason for the attribute’s belonging to the subject is ultimately found, Aristotle implies, in what the subject is, otherwise put, in its whatness or τί ἐστι. Aristotle seems to leave out of consideration here the whatness of the attribute, whereas this seems to be highly significant in his other examples. Moreover, if the attribute’s necessity is based on a type (2) καθ’ αὐτό predication, then the whatness of the attribute should be

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64 “Particular” as a translation of κατὰ μέρος should be distinguished from its more usual use as a translation of καθ’ ἐκαστον, which refers to the individual of which there is no scientific knowledge. 65 Cf. APo. 2.8.93a29-b14 (the eclipse example).
highly significant: necessity is generated in these cases because the subject appears in the definition of the attribute. Making allowances for these necessary subtleties, it remains the case that for Aristotle the whatness of the subject to which the attribute belongs universally is the cause, or part of the cause, of that attribute's belonging to it. Aristotle phrases the same point differently in his first argument:

Again, a demonstration is a syllogism which shows the cause or the why, and the universal is a cause to a higher degree [αἰτιώτερον], for the subject in virtue of [i.e., qua] which an attribute exists is the cause of that attribute's belonging to the subject, and the universal is the first [subject to which the attribute belongs] and is therefore the cause [τὸ δὲ καθόλου πρῶτον αἰτίον ἢρα τὸ καθόλου]. (85b23-6)

Aristotle's Greek here is highly elliptical—even the fact that he is talking about subjects as causes has to be inferred from the immediate context and that provided, for instance, by APo. 1.4. Nevertheless, taken with the argument already discussed, the point of this argument is clear: the cause of an attribute's belonging to a subject genus is to be found in the subject genus to which the attribute is καθ' αὐτό. Once again, this universal is not something existing apart from particulars: it is necessary only that one be able to predicate the same content univocally of all the particulars in a subject genus (85b18-22).

Nevertheless this account of causality and universality cannot be universality that makes possible the science of being in the Metaphysics. If being is not a genus, metaphysics must find another way of generating this universality. Furthermore, in the very different context of Meta. 7.13.1038b1-9, Aristotle will deny that a universal, understood as one thing said of many, can be a cause. Metaphysics will require a significant modification both to the notion of universality and to the notion of causality.

Let us recapitulate the salient features of Aristotle's account of universality in the Posterior Analytics. Scientific knowledge is necessary, and for that reason must proceed.

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66 Perhaps Aristotle ignores the whatness of the attribute here because it is ultimately the presence of the subject in the definition of the attribute which is the cause of the attribute's belonging necessarily to the subject. How this obtains in this case, however, is unclear.

67 Slight modifications to Apostle's translation. The Greek from "for the subject..." reads: ὅ γὰρ καθ' αὐτὸ ὑπάρχει τι, τοῦτο αὐτῷ αἰτίον τὸ δὲ καθόλου πρῶτον αἰτίον ἢρα τὸ καθόλου.

68 Cf. APo. 2.14.
from premises that are καθ' αὐτό predications. Predications that are καθ' αὐτό in the strict sense are universal (καθόλου): they are true primarily of that subject and of any random instance of that subject. Attributes that belong to the subject universally belong to it qua that subject and because the subject is what it is. The universal in this sense, then, is the cause of the attribute's belonging to the subject. In order to be universal the predication must be made univocally of all the instances: if an attribute belongs to a subject because of what the subject is, this “what” must be identical for all instances of the subject. The cause is in what the subject (and presumably also the attribute) is, but this “what something is” has no existence apart from individual instances of that kind of thing. Unlike Plato’s positing of Forms to explain being and becoming in the sensible world, Aristotle’s search for the cause here is not a search for explanatory entities apart from the subjects and attributes themselves. As is well known, this account of universality presents serious difficulties for understanding metaphysics as a science. In Meta. 3.3, Aristotle argues that being cannot be a genus, and hence that a science of being cannot be the science of the attributes of a univocal genus. It is generally accepted that Aristotle’s solution to this problem is πρός ἐν equivocity. How a πρός ἐν science of being is possible will be one of the major points at issue in our treatment of the Metaphysics.

V

In Meta. 1.2, as we have seen, Aristotle calls wisdom “universal ἑπιστήμη,” a science that “somehow knows all things” and in particular τὰ μᾶλλον καθόλου (982a22-5). This appears to conflict with APo. 1.9 and 1.32, which argue against the possibility of a universal science. If we are to understand how metaphysics is a science, then, we must determine whether and how it can withstand Aristotle’s arguments against the possibility of such a science in the APo. In particular, we must understand what kind of universal science Aristotle rules out in these passages. Although Aristotle will rule out a science that is universal in the sense of being a science literally of all things or of all their principles, he seems to leave open the possibility of a science that is universal not because

69 Cf. Phaedo 101C.
the principles it studies are sufficient to explain all things, but rather in the sense that it studies principles of a phenomenon found in all things and hence principles that are a necessary part of the complete explanation of any given thing. Certainly there is no notion of such a science in the Posterior Analytics: the axioms do not have a science of their own but are common to all sciences by analogy. Further, our purpose here is not to show that metaphysics is actually a universal science of this kind—this will be a task for later chapters—but rather to indicate how the APo. doctrine of universality may allow for this kind of universal science.

The argument against a universal science is approached in APo. 1.9 via an argument that the proper principles (ιδιαίς ἀρχαίς) of each science cannot be demonstrated. If it were possible to demonstrate these principles, there would eventually be principles that were principles of all things, and the science of these principles would be κυρία πάντων (76a18) and so the basis for all the other sciences. That is, there would be a universal science from whose principles the conclusions of all the other sciences could be demonstrated. If this is to be possible, at some point demonstrations must “cross over” from the genus of the universal science to establish conclusions about the subject genera of the particular sciences. What rules out this prospect is Aristotle’s argument in APo. 1.7 (alluded to at 1.9.76a22-5) that there can be no such crossing over (μεταβοίνειν) from the genus of one science to another.

As we have seen, every science has three elements: the subject genus, the per se attributes, and the common axioms that are used by all the sciences but do not appear in their demonstrations (1.7.75a39-b2). If two sciences are concerned with different genera, [a demonstration in one science cannot be used to investigate the per se attributes of the genus of the other science]. For instance, one cannot apply [ἐφαρμόσα] an arithmetical demonstration to the essential attributes belonging to magnitudes, unless magnitudes are numbers; and the manner in which one may make [such an application] in some cases will be discussed later. Thus an arithmetical

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70 APo. 1.10.76a37-41. At 1.11.77a26-35 Aristotle assigns the study of the common axioms to dialectic, which is not scientific, however, and does not concern itself with a particular genus. In the Meta., of course, the axioms do receive a science of their own (Meta. 4.3-8).
71 On the common axioms' not appearing in demonstrations see APo. 1.11.77a10-25.
demonstration is always concerned with its own genus, and similarly for
demonstrations in other sciences. So it is necessary that either (a) the genus be the
same without qualification or (b) the genera be the same in some respect, if a
demonstration is to pass over from one genus to another. (1.7.75b3-9)

The reason for this lies in the nature of the per se predications that generate scientific
necessity. As we have seen, per se attributes belong necessarily to a subject genus because
of what the subject genus is: what belongs per se to an entity is either part of its definition
(type [1] per se) or defined in terms of it (type [2] per se). Predications that are not per se
in either of these senses are accidental and cannot be studied scientifically. Further, we
have seen that demonstrations should be made from the genus to which the attribute
belongs per se and primarily, i.e., the genus to which the attribute belongs universally and
αὐτὸ. Assuming, as Aristotle does, that attributes can belong primarily and per se only
to one subject genus, it follows that there cannot be a demonstration proving the
existence of a single attribute which begins in one genus and crosses over to another: the
relation between the attribute and the genus of the second science will be merely
accidental unless the genera have something in common. We shall see how this is possible,
and hence how a restricted kind of crossing over is possible, momentarily.

The argument against a universal science is made in a different way in APo. 1.32,
where Aristotle argues that it is impossible to prove all conclusions from the same
principles. Once again, Aristotle appeals to a multiplicity of genera not reducible to a
single genus:

Even from what is laid down [as true], not all truths are proved from the same
principles; for the principles of many things are generically [τῶ γένει] different and
are not applicable to each other [οὐδ' ἐφαρμόττονοι]. For example, units are not
applicable to points, for the latter have position and the former have no position
[Θέσις]. (1.32.88a30-4)

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72 "... [in the same science] the end terms [i.e., the major and minor terms] and the middle terms must
come under the same genus; for if the attributes are not essential to a subject, they will be accidental"; APo. 1.7.75b10-12. Cf. 1.6.75a28-31: "Since a thing which belongs καθ' αὐτὸ to its subject and αὐτὸ that
subject in each genus does so of necessity, it is evident that scientific demonstrations (a) are about things
that belong καθ' αὐτὸ to their subjects and (b) proceed from such things." The principle that
μεταβαίνειν is impossible is reached as a conclusion (ύραξ, 1.7.75a38) from this fact.
73 The idea of certain predications being primary and αὐτὸ depends on this principle. Though cf. APo.
2.14.98a20-4, where certain attributes belong to subjects that are analogous, as the shell of the sepa is
(functionally?) analogous to the spine of a fish and a mammalian backbone.
Units and points are principles in different genera, as *APo.* 1.7 has already emphasized. The definition of a unit does not include position, and hence properly geometrical conclusions—conclusion about things having position—cannot be drawn from the definition of a unit. It is impossible to prove multiple conclusions from few premises even within a single science:

the principles are not much fewer than the conclusions; for the [immediate] premises are the principles, and [for a new conclusion] a [new] premise is [added] either by an outside addition or by the insertion of a new term. . . . [T]he immediate premises are principles, and a new conclusion is proved only by taking a new immediate premise. (1.32.88b3-6, 18-20)

As demonstrations progress to prove additional conclusions, it becomes necessary to introduce additional immediate premises. It is not possible to reduce all the phenomena to a few simple principles, either within a science or between sciences. On the other hand, there is clearly the possibility of a hierarchy of indemonstrable principles, in the sense that some principles may be required to prove only very few conclusions while others (such as the definition of the unit) are required for many more.

We have seen from *APo.* 1.7 that Aristotle is aware that there must be some way in which the conclusions of sciences investigating one subject genus can be applied to another. Otherwise, the application of the mathematical sciences to physics, or the use of arithmetic in geometry, will be impossible. Aristotle’s solution is that one may apply a demonstration in one science to entities studied by another precisely to the extent that the subject genus of the first science is applicable to the objects of the second. The genera need not be the same unqualifiedly, but they must be the same “in some respect” (75b9). Aristotle’s example in *APo.* 1.7 (75b3-6) is that demonstrations in arithmetic can be applied to geometry to the extent that magnitudes (the subject genus of geometry) are numbers (ἁριθμοί, the objects of arithmetic).

In *APo.* 1.13, Aristotle gives a very clear account of how a physical science can be dependent on a mathematical science by what he calls “subordination.”\(^7^4\) Clearly, however, this relation is not the same as that of metaphysics to the other sciences. A text

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\(^7^4\) See *APo.* 1.13.78b34ff.; cf. *Meta.* 13.3.1078a14-b34).
that is helpful for clarifying the relation in the case of metaphysics is Aristotle's account of accuracy (άκριβεία) in APo. 1.27:

One science is more accurate and prior to another (a) if it is the same science both of the δίδα and the διότι, but not of the δίδα apart from the διότι, or (b) if it is not about a subject (μὴ καθ' ὑπόκεισθεν) rather than about a subject, as in the case of arithmetic when contrasted with harmonics, or (c) if it proceeds from fewer rather than additional principles (ἐκ προσθέσεως), as is the case with arithmetic when contrasted with geometry. By ἐκ προσθέσεως I mean, for example, a unit is an entity without position (οὐσία ἀθέτος), but a point is an entity with position, and [I call] the latter [a principle] ἐκ προσθέσεως. (1.27)75

In all cases, one science is in some way dependent on another, more "accurate" science. It is not clear specifically what sciences would be examples of case (a). Case (b) is clearly an example of Aristotelian subordination. It is case (c) that is of interest for us, because the examples used there are the same as Aristotle uses in Meta. 1.2 when he elaborates on the universality and the greater ἀκριβεία of wisdom:76

Of the attributes [sc. of the wise man] listed, that of knowing all things must belong to him who has universal knowledge in the highest degree; for he understands in a sense all the subjects under investigation [πάντα τὰ ὑπόκειμενα]. And the most universal things [τὰ μάλλις καθόλου] are on the whole the hardest for men to know, for they are most removed from sensations. Also, the most accurate of the sciences are those which are concerned mostly with the first causes, for the sciences with fewer principles are more accurate than those with additional principles [ἐκ προσθέσεως]; for example, arithmetic is more accurate than geometry. (982a21-8)77

The suggestion is that the relation between wisdom and the other sciences is somehow analogous to that between arithmetic and geometry.78

What APo. 1.27 shows is that arithmetic and geometry are not at the same level with regard to priority and posteriority. Although arithmetic is not universal

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75 The use of οὐσία here is slightly unusual. I take Aristotle to be using it generically, i.e., to avoid having to go into detail about what it is exactly that units and points have in common. Cf. also Apostle's commentary 5 ad loc.
76 Cf. also Meta. 13.3.1078a9-13.
77 Minor modifications to Apostle's translation.
78 Cf. Meta. 4.2.1004a6-9, 6.1.1026a25-7. It would be very convenient if the "first" part of mathematics referred to at 1004a8 were the same as the "universal" mathematics at 1026a27, and if these both could be identified with arithmetic (note that arithmetic is not mentioned as one of the particular kinds of mathematics at 1026a26-7). Ross has identified certain passages that make this identification doubtful, however—see the next note.
mathematics, it is nevertheless prior to (87a31) geometry. A principle in geometry exists by addition to, and hence is dependent on, one in arithmetic. How this may be so is made clearer by considering Aristotle’s definition of a point at DA 1.4.409a6: a point is “a unit having position” (μονάς θέσιν ἔχουσα). It is possible to argue, as Apostle does (commentary 25 ad loc.), that Aristotle is using “unit” to refer to the genus to which both arithmetical and geometrical units belong. If the geometrical unit is really a principle ἐκ προσθέσεως, however, it should not be surprising if it is defined in terms of, and by the addition of position to, the arithmetical unit. The unit would thus be prior in formula (λόγος) to the point. This is supported by Meta. 13.3:

[T]o the extent that we are investigating what is prior in formula [τῷ λόγῳ] and is simpler [ἀπλοοςτέρων], to that extent [the science] will be more accurate (i.e., more simple). Thus the science which leaves out magnitude [ἀνευ . . . μεγέθους] is more accurate than one which includes it; and the science that leaves out motion is most accurate, but if a science is concerned with motion it is most accurate if it is concerned with primary motions. (1078a9-12)

Arithmetic is from the fewest principles—it leaves out magnitude—and additional principles (position, additional dimensions) are added as the subject matter of the science becomes more complex. It appears that arithmetic is prior to geometry not in the sense that geometry uses conclusions from arithmetic but rather in the sense that its definitions are posterior in formula, and thus dependent on, those of arithmetic. Although units and points are in different genera (APo. 1.7, 1.32), the point is nevertheless defined in terms of

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79 Bonitz (1848-49: 285) has suggested that arithmetic be identified with universal mathematics. As Ross (1924: 356 ad 1026a25) points out, however, there are several passages in Aristotle that suggest the existence of a universal mathematics in addition to arithmetic. Of the passages Ross raises Meta. 13.3.1077b17-20 and especially APo. 1.5.74a17-25 seem to be conclusive against Bonitz’s interpretation.

80 It is not clear how far this extends. The point exists by addition of position to the unit, but Aristotle does not give any other examples of this sort. On the other hand, in APo. 1.27 and Meta. 1.2 Aristotle refers to arithmetical and geometry in general, not just to the unit and the point.

81 This is the way Heath (1949: 66) reads the passage. According to Heath this is a reference to the Pythagorean definition of a point. He also cites Proclus’s version of the definition, “a unit with position added” (μονάς προλεθοσθε θέσιν).

82 One thing is prior in λόγος to another if the second thing is defined in terms of the first (Meta. 13.2.1077b3-4; cf. 5.11.1018b34-7, 7.1.1028a34-6, 9.8.1049b12-17).

83 Following Ross’s (1924: 417 ad 1078a12) punctuation and interpretation. There are two independent contrasts, the first between arithmetic and geometry and the second between mathematical and physical science. Mathematical science in general is more accurate than physics but not than arithmetic. (The parenthetical explanation at a10-11 seems to make the statement tautologous and Jaeger queries whether it should be deleted.)
the unit and is dependent on it for its intelligibility. The science of one genus depends on that of another, and has something in common with it, without being reducible to it.

If this is the case, arithmetic seems to have a kind of universality that geometry does not possess: geometry exists by adding principles (ἐκ προσθέσεως) to those of arithmetic. Although arithmetic is not universal in the sense of being a science of all quantities, it may be so in the sense of containing principles necessary for the study of any kind of quantity. If wisdom is like arithmetic in being from fewer principles, it would appear that, just as arithmetic does not deal directly with all kinds of quantity, neither does wisdom deal directly with all genera of being. On this interpretation, wisdom is universal neither in the sense of being a science of everything, nor in the sense that it studies all the principles of things (both senses being ruled out by APo. 1.9). Rather, the wise man "understands... all the subjects under investigation" (982a23) precisely in the sense that he studies the highest principles, principles necessary (but not sufficient) for scientific understanding of any thing. As the subject matter of a science becomes more complex and as additional conclusions are demonstrated, it becomes necessary to add additional immediate premises and thus additional principles (APo. 1.32). Likewise, the particular sciences, while dependent on metaphysics for some principles, will add additional principles appropriate to their subject matter. The existence of a science devoted to the study of the highest principles is no threat to the autonomy of the other sciences, because the additional principles are no more reducible to the higher principles than points are reducible to units. At any rate, so shall we argue in the following chapters.

We have discussed three important aspects of the Posterior Analytics and the problems they raise for understanding metaphysics as a science. Let us recapitulate. First, in the APo. scientific knowledge is demonstrative, that is, it demonstrates that per se attributes belong necessarily to a subject genus. This raises difficulties because there does not seem to be a demonstration of ὁσιά or τι ἐστι, yet metaphysics is a science of ὁσιά. It is necessary to determine whether Aristotle continues to maintain there is no

84 It is impossible to determine just from the APo. whether Aristotle actually believes this to be the case for all quantities. The important point is rather that this occurs in at least some cases, and might be universally the case for metaphysics in relation to the other sciences.
demonstration of \( \omega \sigma \iota \alpha \) in the Meta. and if so, whether and how a science can be nondemonstrative. Second, the APo. account of universality as generic univocity cannot be applied to a science of being, because being is not a genus. Finally, it is not clear how there can be a universal science if every science must have its own subject genus, though we have seen that these two demands are not necessarily contradictory. We are left with one important task in our exposition of the APo., namely, Aristotle’s account of definition in APo. 2.1-2. Aristotle’s account of definition does not so much raise problems for metaphysics as a science as show how scientific inquiry in an APo.-style science of being should proceed.

VI

The first chapter of Posterior Analytics 2 begins with a distinction between four kinds of knowledge and hence between four kinds of inquiry. We may inquire about “(1) a fact [\( \tau \omega \delta \tau \iota \)] , (2) the reason [\( \tau \omega \delta \iota \tau \iota \)] for a fact, (3) if an object exists [\( \varepsilon \iota \varepsilon \sigma \tau \iota \)] , (4) what a thing is [\( \tau \iota \varepsilon \sigma \tau \iota \varepsilon \)] .”\(^{85}\) The meaning of this distinction becomes clear from what follows. The fact that the moon is eclipsed is an example of (1): what is known is that (\( \delta \tau \iota \)) something can be truly predicated of something else. In case (2) we are assumed to know already that the moon is eclipsed and having discovered this (\( \varepsilon \delta \rho \omicron \nu \tau \xi \)) we seek the reason for the eclipse.\(^{86}\) In case (3) we seek to know whether something (God or a centaur, for instance) exists (\( \varepsilon \iota \varepsilon \sigma \tau \iota \)) and in (4) what that thing is (\( \tau \iota \varepsilon \sigma \tau \iota \varepsilon \)). Once again, we are assumed to know (3) before inquiring about (4).\(^{87}\) The implication is that (1) and (2) are somehow analogous to (3) and (4), the first two being to accidental existence what the last two are to substantial existence. Our expectation then is that the \( \delta \iota \tau \iota \) and the \( \tau \iota \varepsilon \sigma \tau \iota \) somehow will be related.

\(^{85}\) 89b24-5. We shall see that Aristotle uses \( \delta \tau \iota \varepsilon \sigma \tau \iota \varepsilon \) later on not only to indicate a fact but also to indicate that something about which we might ask \( \varepsilon \iota \varepsilon \sigma \tau \iota \) exists.

\(^{86}\) “When we know the fact, we inquire into . . . the reason for it”; 89b29. Aristotle’s example in APo. 2.1 is actually of a solar eclipse. He generally uses the example of a lunar eclipse, however. We shall use the word “eclipse” throughout to mean “lunar eclipse.”

\(^{87}\) “Knowing the fact that an object . . . exists, we ask . . . ‘What is it?’”; 89b34.
This expectation is confirmed in chapter 2. The first and third kinds of inquiry are assimilated to the question whether there is a middle term or not, and the second and fourth are assimilated to the question, “What is its middle [μέσον]?” (89b37-90a1). Aristotle identifies the middle term with the cause or explanation (αἰτίαν), “for the cause is a [middle term], and in all cases it is this that is being sought” (90a6-7). The διότι for a substance’s existence or having some property either essentially or accidentally is the middle term (90a10-11). Aristotle adds that “it is evident that in all these the whatness [τὸ τί ἐστι] and the why [τὸ διὰ τί] are the same” (90a14-15). To the question, What is an eclipse? Aristotle answers that it is the privation of light from the moon caused by the earth’s interposition. Similarly, the answer to the question why eclipses occur is that the light disappears when the Earth is interposed between the Sun and the Moon.

Thus Aristotle clearly links knowledge of the τί ἐστι with knowledge of the διὰ τί. Scientific inquiry requires that we come to know what things are; and coming to know what a thing is, is to come to know its cause. It is also clear that what something is may not be easily knowable, at least at first. If we could observe a lunar eclipse from the perspective of the moon we would quickly come to know both of the existence of the eclipse and of its cause, because we could see the Earth obstructing the light by its interposition between the Sun and the Moon. From the perspective of the Earth, however, it is not as clear that it is the Earth’s interposition that is causing the eclipse—that the τί ἐστι of an eclipse is an interposition—because we cannot see the Earth obstructing the light of the Sun.

The four kinds of inquiry should be familiar from Aristotle’s account of the starting points of demonstration: the διϊ of the principles, and the τί ἐστι of both the subject genus and its attributes, must be assumed in a demonstration. The διϊ of the entities proved to exist (e.g., per se attributes such as thunder and eclipses) are the conclusions of

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88 Barnes and Tredennick translate μέσον as “middle term” while Apostle prefers simply to call it the “middle,” italicizing to indicate that the technical term is meant.

89 Aristotle uses this case to show that scientific inquiry is about middle terms, in that once we know the cause or the middle term (as in the case of observing a lunar eclipse from the moon) we may stop inquiring—there is nothing left to form a subject for scientific inquiry. The passage at 90a25-26 (ζητοῦμεν... εἰ ἐστιν ἐν μῇ) may seem to imply that we could know there was an eclipse without knowing whether there was a middle term. From what has gone before and what follows (90a26-31) it is clear that Aristotle cannot have intended this implication.
demonstrations. Demonstration in the strict sense, demonstration *propter quid*, uses the δίστος and τί ἐστι as the middle term and hence demonstrates through the cause. The usual progression for scientific investigation, by contrast, is to begin with a grasp of the δίστος of some explainable entity (e.g., a per se attribute such as thunder or an eclipse) and to inquire into the τί ἐστι and causes of that entity. Scientific investigation proceeds from what is more known to us and to sensation to what is more known in itself; demonstration proceeds from what is more known in itself to what is more known to us. *Posterior Analytics* 2.1-2 describes the process upward to the principles of the demonstrations described in *APo*. 1.2-10.

If one can apply the *APo*. account of science to metaphysics, the foregoing may be instructive for interpreting Aristotle's questions, "what is being?" and "what is ὣσια?" in *Meta*. 7.1 (1028b4, cf. 3.4.1001a7-17). If Aristotle is following the account of the τί ἐστι question in *APo*. 2.1-2, inquiry into the τί ἐστι of being and ὣσια should be inquiry into the causes of being and ὄσια. On the other hand, the problems we have already noticed for applying the *APo*. model of science to metaphysics are still present here. The *APo*. account of a science suggests that the causes of an entity—whether a substance or an attribute—sought will be expressed in the middle term of a demonstration of the existence of that entity.90 This implies that substantial explanation will be through demonstration but, as we have seen, it is not clear that there is demonstration of ὄσια (*Meta*. 3.2.997a30-2, 6.1.1025b14).91 Further, in the *APo*. causes are expressed in definitions, which are universals univocally predicable of all instances, although they do not exist apart from particulars (*APo*. 2.2., cf. 1.11.77a5-9). We have seen that this too is problematic when applied to metaphysics. Finally, the *APo*. does not distinguish between physical and metaphysical investigations, whereas it is likely that physical and metaphysical

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90 "Now when we inquire whether something is or is not a fact or whether an object simply exists or not [τὸ διὸ ἢ τὸ ἐστὶν ἀπλῶς], we inquire whether it has a middle term or not. And when we further inquire, after knowing that something is a fact or that an object exists . . . , into the why [τὸ διὸ τί] of it or the whatness [τὸ τί ἐστι] of it, then we ask, 'What is the middle term?' . . . It follows that in all our inquiries we inquire either (a) whether there is a middle term or (b) what the middle term is; for the cause [ἀγνωστὸν] is the middle term, and in all cases it is this that is sought." (2.2.89b36-90a7)

91 Although Aristotle mentions "man" and "soul" as examples at *APo*. 2.8.93a23-4—presumably to indicate that he intends his approach also to be applicable to substances—the examples using substances are never developed (unlike the thunder and eclipse examples, both developed at length in *APo*. 2.8).
investigations of substance will be seeking different kinds of causes or will be investigating the causes in different ways. Where does νοῦς enter the investigation into the causes of ὁμοστα? It is necessary to clarify to what science and to what cognitive disposition different kinds of τι ἐστι or διὰ τι questions will belong.

VII

The purpose of this chapter has been to set out the most important features Aristotle’s conceptions of wisdom and science, so as to provide a framework for answering the question, How is metaphysics an Aristotelian science? We have attempted both to show what problems are likely to arise in any attempt to understand metaphysics as a science and to indicate in outline what metaphysics must look like if it is to be an APo.-style science. Our next task will be to examine the principal methodological aporias that Aristotle raises about metaphysics in book 3 of the Metaphysics.
Chapter 2
Methodological Preliminaries

We have seen in our last chapter that the opening chapters of the *Metaphysics*
defines wisdom as the science of divine things and of the first principles and highest causes
(*Meta.* 1.2.982b9-10, 983a5-10).\(^1\) We are led to expect that the science pursued in the rest
of the *Metaphysics* will be a science of this sort. The exposition does not, however,
present a very clear conception of the object of the science, especially when seen in the
light of Aristotle's other works. Physics, too, seems to have something about the highest
causes: it considers all four causes, and *Phys.* 8 proves the existence of an immaterial
unmoved mover even though inquiry into the nature of the unmoved mover does not seem
to belong to physics. Nor is the relation of the science described in *Meta.* 1.2 to that
described in *Meta.* 4.1-3 and practised in much of the rest of our *Metaphysics*
perspicuous. It is not surprising, therefore, that Aristotle follows book 1 with a discussion
of some fourteen aporias, and that four of the first five of these directly concern the object
of this science.\(^2\) Our concern in this chapter will be primarily with these four aporias. We
shall begin, however, with a quick glance at the parts of the *Meta.* 1 that we have not yet
considered.

I

Chapter 3 of book 1 appears to take up the exposition precisely where *Meta.* 1.2
leaves off. In *Meta.* 1.2 we are told that wisdom is the knowledge of the highest causes;

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\(^1\) Aristotle does use the technical term for "science," i.e., ἔπιστήμη, throughout *Meta.* 1.2.

\(^2\) Our numbering of the aporias follows Apostle 1966 and Ross 1924. This order is that of the initial
exposition in chapter 1 rather than the subsequent discussion in chapters 2-6. The order of aporias (4) and
(5) is reversed in chapter 2, as is the order of aporias (12)-(14) in chapters 5 and 6. The methodological
aporias are thus numbers (1), (2), (3) and (5) in the numbering we are following. These are actually the
first four aporias to be discussed in *Meta.* 3.2. Other enumerations are possible (cf. Owens 1978\(^3\): 219 n. 37).
chapter 3 reiterates that we are seeking the highest causes (983a24-6) and goes on to divide the causes according to the Physics schema familiar both to us and to Aristotle's "hearers."³ A comparison of this passage and its counterpart in the Physics is instructive:

It is evident, then, that we must acquire knowledge [ἐπιστήμη] of the first causes (for we say that we understand [εἰδέναι] each thing when we think that we know its first cause), and the causes are spoken of in four senses. In one sense, we say that the substance [ὑστά] or the essence [τὶ ἴν εἶναι] is a cause (for the διὰ τί leads us back to the ultimate λόγος, and the first διὰ τί is a cause and a principle); in another, it is the matter and the underlying subject; in a third, the source which begins motion; and in a fourth, the cause opposite to the previous, the final cause or the good (for this is the end of every generation and every motion). (Meta. 1.3.983a24-32)

Since our inquiry is for the sake of understanding [εἰδέναι], and we think that we do not understand a thing until we have acquired the διὰ τί of it (and this is to acquire the first cause), clearly we should do this as regards generation and destruction and every physical change so that, with an understanding of their principles, we may try to refer to [the principles] each of the things we seek. In one sense, "a cause" means that from which, as a constituent, something is generated . . . In another it means the form or the pattern, this being the formula of the essence . . . In another, it means that from which change or coming to rest first begins . . . Finally, it means the end, and this is the οὗ ἐνεκὼ. . . . (Phys. 2.3.194b17-33)

Both in the Physics and in the Metaphysics the goal is to answer the question why (διὰ τί) and to find the first cause (τὴν πρῶτην αἰτίαν, 194b20, 983a25-6). In the Physics, however, Aristotle states that he is interested in finding the first causes specifically of generation, destruction, and physical change.⁴ The Metaphysics makes no such specification. However, it implicitly raises the question of the nature or phenomenon whose causes metaphysics is seeking. What distinguishes causal investigation in metaphysics from causal investigation in physics?

A hint of the distinction Aristotle intends between the two investigations is perhaps provided by the second significant difference between the two texts. In the Metaphysics passage Aristotle eschews the use of μορφή or εἶδος for the formal cause, and identifies it

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⁴ Cf. 2.7.198a21-4. Notice that Meta. 5.2, which largely parallels Physics 2.3, lacks the sentences that restrict the application of the causes to the explanation of generation, destruction, and change.
specifically as the substance (ουσια) of the thing. This is significant for several reasons. First, it indicates that there is a sense of ουσια according to which it is a principle or cause. Secondly, this is only the first of several instances in Meta. 1 and 3 where Aristotle uses ουσια to refer to a cause in places where one would expect him rather to use ειδος or μορφη. Is Aristotle simply using ουσια to mean "form" or "formal cause"? We shall see that there are reasons to believe he is not. If ουσια does not simply mean "form," why does Aristotle dignify the formal cause with the name ουσια? Are there other entities that also have a right to the name ουσια in its causal sense? In Meta. 4.1 and 6.1 Aristotle tells us that he is seeking the principles and causes of being qua being (1003a31-2, 1025b3-4), that is, as Aristotle specifies in Meta. 4.2, the principles and causes of ουσια (1003b17-19). How is the ουσια whose causes are being sought and the ουσια that is a cause related? Is the latter supposed to explain the former? If so, how?

The rest of book 1 is devoted to establishing that Aristotle's predecessors did not identify any kind of cause other than those mentioned in the Physics, and that their accounts of the causes, while inadequate, in various ways foreshadow the more adequate account that Aristotle offers (Meta. 1.10). The earliest philosophers thought that the principles of all things were material in nature (983b6-8), ultimately reducing everything to a substrate that persisted through all change. This Thales identified with water,

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7 In Phys. 2.3 the formal cause is described variously as το ειδος και το παραδειγμα and ὁ λόγος ὁ τοῦ τι ἠν εἶναι (194b26-7 quoted above, also 195a20-1); in 2.7 as τι ἐστι (198a16, a25, a32, b3), the ειδος (a24), and the μορφη (b3). It is possible that the reference to ουσια at 2.7.198b9 uses it in its causal sense, but one would never suspect this just from its context. Aristotle does occasionally use the word ουσια in what appears to be a causal sense elsewhere in the Physics, for instance at 3.5.204a27 in the discussion of the ἀπειρον. At 1.7.191a19 Aristotle indicates that it is not yet clear whether the form or the substrate is ουσια. Nowhere in the Physics does Aristotle ask what ουσια is or identify it with form or the prime mover as he does in the Metaphysics. (The information in this note is based on an electronic search of the TLG.)

6 Thus a sense of ουσια for which there is no evidence in the Categories, for instance. On the progression from a merely descriptive to a causal sense of ουσια see especially Furth 1988: 185-6, 188; cf. Rist 1989: 260-1, 264-5.

7 Cf. 1.7.988a34-5, 1.8.988b28-9, 1.10.993a18, 3.2.996b13-14. Aristotle uses ειδος or μορφη to refer to the formal cause only three times in Meta. 1 and 3. The first two references are in passing (1.6.988a4, 3.2.996b8). The third reference is significant and appears to be a tentative solution to the eighth aporia: there must be something παρα το συνολον, which is την μορφην και το ειδος and is identified as ουσια (996b14-16; cf. 8.3.1043b10-23). It is not clear to what extent Aristotle endorses this solution: even the later treatment in 8.3 remains tentative on the question of separateness. In any event form appears as a solution to an aporia; it is not assumed that ουσια is form.

8 For instance, the unmoved mover?
Anaximenes and Diogenes with air, and Hippasus and Heraclitus with fire. Empedocles used all three of these as principles and added a fourth, earth; while Democritus constituted everything out of atoms and the void. Recognizing that a material cause was insufficient to account for change, Aristotle continues, some natural philosophers added an efficient cause, νοῦς in the case of Anaxagoras and Friendship and Strife in the case of Empedocles. Although improvements on accounts that leave out the efficient cause entirely, neither philosopher’s account of this cause is very satisfactory (985a10-29).

The Pythagoreans regarded the principles of mathematical objects as the principles of all things (b25-6), apparently treating these principles as material causes (986a15-20). They differ from the materialist philosophers in considering the One and other mathematical principles not as reducible to physical principles such as fire or earth, but as themselves the οὐσία of things (987a16-19). Notice that Aristotle seems to be using οὐσία in its causal sense: the principles of mathematical objects are the principles and οὐσία (though not the formal principles) of things. Aristotle dismisses the thought of Xenophanes and Melissus (986b25-7), although he thinks the problems Parmenides raises about not-being to be worth considering and refers his hearers back to his treatment of these issues in the Physics (b27-30).

Aristotle gives Plato the credit for coming closest to an adequate account of the formal cause:

As for the essence and οὐσία, no one expressed it clearly, but those who posit the Forms speak of it more than anyone else; for it is not as matter that they posit the Forms as causes of the sensible things, and the One as the cause of the Forms, nor do they believe that the Forms are causes in the sense of a source which begins motion (for they are rather causes of motionless ἀκτινησίας and rest [τοῦ ἐν ἣρεμίᾳ εἴναι], so they say), but the Forms furnish the essence of the other things, and One furnishes the essence of the Forms. (1.7.988a34-b6)

As in Meta. 1.3, Aristotle uses οὐσία and essence rather than μορφή or εἶδος to refer to the formal cause. Platonic Forms and Aristotelian form would appear to be two candidates for a kind of cause. Aristotle’s comment that the Forms are causes not of motion but of

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9 Cf. Meta. 3.4.1001a3-19.
10 Aristotle’s extended treatment of Plato’s views is found in 1.6.
stability (though perhaps misleading as an account of Plato) suggests that Aristotle himself sees connotations of stability and rest in being and oûσία. To this discussion Aristotle adds the remark that the final cause does not receive an adequate account from any of his predecessors: although called "good," Friendship in Empedocles and νοῦς in Anaxagoras seem to act as efficient rather than final causes (b6-11).

We shall pass over the remainder of book 1 rather briefly. In chapter 6 Aristotle praises Socrates for being the first to recognize the importance of definition (cf. 13.4.1078b27-30), and adds that Plato, believing that there cannot be definitions of objects in the sensible world, posited the Forms as the objects of knowledge and definition. Having used chapters 3-7 to present his predecessors' accounts of the principles, Aristotle goes on to criticize them in chapters 8 and 9, devoting most of chapter 9 to criticism of the Platonic Forms. Amid many specific criticisms he chastises the physicists for failing to recognize the existence of immaterial substances (989b21-7). Chapter 10 once again points out that no philosopher has discovered causes other than the four in the Physics, and once again emphasizes the inadequacy of his predecessors' conceptions of these causes. Empedocles, for instance, recognized that bone exists by virtue of a λόγος, but did not identify this λόγος as oûσία and essence, although Aristotle suggests that he would have seen this had it been pointed out to him (993a17-24). As a whole, Meta. 1.3-10 suggests that Aristotle sees his project in the Metaphysics as continuous with his predecessors' inquiry into the causes of things. The precise object of the science and its differentiation from Aristotelian physics remain unclear, however. As we shall see shortly, this is the question that will be raised by the first aporia.

II

The end of Meta. 1.10 (993a24-7) leads us into Aristotle's next task in the Metaphysics, the discussion the aporias in book 3 (B). The aporias (fourteen in the

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11 Cf. Phaedo 101c. Aristotle does recognize elsewhere (Meta. 1.9.991b3-9) that in the Phaedo Plato sees the Forms as causes of generation.
12 We follow most scholars in taking book 2 (α) not to belong where it is in our Metaphysics; see pp. 16-17 of our Introduction.
enumeration we are using) divide roughly into those concerning the nature of the science itself and those concerning specific questions raised in the science, notably about the principles of beings. Traditionally aporias (1), (2), (3), and (5) have been considered the "methodological" aporias, and the rest concerned with specific substantive questions in metaphysics. This division is slightly problematic because it makes Aristotle's placement of his discussion of the fourth aporia (whether there exist immaterial substances) rather puzzling: Aristotle introduces it before the fifth aporia in 3.1 and treats it with the four methodological aporias in 3.2. Perhaps the fourth aporia, too, is in a sense methodological. Aristotle writes in Meta. 6.1 that if there were no immaterial substances physics would be first philosophy (1026a27-9). This being the case, the very existence of the science whose nature is being determined in the first five aporias depends on an affirmative answer to the fourth aporia.

Whether or not Aristotle intended a sharp distinction between methodological and substantive aporias, the distinction is nevertheless helpful for our purposes. The difficulties that the Posterior Analytics raises for understanding metaphysics as a science are in large measure (though not exclusively) the difficulties raised by this set of aporias. For this reason we shall devote the rest of this chapter to the study of the methodological aporias, as well as to a methodological issue raised by the seventh aporia. The chapters following this one will then be organized around Aristotle's solutions to these aporias.

The first aporia inquires whether it belongs to one or many sciences to investigate all the causes. The case contra is made with two arguments. First, the causes are not contraries, but it is contraries that are studied by a single science. Second, not all causes are found in all entities: there is no principle of motion in immovable things, nor is there final causality (3.2.996a20-b1). A certain amount of background is necessary to make the relevance of Aristotle's arguments intelligible.

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13 See note 2 above.
14 Cf., most recently, Irwin 1988: 161. See also Ross 1924: i.223. The word "methodological" should not be taken in the narrow sense of a methodology of investigation, but in the wider sense in which questions about the objects of the science and kinds of relations between them are methodological.
15 Or, if the chapter division is editorial, the editor saw fit to include it in this group.
If there is a single science of all four causes, they cannot all be the subject genus of that science: for each science there must be only one subject genus (APo. 1.27). A single science, however, will study the contraries predicable of a given genus. If the causes were contraries of this sort, they could be studied by a single science. It seems likely that Aristotle is considering the possibility that they are demonstrable per se attributes (καθ’ αὐτά συμβεβηκότα or ἔδια πάθη) of some subject genus, just as evenness and oddness, commensurability and equality, and excess and deficiency all belong to the genus of number (Meta. 4.2.1004a10-12). If we may take a cue from Aristotle’s example of evenness and oddness, it would appear that these per se attributes are predicated according to the type (2) predication developed in APo. 1.4 (73a37-b3): there Aristotle maintains that evenness and oddness are predicated of number according to type (2) per se (a39-40, b20-1). Such predications are characteristically contraries (APo. 1.4.73b19, 1.6.74b9-10): to use another Aristotelian example, either straightness or curvature must belong to lines (73a38-9, b20). The causes, however, are not contraries, hence not per se attributes demonstrable of a subject genus. Therefore, they do not seem to be possible objects of a single science.

As Owens points out, the second argument contra seems to assume that a science of the four causes must also be a universal science, a science that studies all of being qua being. The objection that the efficient, final, and material causes are not found in immovable things is initially plausible as an objection to a science of all four causes only if it is necessary that such a science study not only sensible but also immaterial things. There already exists a science that makes use of all four causes, i.e., physics, but it seems that physics is not what Aristotle has in mind. If there are only the four causes identified in Meta. 1, and physics makes use of all four, what cause or causes does metaphysics study and how does its study of the causes differ from that of physics? In Meta. 1.3-10 Aristotle suggests that his own science is continuous with the investigations of his predecessors, but the investigations of many of his predecessors seem best classified as part of physics.

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16 See Meta. 4.2.1004a9-10, 11.3.1061a18-19.
17 Although this doctrine is fraught with many difficulties, it nevertheless seems to be Aristotle’s. See further chapter 5, pp. 146-7 below.
18 Owens 1978: 221.
Aristotle's own view on the matter is perhaps hinted at by his treatment of the claims of the various causes to be objects of metaphysics. He begins by suggesting that each of the four causes has some claim to be the object of the highest science described in Meta. 1.2. As supreme and of the highest rank (cf. 1.2.982b4-10), it should be the science of the good or the final cause (996b10-13), but as the science of the first causes and of what is most knowable (τὸ αὐτὸ πάντα ἔστι τὸν κάτω, cf. 892a1) it should be the science of ὄντως and τί ἐστιν (996b13-22). Finally, in the case of generations, actions, and changes we seek the source of motion (i.e., the efficient cause, b22-6). Despite his statement that all the causes have some claim to be objects of wisdom (996b8-10), Aristotle provides no argument for the material cause's claim. Likewise, whereas Aristotle draws explicitly on Meta. 1.2 to back up the claims of the formal and final causes, Aristotle's case for the efficient cause at b22-6 makes no reference to anything in that chapter.

If we are to go by the strength of Aristotle's arguments, it is the formal and final causes that have the strongest claims to be objects of metaphysics. In order to support their claims to be objects of metaphysics the aporia can appeal directly to what Aristotle has written about the objects of metaphysics in Meta. 1.2. The efficient cause's claim is weaker: there is no obvious connection between the realm of the efficient cause as described here and the science described in Meta. 1.2, whereas there is an obvious connection between the efficient cause and the realm of physics. The efficient cause is relevant for the understanding of generations, actions, and change generally (Meta. 3.2.996b22-3): according to Phys. 2.3 (194b17-23) this is precisely the sphere of physics. From the fact that Aristotle makes no argument for the material cause's claim to be an object of metaphysics we can probably infer that metaphysics does not make use of the material cause. We are thus left with the formal and final causes as potential objects of metaphysics.

If these last two causes can somehow be reduced to one, and if we can explain how final causality can be found in immovable objects, we shall have a strong argument

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19 Another reference to the formal cause that does not mention form.
for the identification of metaphysics with the study of a particular kind of cause.\footnote{This would, however, leave us with the question of how metaphysics can be universal if it does not study the material and efficient causes. Owens (1978: 224-5) takes the solution of the aporia to be a reduction of all four causes to \( \nu\sigma\alpha \) and the formal cause. This seems to be going further than Aristotle's text warrants at this point and is especially problematic for the material cause.} If this is the case, the progression from 1.3 onward can be read as a growing precision of the conception of first philosophy from the unsophisticated accounts of Aristotle's predecessors to his own account of the science. Aristotle himself suggests that, although his physicist predecessors thought they were inquiring about the whole of being, they erred in failing to recognize the existence of a genus above nature and a science above physics (4.3.1005a31-b2).\footnote{Cf. also \textit{Meta.} 1.8.989b21-7. On the \textit{Meta.} 4.3 passage see esp. Merlan 1959.} Two serious problems remain, however. First, the reader familiar with \textit{Meta.} 12.6-10 will anticipate that one of the principles of being—ultimately the first principle—will be the unmoved mover. The accounts of the causes in \textit{Meta.} 1.3 and 3.2, however, both suggest the familiar schema in which the four causes are all causes \textit{in} a given sensible substance. We are led to think of \( \nu\sigma\alpha \) and \( \tau i \\upsilon \nu \varepsilon i\nu\alpha \) as the formal principle of some sensible substance, not as an unmoved mover unqualifiedly separate from any sensible substance.\footnote{Matter, of course, is an element in substances, and the efficient and final causes are often reducible to the formal cause; \textit{Phys.} 2.7.198a24-7; cf. \textit{Meta.} 7.7.} The unmoved mover does turn out to be primary \( \nu\sigma\alpha \) (12.7.1072a31), primary \( \tau i \\upsilon \nu \varepsilon i\nu\alpha \) (12.8.1074a35-6), and a final cause (12.7.1072a26-b3).\footnote{Thus tending to confirm our expectation that the objects of metaphysics will be final and (what we have been calling) formal causes.} It is not, however, the formal principle of any other substance, nor does its final causality operate in the same way as that of a form of a substance.\footnote{E.g., the final causality of the soul over the body; \textit{DA} 2.4.415b15-21.} It is perhaps for this reason that Aristotle prefers \( \nu\sigma\alpha \) to \( \varepsilon i\delta\omega \) and \( \mu\varphi \eta \) when describing the formal in the passages we have examined: the unmoved mover is primary \( \nu\sigma\alpha \) and thus an instance of \( \nu\sigma\alpha \) in its causal sense, but not as a formal cause.\footnote{Aristotle never uses \( \varepsilon i\delta\omega \) or \( \mu\varphi \eta \) to refer to the unmoved mover in \textit{Meta.} 12.6-10.} How the unmoved mover acts as a principle is very far from clear, however; in particular, it is not clear how it acts as a principle of \textit{being} and why it has a claim to the causal sense of \( \nu\sigma\alpha \). There is nothing in \textit{Meta.} 1.3-10 or 3.2 to shed light on this question.
The second problem returns us to the relation between physics and metaphysics. However much the formal and final causes may be the object of metaphysics, they are indubitably also somehow the objects of physics and its various subdisciplines. How can metaphysics study these causes without intruding on the domain of another independent science? A common answer to this question and thus to the first aporia—one which incidentally allows metaphysics to study all the causes without intruding on the domain of physics—is that the senses of “investigating the causes” in the Physics and the Metaphysics are different. This is the solution adopted by Walter Leszl and, most recently, by T. H. Irwin. Physics investigates the causes of specific phenomena; metaphysics does not. According to Leszl, Aristotle ended by admitting that the science of being qua being deals with the four causes (as different types of causal action), because it deals with them from a conceptual point of view, that is to say, by considering what it is for something to be an end or an efficient cause, and not by establishing what causal dependencies exist between this and that kind of things. This sort of inquiry involves determining the relationship of each of the types of explanation to the other ones. . . .

The distinction between physics and metaphysics on this account does not arise from the fact that they study different causes or causes of different phenomena, but rather in the way they study the causes. According to Leszl and Irwin, this feature of metaphysics also distinguishes it from the investigations of Aristotle’s predecessors. Physics is a first-order investigation attempting to find specific causes for specific phenomena, whereas metaphysics is a second-order investigation into (among other things) the nature of causality itself. We shall see that there are good reasons to reject this account of Aristotle’s project. This being the case, we need to find some other way to explain how physics and metaphysics can both exploit causes to explain phenomena without intruding on each other’s territory.

28 The most useful single text for this purpose is Meta. 7.16.1040b18-21, discussed chapter 6, p. 187 below. Chapters 6-9 as a whole present our alternative to Irwin and Leszl’s interpretation.
One possible solution to this problem is to maintain that physics investigates the causality of immanent form whereas metaphysics does the same for separate form. 29 Although there are Aristotelian texts that seem to point in this direction (especially Meta. 6.1), we shall find that there are good reasons to reject this solution. A more promising line of investigation is to ask what it is in things that the principles and causes sought by metaphysics (as opposed to those sought by physics) are supposed to account for. As we saw from the Phys. 2.3 passage we quoted, physics deploys the four causes in order to explain the various kinds of change. In Meta. 4.1 and 6.1 Aristotle tells us that it is the business of the metaphysician to investigate the principles and causes of beings qua beings (1003a31-2, 1025b3-4). 30 The author of Meta. 11.4 helpfully draws these characterizations together: metaphysics and physics investigate respectively the principles of beings qua being and of beings qua moved (1061b27-30). This suggests that there is also something characteristic of beings—"beingness," shall we say—the causes of which are investigated by metaphysics. If this is so, physics and metaphysics will both make use of the formal and final causes, but in order to explain different phenomena. 31

After this point Aristotle's discussion of the aporias assumes that the science he is seeking is a science of substance. 32 Although the introduction of substance as the object of metaphysics is unexplained and rather abrupt, it is nevertheless compatible with Aristotle's later characterizations of the science. 33 The second aporia receives slightly different formulations in different places. Its first formulation (Meta. 3.1) asks whether the science that is being sought should consider only the principles of substance or also the principles of demonstration, that is, the common axioms such as the laws of noncontradiction and

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29 Cf. Mansion 1958: 166-7 (phrased in terms of a distinction between first and second philosophy, since Mansion does not accept the identification of metaphysics with first philosophy). The account of the physics/metaphysics distinction in Paulus 1933 also has some resemblance to this one. 30 Or of "being qua being"—the first passage uses the singular and the second the plural. The Meta. 4.1 passage (1003a28-32) explicitly ties in Aristotle's project here to that described in Meta. 1. 31 Our interpretation differs significantly from Owens's (1978: 224-5, 272-3), mainly due to different interpretations of the phrase "being qua being." See our discussion in chapter 3, section I below. 32 The second aporia asks whether metaphysics investigates only the principles of substances or also the principles of demonstration (995b6-8), the third whether there is one or more sciences of substance (b10-11), and the fifth whether the science investigates only substances or also per se attributes (b19-20). 33 Cf. esp. Meta. 4.2.1003a33-b19, discussed in section III of chapter 3.
the excluded middle. It is taken for granted that metaphysics will investigate the principles of substance; the question is whether this science will also investigate the first principles of logic (3.1.995b6-8). In Meta. 3.2 (and Meta. 11.1), however, the aporia is phrased as asking whether it belongs to one or more sciences to investigate these principles (996b26-7, 11.1.1059a23-5). The background appears to be the Posterior Analytics, where it belongs to no one science to investigate the common axioms, but they are assumed in each science separately to the extent that they are useful (APo. 1.10.76a37-41). Nevertheless even in 3.2 the assumption is that, if there is a single science that studies the axioms, it will be the science that also studies substance; and the argument against assigning them to one particular science is that there is no better reason to think that the science of substance studies the axioms than any other science (997a1-2).

It is not without reason that the Posterior Analytics excludes a science of the axioms, for its methodology seems to leave no room for such a science. We know what the axioms are (i.e., their ἐστὶ), so there need be no inquiry into this (997a3-5). An attempt to demonstrate the ὀτι of the axioms will necessarily generate a vicious regress. Every science uses the common axioms to demonstrate that per se attributes belong to a subject genus; so an attempt to demonstrate the axioms would already assume their truth. Furthermore, it is not clear of what subject genus the axioms would be attributes and how they could be per se to it. Aristotle finishes his exposition of the aporia with a brief argument for the conclusion that it is the business of metaphysics (here glossed as the science of substance) to study the common axioms, since the axioms are the most universal (μᾶλιστα καθόλου) and principles of all things, and (it is implied) the study of such things is the job of the philosopher. The presentation of the aporia does not itself clearly suggest any solution, although Aristotle unequivocally identifies the science of the axioms and the science of substance in Meta. 4.3-8.

34 Meta. 3.2.997a5-11; cf. APo. 1.7.75a39-b2, 1.10.76a31-b16.
35 Cf. Meta. 1.2.982a21-2, a24-5, b9-10.
The third aporia asks whether there is one or more sciences of substance. If there is more than one, which science is the one sought as metaphysics? On the other hand, there does not seem to be a single science of all substances. Aristotle’s reason for this is apparently that, if there were, there would be only one science of all the attributes (997a18-19). This follows clearly enough from the conception of science in the *Posterior Analytics*: if there is only one science, there can be only genus, and all the attributes must be attributes of that genus and hence studied in that science. Why Aristotle believes there must be more than one science of all the attributes is unclear: one would rather expect Aristotle to maintain that the existence of a number of irreducibly different kinds of substance implies the existence of different subject genera and hence of different sciences. The discussion of the aporia is too cryptic to suggest a possible solution at this point, and the solution when it comes raises almost as many difficulties as it solves.

The last unequivocally methodological aporia—the fifth listed in *Meta*. 3.1 and the fourth discussed in 3.2—asks whether metaphysics is concerned only with substances or also with their attributes. The initial statement of the aporia in 3.1 does not yet indicate the seriousness of the difficulty this aporia presents for Aristotle’s project:

As I say, then, we must examine [the first four aporias], and (5) whether our investigation is concerned only with substances or also with the per se attributes [καθ’ αὐτὰ συμβεβηκότα] of substances. In addition, concerning sameness and otherness and likeness and unlikeness and contrariety, and with regard to priority and posteriority and all other such, about which the dialecticians are trying to inquire, conducting their inquiry from accepted opinions [ἐκ τῶν ἐνδόξων] only—to what science does it belong to investigate all these? To these we must add their own per se attributes, for we must inquire not only what each of these [sameness, etc.] is [τι ἐστι], but also [e.g.] whether there is only one contrary to a contrary. (3.1.995b18-25)

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36 Perhaps surprisingly, Aristotle does not raise the question how a science of one kind of substance could be universal. The problem of universality appears to be raised as an additional aporia once it is determined that first philosophy is primarily a science of one genus of substance (6.1.1026a23-32).
37 See the *APo*. texts cited in note 34 above.
38 It is the existence of multiple irreducible subject genera that rules out the possibility of a universal science in the *Posterior Analytics*; see chapter 1, pp. 40-2. Owens (1978: 230) suggests several other possibilities, notably the fact that wisdom would lose its distinctive subject matter.
39 Owens’s solution to the aporia is “the reduction in a non-generic way of all Entities to one primary type” (ibid: 231). This turns out to be correct, it is difficult to see how it could be anticipated just from the discussion in book 3. On the solution and the difficulties it raises see note 36 above.
40 Trans. Apostle, with modifications.
Aristotle assumes that there will be a science of substance and asks whether this science will also study substance's per se attributes. The question will be answered affirmatively in *APo. 4.2* (1005a13-18). The statement of the aporia uses the terminology of the *Posterior Analytics*: substance has certain per se attributes and it is expected that there will be a science that demonstrates that these attributes belong to it. As what appears to be an additional question at this point Aristotle asks to what science it belongs to investigate topics such as sameness, otherness, likeness, and unlikeness, which the "dialecticians" study merely on the basis of reputable opinions (ἐνδοξα).41

The initial statement of the aporia prepares us for a science that demonstrates the per se attributes of οὐσία, without raising any objection to the same science's studying οὐσία itself. In the statement of the problem in *Meta. 3.2*, however, difficulties presented by the *Posterior Analytics* come to the fore:

Further, is our investigation concerned only with substances or also with their attributes? I mean, for example, if solids and lines and planes are substances, is it the concern of the same science to know these and their attributes (which are proved by the mathematical sciences) for each genus, or of another science? If of the same, then the science of substances, too, would be a demonstrative science; but it seems that there is no demonstration of whatness [τι ἐστιν]. But if of another science, what science will be the one to investigate the attributes of substances? It is extremely difficult to answer this question. (997a25-34)

If the same science studies substance and its attributes, then the implication is that the science of substance will study substance demonstratively.42 But, Aristotle objects, there appears to be no demonstration of whatness and hence no demonstration of substance.43

Ross thinks that the fallacy in the problem posed by the aporia is obvious: sciences characteristically assume the whatness of the subject genus and demonstrate the per se attributes of that genus.44 The science of quantity, for instance, assumes the existence and the definition of quantity (and the definitions of its attributes) in order to demonstrate the existence of the attributes. It is at once a science of quantity and its attributes, while being

41 *Meta. 3.1.995b20-7; cf. 1004b17-26*. On the identity of the dialecticians see chapter 5, pp. 145-6 below.

42 Graham (1987: 78-9) ignores passages such as these when he suggests that there is no evidence for demonstration outside the *Analytics*.


44 Ross 1924: i.231.
demonstrative only of the existence of the attributes. The same might easily apply for the science of substance. That Aristotle may have something else in mind, however, is most easily seen by recalling that the subject genus of a science is not strictly speaking investigated *in* its science but is rather a *principle* of that science. The definition of the subject genus serves as a principle for demonstrations about it; and, being a principle, is strictly an object of intuition (νοῦς) rather than knowledge (ἐπιστήμη). This will not do for substance in the *Metaphysics*, however. In the *Metaphysics* substance is treated not only as a principle but as something that *has* its own principles and causes. The science of being qua being is in large part inquiry into the causes of substantiality in substance. There should therefore be a science of substance that, rather than assuming substance as a principle, instead explains substance through its principles and causes. Given the existence of such a science, it is no longer sufficient to say that metaphysics defines substances and demonstrates attributes. If substances have principles, it becomes reasonable to ask whether or not this explanation takes the form of a demonstration.

Since it is discussed in *Meta.* 3.2 and has some claim to be a methodological aporia, let us also briefly discuss the fourth aporia. The aporia inquires whether there are only sensible substances or also others apart from them (παρὰ ταύτας ἄλλας, 997a35). Aristotle's discussion of the aporia is in fact a criticism of the Platonic Forms and Intermediate Objects. The unmoved mover does eventually appear as the unequivocal answer to the aporia (*Meta.* 12.7.1073a3-5), but it is worth noting that it is not mentioned here. Apart from *Meta.* 12.6-10, Aristotle does not mention the unmoved mover when he raises the possibility of immaterial or separate substances in the *Metaphysics.* Any

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45 Intuition is the cognitive disposition that grasps the principles of science and of demonstrations: *APo.* 2.19.100b5-15 (esp. τῶν ἀρχῶν ἐπιστήμης οἴκῳ ἄν εἶν, b10-11); *NE* 6.6.1140b31-1141a8. On the role of νοῦς see especially Kahn 1981.
46 Cf. our discussion, p. 52 above.
48 Cf. in particular *Meta.* 7.2, 7.11.1037a10-20, 8.1.1042a3-24, 11.1.1059a38-b14. *Meta.* 13, which examines the Forms and Mathematical, is introduced as an investigation into whether there exist immovable and eternal substances, though here Aristotle is explicitly considering the opinions of his predecessors (13.1.1076a10-16). As we have seen, there is no explicit mention of the unmoved mover in *Meta.* 1. (The references to God and the divine there should not be assumed to refer to the unmoved mover at this point: for Plato, for instance, the Forms arguably have a better claim to divinity than the gods; cf. *Phaedrus* 246b-248c).
mention of Aristotle’s own immaterial substance, it seems, must wait until he is ready to present it properly. Several passages in *Meta. 7* suggest a reason why: it is necessary to develop an account of ὀὐσία, starting from sensible substances, before the notion of Aristotelian separate substance can become intelligible.\(^{49}\)

### III

Such, then, are the issues raised by the methodological aporias. In addition to these problems, let us briefly consider an important methodological difficulty raised by the seventh aporia. The passage of interest in the aporia is a brief argument that being cannot be a genus:

If the universals are principles to a higher degree [i.e., than the species predicated of individuals], evidently the highest genera will be the principles; for these are said of all things. Accordingly, there will be as many principles of things as there are first genera, and so both being and unity will be principles and substances; for these most of all are said of all things. But it is not possible for either unity or being to be a genus of things; for each differentia of any genus must be and also be one, but it is impossible to predicate either the species of a genus, or that genus alone, of the proper differentiae of the species. Thus, if unity or being is indeed a genus, no differentia will be either a being or one. (998b17-27)\(^{50}\)

In its context the argument does not intend to raise a specifically methodological problem: it is intended rather to point out problems with the view that the genera are principles of things. Although it is presumably implied by the fact that being is not a genus, the passage does not even mention the fact that being is not univocal.\(^{51}\) We shall have the opportunity to examine this argument at greater length in chapter 3. For now let us point out the methodological implications of its conclusion.

In *Meta. 4.1* Aristotle tells us that there is a science of being qua being. This description precisely delimits the subject matter of metaphysics using the “qua” terminology from the *Posterior Analytics.*

\(^{49}\) Cf. *Meta. 7.3.1029b3-12, 7.11.1037a10-20, 7.17.1041a6-9.*

\(^{50}\) Trans. Apostle with slight modifications.

\(^{51}\) It should also be recalled that the argument is part of an aporia, and hence that in principle Aristotle might not have meant to endorse the conclusion. In the event, the non-univocity of being is confirmed by Aristotle’s account of πρὸς ἐν equivocity at *Meta. 4.2.1003a33-b19.*
There is a science which investigates being qua being and what belongs essentially to it [ἡ θεωρεῖ τὸ ὅτι ἢ τὸ τοῦτο ὑπάρχοντα καθ' αὐτὸ]. This science is not one of the so-called "special sciences" [τῶν ἐν μέρει λεγομένων]; for none of these sciences examines being qua being universally [καθόλου], but, cutting off some part of it, each of them investigates the attributes [τὸ συμβεβηκὸς] of that part, as in the case of the mathematical sciences. (1003a21-6)52

Aristotle’s language recalls that of APo. 1.4 and 1.24: metaphysics will study being universally and qua being. That is to say, it will study those properties (καθ' αὐτὰ ὑπάρχοντα or συμβεβεκότα) of being that belong to any chance instance of being and to being primarily (1.4.73b32-3).53 These properties will belong to being because it is being (1.24.85b24-6). The APo. account of universality, however, assumes univocity, and univocity requires a genus. If being were a genus, we could assume that, just as certain properties belong to isosceles triangles qua members of the genus “triangle” and not qua isosceles, so certain properties would belong to these triangles qua members of the genus “being.”54 Being, however, is not a genus. While Aristotle is still using the terminology of the Posterior Analytics, the Metaphysics must depart from the APo.’s methodology at least to this extent.55 In the absence of a genus of being, it is no longer clear what the qualification “qua being” means. We have already seen this problem in connection with the first aporia: metaphysics is concerned with certain kinds of causes and with the causes of things qua being. Just as we must ask what phenomena in things the causes of being are meant to explain, we must determine what it is in things, if not belonging to the same genus, that gives them certain properties or attributes qua beings.

IV

Our examination of the methodological aporias has brought to light several important features of the science we are seeking. Together they raise the expectation of a

52 Slight modifications to Apostle.
53 Cf. our discussions of the fifth aporia (pp. 62-4 above), and of the structure of a science in section IV of chapter 1. In fact, since there is no scientific object prior to being, anything that will belong to any chance instance of being will also belong to it primarily.
54 Cf. our discussion of universality in section IV of chapter 1.
55 Stevenson (1975) gives a clear account of the affinities between Meta. 4.1 and APo. 1.4, but does not recognize the importance of the fact that being is not a genus.
science with three different tasks, whose relations to one another are not completely
perspicuous. Metaphysics is at once the study (1) of substance and its principles, (2) of the
per se attributes of substance, and (3) of the first principles of demonstration, i.e., the
common axioms.\textsuperscript{56} The first and third aporias suggest that metaphysics will study the
principles and causes of substance, though it is not yet clear which principles and of which
substances. Out of the second aporia results the treatment of the common axioms in \textit{Meta}.
4.3-8. Finally, the fifth aporia suggests the treatment of the per se attributes of substance
that is described in 4.2. It should not be assumed that the method of each of metaphysics’
tasks will necessarily be the same as that of the others.\textsuperscript{57} On the contrary, it is more than
likely that the methodologies for the three tasks of metaphysics will be different. Whereas
one might reasonably expect that the per se attributes of substance will be proved through
a demonstration, it is unlikely that an investigation into the principles of demonstration
itself will be demonstrative. It would be wrong to assume that the former cannot be
demonstrative just because the latter cannot.\textsuperscript{58} If the three tasks of metaphysics are not
unified by their methodology, however, it is necessary to explain how they can all fall
under the same science. This will be possible once we have understood Aristotle’s
approach to each of the three tasks.

\textsuperscript{56} These tasks are all introduced in \textit{Meta}. 4.1 and 4.3. \textit{Meta}. 4.1 introduces the second (1003a21-6) and
then the first (a26-32) task; the third is introduced in \textit{Meta}. 4.3.

\textsuperscript{57} The assumption that metaphysics will have only one methodology seems to be the root of much of what
Irwin says about the issue; see Irwin 1988: 162-3, 179-80. Irwin takes the methodology for proving the
common axioms to be “the method for first philosophy” (p. 180).

\textsuperscript{58} As Irwin does (1988: 162).
Our study of the *Analytics* has shown that an Aristotelian science must be the study of the causes and attributes that belong universally to a specific nature. In *Meta.* 4.1 Aristotle introduces metaphysics as a science that studies the causes (1003a26-32) and attributes (a21-6) of being qua being. The phrase “being qua being,” however, has proven extremely resistant to understanding and has received at least three incompatible interpretations in recent scholarship. Likewise, it is far from clear how metaphysics can study being universally. It is almost a commonplace that the universality of metaphysics is due to προξ ἔν equivocity, but there is little agreement on what this equivocity consists in and how it generates universality.¹ Neither the phrase “being qua being” nor προξ ἔν equivocity receives a sustained independent treatment in the *Metaphysics*: Aristotle seems to assume that his hearers already know what “being qua being” means, and προξ ἔν equivocity is introduced piecemeal and in a way that does not make explicit the relations between the various instances or even the identity of the primary instance.² Yet one’s interpretation of the *Metaphysics* as a whole is likely to be not only influenced but largely determined by how one understands these two concepts. In the present chapter we shall be concerned to elucidate the phrase “being qua being” and its relation to the nature of being, and to clarify Aristotle’s use of προξ ἔν equivocity to identify the nature of being in

¹ Several prominent examples of the use of προξ ἔν, from otherwise different interpretive approaches: Owen 1960; Leszl 1975: 228-36; Owens 1978¹: 264-75. The role of προξ ἔν equivocity is admitted but downplayed by Irwin (1988: chap. 8 passim, see esp. notes 24-5). One notable dissenter from the view that προξ ἔν equivocity provides a solution for the universality of metaphysics is Aubenque (1962: 191-8; 1964: 123-4); see also Thorp 1989: 117-21. Owen introduced the convenient terminology of “focal meaning” to refer to προξ ἔν equivocity. We shall retain the older less interpretive terminology, however, because the nature of προξ ἔν will frequently be at issue.

² *Meta.* 4.2 identifies substance as the primary instance of being, gives no indication of a προξ ἔν equivocity primary and secondary instances of substance. Moreover, the passages that may indicate this (8.3.1043a37, 12.10.1075a18) do not draw one’s attention to the fact.
substance. We shall finish by sketching the account of the nature of being that will be
developed in subsequent chapters.

I

The principal question that must be asked about the phrase "being qua being" is
whether it is meant (1) to be taken as a whole to identify some nature under investigation
or (2) to indicate how and in virtue of what nature metaphysics studies being. The
distinction is a subtle one, but of crucial importance for a correct understanding of
Aristotle’s programmatic remarks in Meta. 4 and 6.3 This question is different from the
related question concerning the nature of being. According to some interpreters, for
instance, the nature of being in Aristotle is some quasi-generic common being (ens
commune); according to others it is divine being. If one accepts the first interpretation of
the phrase “being qua being,” then the answer about the meaning of “being qua being” will
be the same as the answer about the nature of being: “being qua being” will also refer
either to a quasi-generic common being or to divine being.4 On the second interpretation,
however, the question whether “being qua being” refers to common being or divine being
does not have an answer, because “being qua being” does not refer to the nature of being.
On this interpretation, the words “qua being” are used adverbially within the phrase
“being qua being” to indicate the nature qua which metaphysics studies being.5 In
particular, it indicates a study of the attributes and causes that belong to beings universally
and qua sharing in the nature of being, as opposed to those which may belong to them qua

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3 Aristotle introduces metaphysics as the science of being qua being at Meta. 4.1.1003a21-32; cf. Meta.
4.2.1005a14-18; 6.1.1025b3-18, 1026a30-2; cf. 6.4.1028a3-4.
4 For the view that being qua being is something like ens commune see Leszl 1975: 145-68; for the view
that being qua being is divine being see Merlan 1959, 19603, and 1968. Owens accepts the view that
“being qua being” refers to a nature but recognizes that it cannot be exclusively either common being or
divine being; on the three senses of “being qua being” according to Owens see 19783: 456.
5 Stevenson 1975: 47. For similar interpretations see Code 1997: 350-1; Cleary 1994: 66-7; S. Mansion
and Dhondt) use the terminology of “formal object” to indicate the nature qua being metaphysics studies
being. The terminology is non-Aristotelian, may mean different things to different interpreters, and thus is
better avoided.
something else that is true of them (e.g., being material). We shall point to texts both in the *Posterior Analytics* and in the *Metaphysics* that show that it is the second interpretation that should be adopted. This interpretation does not require, moreover, that one understand the nature of being as a genus or as some quasi-generic common being.

The starting point for an investigation into the meaning of “being qua being” in the *Metaphysics* should be Aristotle’s treatment of the “qua” (fi) locution in the *Posterior Analytics*. This locution first appears in *APo*. 1.4 as part of Aristotle’s demand that predicates that are strictly καθ’ αὐτό to a subject also belong to it fi αὑτό (qua itself). A predicate that belongs fi αὑτό to a subject belongs to every instance of the subject and to that subject primarily. The subject is the cause of the properties or per se attributes that belong to it fi αὑτό. In the *APo*. Aristotle uses the equality of a triangle’s interior angles to two right angles, a property of triangles qua themselves, to illustrate his meaning. The property is not fi αὑτό to plane figures because it is not true of any random plane figure (it is true only of plane figures having three sides). Nor is it fi αὑτό to isosceles triangles, because it does not belong to them primarily. It belongs to them not because they are isosceles (ὁτι ἵσοσκελες, cf. 1.24.85b39) but because they are something else (ὅτι ἀλλο, cf. 85b29, b38), that is, because they are triangles. Since isosceles triangles are triangles, the properties of triangles will also belong necessarily to isosceles triangles and hence the study of triangles will study attributes that do in fact belong to isosceles triangles. It is possible to take an isosceles triangle and ask what attributes belong to it just because it is a triangle. Likewise, it is possible to distinguish between the attributes that belong to human beings qua human and those that belong to us qua animals. Hence the “qua” locution may be used in one of two ways: it may be used to indicate either the study of something qua something else (isosceles triangles qua triangles, or human beings qua animals) or the study of something qua itself (triangles qua triangles or human beings qua

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6 It is possible that not all things that have a claim to the name “being” do actually share in the nature of being; see pp. 85-89 below. In this case they will be studied somehow in relation to something that does share in the nature of being.

7 *Pace* Stevenson, who assumes that to show that “qua being” is used adverbially is to show that being is a genus or quasi-generic. Although Stevenson gives a very clear account of the affinities between *Meta.* 4.1 and *APo.* 1.4, he ignores the introduction of πρὸς ἐν equivocity in *Meta.* 4.2, not to mention the identification of the science of being qua being with theology in *Meta.* 6.1.

8 Cf. *APo.* 1.4.73b25-74a3, 1.24.85b4-86a30, discussed in section IV of chapter 1.
human beings). On the other hand, there is nothing in the *Posterior Analytics* that is just “triangle qua triangle.” The “qua” locution is used to indicate the nature qua which the thing under investigation is being studied; it is not used to indicate the nature or genus itself.

Let us momentarily suppose, counterfactually, that being is a genus and see what happens when we apply the *APo.* explanation of ἰ αὐτό to it. The genus including being as a whole would be divided into species, say material (thus movable and sensible) and immaterial (thus immovable and suprasensible) being. The genus would be the subject of metaphysics and one of the species (material being) the subject of physics. On this account metaphysics would study per se attributes that are in fact necessarily also attributes of material beings, but belong to material beings not because they are material but because they are beings. Although the study of material beings qua material and movable (i.e., the properties that belong them ἰ αὐτό) belongs to physics, material beings nevertheless are beings and have the attributes that belong to them qua beings. They would be beings, on this account, because they belonged to the genus of being. It turns out, of course, that being cannot be a genus, and so it is necessary to give some other account of the way things other than the nature of being have causes and attributes qua being.

In the *Posterior Analytics* “qua” is used to indicate the level of generality at which an attribute belongs to its subject within a single science. Isosceles triangles are members of a species of triangle; hence the study of isosceles triangles qua triangles falls under the same science that studies them qua isosceles triangles, that is, plane geometry. In *Meta.*

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9 Stevenson 1975: 43.
10 *Meta.* 4.2 and 7.1 rather suggest a division into categories, but there is reason to believe this is the prior division. This division also gives us the distinction between physics and first philosophy.
11 To anticipate, precisely because being is not a genus, the science of the “species” immaterial being collapses into the science of being qua being. The *APo.* examples of “qua” apply, of course, to different levels of generality within the same science; on their application to distinguish between two sciences see the next paragraph.
12 Compare: The study of triangles will study the per se attributes of triangles qua triangles. In so doing it will also study attributes that belong to isosceles triangles, but qua triangle rather than qua isosceles. Again the relevant *APo.* text is 1.24.85b23-86a3.
13.3, however, Aristotle uses “qua” to show how numerically one and the same object can be studied by two different sciences:

Now, [1] just as certain universal propositions in mathematics, which are about things not existing apart from magnitudes and numbers, are indeed about magnitudes and numbers but not qua such as having a magnitude or as being divisible, clearly, so [2] there may be propositions and demonstrations about sensible magnitudes, not qua sensible but qua being of such-and-such a kind. For [3] just as there are many propositions concerning sensible things but only qua moving, without [4] reference to the whatness [tι ἐστιν] of each of these and the attributes that follow from it—and it is not necessary because of this that there should exist either a moving of a sort which is separate from the sensible thing or is some definite nature in the sensible thing—so also [5] there will be propositions and sciences about things in motion, not qua in motion but only qua bodies, or only qua planes, or qua lengths, or qua divisible, or qua indivisible with position, or just qua indivisible. (1077b17-30)13

The purpose of this passage is to establish the science of mathematics in such a way that does not require that mathematical objects exist separately from the sensible magnitudes of which they are attributes.14 Just as universal mathematics does not require the existence of a universal quantity apart from magnitudes and numbers, and physics does not depend on a motion-in-itself existing apart from sensible substances in motion, neither do the sciences of magnitudes and numbers (geometry and arithmetic) require the existence of such things apart from sensible substances. It is enough that the objects of mathematics belong to sensible things as accidents or attributes themselves (1078a2-9).

The “qua” locution is used to show how numerically one and the same thing may be studied by different sciences by isolating different things that are true of it, whether these be quantitative accidents or the difficult-to-grasp actuality that is motion.15

Mathematics studies sensible things qua quantities of various sorts, physics qua moved. In

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13 Aristotle is referring to several different sciences. The propositions listed at [1] appear to be the propositions of universal mathematics; cf. *APo.* 1.5.74a17-25; *Meta.* 6.1.1026a27. At [2] Aristotle refers generically to the various mathematical sciences listed in increasing order of abstraction at [5]. The propositions listed at [3] appear to be propositions in physics. What is Aristotle referring to at [4]? The parallel between 1077b23-4 and 6.1.1025b10 suggests that Aristotle may be referring to metaphysics, but the parallel is not conclusive.


15 Although it is clear that motion does not exist apart from substances, it is not clear whether it belongs in any of the categories.
particular, these sciences study the principles and causes and per se attributes of things qua magnitudes or qua moved. Metaphysics, by contrast, studies the principles and attributes of things not qua having some other characteristic but qua beings; otherwise put, it is the science of being qua being. In Meta. 4.1 Aristotle emphasizes that no other science investigates being universally or qua being. The implication is that metaphysics does investigate being universally and qua being. The other sciences cut off a part of being and investigate the attributes of that part; that is to say, they investigate beings qua having some other nature.

In Meta. 6.1 Aristotle describes metaphysics as a science that investigates the causes and principles of beings qua beings. It is worth noticing the grammar of the "qua" location: it is not the causes of some nature called "being qua being" that are being

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16 Meta. 4.1.1003a21-32; 4.2.1003b17-19, 1005a14-18; 6.1.1024b3-4, 6.4.1028a3-4. Cf. Stevenson 1975: 43-6. At Meta. 11.7.1064a28-9 Aristotle asserts the existence of a science τοῦ ὄντος ἕν καὶ χαριστόν; and at DA 1.1.403b15-16 Aristotle states that first philosophy studies things Ἐ ἱκεχωρισμένα. Many scholars reject 11.7 on the grounds that the conjunction of ἕν with <ἐν> χαριστόν is un-Aristotelian (see Chen 1961; Mansion 1958: 219; Aubenque 1983). The DA text, however, shows that first philosophy studies things qua separate, and Meta. 6.1.1026a2-2 identifies the science of being qua being with theology and first philosophy. Therefore we should expect a science of being qua being also to be a science of being qua separate, whether or not 11.7 stated this explicitly. On the interpretation of ἕν καὶ χαριστόν see both Décarie (1983: 311).

17 Meta. 4.1.1003a23-5: οὐδεμία γάρ τῶν ἄλλων ἐπισκόπεῖ καθόλου περί τοῦ ὄντος ἕν ὡς ἄλλα μέρος αὐτοῦ τι ἀποτελομέναι περί τούτῳ θεωρεῖ τὸ συμβεβηκός. To study something universally (καθόλου) is the same as to study it ἕν αὐτό (Ἀρ. 1.4.73b25-7), i.e., for metaphysics, ἕν. Thus αὐτοῦ (a24) will refer not to "being qua being" but rather just to being: the special sciences will study beings, but not qua beings.

18 Cf. the Meta. 13.3 and Phys. 2.2 passages cited above. The clearest instance of "being qua being" used adverbially to distinguish metaphysics from the other sciences is at Meta. 11.4.1061b21-32: "Mathematics [investigates a part of being] . . . not, however, qua being, but qua continuous in one or two or three dimensions, whatever each of them may be. Philosophy does not inquire into the attributes which belong to a part of being qua a part of being; it investigates each of such parts but only qua being. The science of physics pursues its investigations in the same manner as mathematics; for physics investigates the attributes and the principles of beings qua in motion and not qua being [τὰ συμβεβηκότα γὰρ ἡ φυσική καὶ τὰς ἀρχὰς θεωρεῖ τὰς τῶν ὄντων ἕν κινομένα καὶ σύχ τε ὅντα]. But we said that the first science is concerned with its objects to the extent that they are beings [καθ' ἔσον ὅντα τὰ υποκειμένα εἰστιν], and not qua some other thing [σὺν ἕν ἐτερόν τι]." Physics and metaphysics may study the same beings, the former qua moved and the latter qua being.

The authenticity of Meta. 11 is disputed. The use of "being qua being" to refer to substance at 11.3.1061a6-10 (a use inconsistent with the adverbial account demanded by 1061b27-32) does not inspire confidence on matters of authenticity; see S. Mansion 1955: 160 n. 67; and A. Mansion 1958: 215-16. Even if not by Aristotle, the 11.4 passage nevertheless constitutes an astute synthesis of the uses of the "qua" location in those passages acknowledged to be genuine.
sought, but rather the causes of beings, qua beings. Metaphysics is contrasted with those sciences that investigate a certain kind of being or a certain genus (δύν τί καὶ γένος τί), but not being ἀπλῶς or qua being. The latter sciences thus study beings qua something other than being. The implication is that the beings studied qua something other than being by physics and mathematics will also be studied qua being, that is, by metaphysics.

The passages cited show that the adverbial use of “qua” in the Posterior Analytics is carried over to Aristotle’s division of the sciences in the Physics, Metaphysics, and De anima. In the passages where Aristotle defines the scope of metaphysics using the “qua” locution, the locution is used to indicate the nature in virtue of which metaphysics studies beings that, at least in some cases, are studied by mathematics or physics qua having some other nature. There is nothing—whether divine being, a genus of being, or some quasi-generic ens commune common to all beings—that is simply “being qua being.” Metaphysics is rather the study of the per se attributes, and principles and causes of all beings just to the extent that they are beings. It is thus the study of the principles and attributes of being qua itself (ἡ αὑτό), although the equivocity of being requires that ἡ αὑτό be taken in a qualified sense. The being of the secondary instances will be studied “qua itself” only in the sense that it is studied qua the nature found in the primary instance.

Owens objects to the adverbial reading of the “qua” locution on the grounds that it results in an unacceptable “empty” conception of being. This reading, Owens maintains, takes for granted that being is a nature that can be abstracted from any random instance in the way the nature of man is abstracted from any random human individual. The history of philosophy shows clearly enough that the attempt yields only an empty notion, and leads up to the demand that the term “being” should be banished from the vocabulary of the science. The possibility that being qua being is a being at least deserves serious consideration from anyone who is interested in claiming a content for it.

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19 αἱ ἀρχαι καὶ τὰ αὐταὶ γινόμεναι τῶν δυναμικῶν, δῆλον δὲ δὲ ὧν ἡ ἰζνος (1025b3-4). Cf. 4.1.1003a29-31 and 6.4.1028a3-4, where ὥν is similarly separated.
20 Meta. 6.1.1025b4-10. Both Apostle and the ROT translate b7-10 as indicating that the particular sciences study a certain genus not qua being. The genus of quantity, for instance, is in some sense a being, but mathematics studies it qua itself (qua quantity) rather than qua being.
One may agree with Owens's insistence that the nature of being be found in a particular being rather than in a genus if the notion of being is to have any content. As we have seen, however, the question is whether Aristotle is using the phrase "being qua being" to refer to the nature of being in the first place. We have seen that in the *Posterior Analytics* Aristotle does not use "triangle qua triangle" to refer to the genus of triangle; rather, certain attributes belong to triangles qua triangle, others qua plane figure, and so forth. The nature of triangle is not expressed as "triangle qua triangle" but rather indicated with the word "triangle" in the phrase "qua triangle": various things (both the species of triangle and the sensible substances which have triangularity as an accident) are studied "qua triangle." If we carry this principle over to metaphysics, we should expect the nature of being—whatever it is—to be indicated not by the phrase "being qua being" but rather to be the being qua which the various instances of being are studied. The identification of the nature of being with a particular being rather than with a genus, and the rejection of generic univocity as a basis for universality, do not change this fact.

Apart from the textual evidence we have presented, why should we be reluctant to identify being qua being with the nature of being? The most serious problem presented by the identification is reconciling it with Aristotle's demand that the science of being qua being investigate the principles and causes of being qua being. If we take "being qua being" to refer to the nature of being, and the nature of being is either some being common to all things or divine being, then it seems impossible that there should be principles or causes of being qua being. There cannot be something that is the cause of *all* being: otherwise it would also be the cause of its own being. For the same reason "being qua being" cannot refer to divine being if god is meant to be an ultimate cause rather than something that itself has causes. Textual evidence demands that we somehow identify the science of being qua being with theology; it does not demand that "being qua being" refer only to god.

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22 Otherwise put, in the phrase "being, qua being," the nature of being will be indicated by "being." "Being," will indicate the various instances of being that are studied qua being.

23 *Meta.* 4.1.1003a26-32, 6.1.1025b3-4, 6.4.1028a3-4; at 4.2.1003b17-19 this investigation is identified with investigation into the first causes of *oũtē.*

24 *Meta.* 6.1.1026a29-32. For the identification of being qua being with Aristotle's god see Merlan 1959, 1960; and 1968. Owens takes this passage and 11.7.1064b7-14 as evidence that one referent of "being
Recognizing this problem, Owens maintains that "being qua being" must refer not only to separate substance as prior to other instances of substance but also to the sensible composite as prior to its accidents. On this reading, the principles and causes of being qua being mentioned in Meta. 4.1-2 and 6.1 would be the principles and causes of sensible substance. The problem with this interpretation is that, if "being qua being" could refer to sensible substance tout court, it would become difficult to see how the metaphysical treatment of sensible substance will differ from its treatment in physics. Both sciences would study sensible substance and thus, on Owens’s interpretation of "being qua being," both would study an instance of being qua being.

Aristotle distinguishes between metaphysics and physics as studying beings (sensible substances among them) qua beings versus beings qua moved. If sensible substance is already an instance of something called "being qua being," the distinction between the study of sensible substance qua being and qua moved is no longer available. In order to use this distinction one must maintain that sensible substance is just an instance of being, which can be studied qua being (by metaphysics) or qua moved (by physics). The words "qua being" do not refer to the kind of being that is studied by metaphysics but rather to the nature qua which metaphysics studies beings.

Owens 1978: 36, 456. Owens points to one strong piece of textual evidence for this meaning of "being qua being" at Meta. 11.3.1061a8-10, where "being qua being" appears to be used synonymously with "substance" (cf. 4.2.1003a33-b16) and where an adverbial reading of "qua being" does not seem possible. Certainly Aristotle does believe that the science of being qua being is in the first instance the science of substance (4.2.1003b16-19). There is no passage, however, that states that by "being qua being" Aristotle means substance, and if this passage is taken to imply this, it is incompatible with several other passages in 11.3-4 (1061a34-5, b6-7, b21-32); see note 18 above. If 1061a8-10 is from Aristotle’s pen, it can only reflect a careless conflation of the phrase "being qua being" and the nature of being.

In addition to referring to god and to sensible substance, Owens also takes being qua being to refer to the study of being in the categories as opposed to accidental being and being as truth (456 and n. 13). Owens cites 6.4.1028a3-4 for this sense. Briefly, I think that here Aristotle is making the distinction between being in the categories and the derivative senses not with ἔνδομεν (a4) but rather with ἐπιμεθύσκει (b3)—notice that ἔνδομεν ἐπιμεθύσκει does not appear as a single phrase, but rather ἔνδομεν appears to indicate the way in which the "principles and causes" (a) belong to being, just as it does at 1025b3-4.

Owens 1978: 272-3. On Owens’s view this serves as a solution to the first aporia: all four causes are shown to belong to an instance of being qua being, i.e., the sensible composite.

If one should accept the adverbial reading of "being qua being," then the debates over whether "being qua being" refers to sensible being, divine being, or some sort of common being can be avoided, because "being qua being" does not refer to the nature of being in the first place. Metaphysics can thus be understood as the investigation of the causes and attributes that all beings have qua beings, that is, to the extent that they share in the nature of being. In Meta. 4.1 Aristotle identifies the search for the causes of this nature in things with the search for the highest causes:

Since we are seeking the principles and the highest causes [ἀκροτάτας αἰτίας], clearly these must belong to some nature in virtue of itself [καθ’ αὐτήν]. If then, also those who were seeking the elements of things were seeking these principles, these elements too must be elements of being, not accidentally, but qua being [μὴ κατὰ συμβολὴν ἐκὸς ἅλλα’ ἂν δὲν]. Accordingly, it is of being qua being that we, too, must find the first causes. (1003a26-32)²⁸

As Urbain Dhondt points out, this passage is significant for its explicit identification of the search for the highest causes with the search for the causes of being qua being.²⁹

Aristotle’s predecessors, too, sought the highest principles, and in this sense Aristotle is continuing their project. What his predecessors did not clearly recognize is that these causes must be sought as the causes of a specific nature in things. The causes sought in metaphysics are not simply the causes of everything that is true of beings, but are precisely the cause of the “beingness” of these things and belong to this nature in virtue of itself (καθ’ αὐτήν).³⁰ Just as physics will investigate the causes of motion in things and geometry the causes of (e.g.) triangularity, so metaphysics will investigate the causes of beingness wherever this nature is found.³¹

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²⁸ Although Aristotle normally reserves the term “element” (ἐντόικεῖον) for causes in the sense of components (Meta. 5.3), here he appears to use it interchangeably with “cause.” The reason perhaps is that for Aristotle’s predecessors the causes were characteristically causes in the sense of components, and Aristotle is appealing here to a sense of continuity between his project and that of his predecessors.


³⁰ Cf. APo. 1.9.76a5-6: scientific knowledge must proceed from principles that are τῶν ἑκείνου ἃ ἑκείνο—καθ’ αὐτό having the same sense as καθ’ αὑτίν in its strict sense (1.4.73b28-9).

³¹ Thus metaphysics will study “l’être, les étants, sous l’angle de leur ‘entité’, de leur essitas” (Dhondt 1961: 9).
II

The identification of the search for the highest causes with that of the causes of being solves one problem that Aristotle associates with the search for the highest causes, while raising another problem about the nature whose causes are sought. The identification of the highest causes as causes of being allows metaphysics to meet the APo. requirement that all causes and attributes belong to a specific nature: there can be no universal science of everything. It also provides a solution to the first aporia. The first aporia assumed that metaphysics would have to study all the causes. It is now clear that the universality of metaphysics is generated not by studying all the causes but rather by studying the causes of a nature (being) that is somehow common to all things. On the other hand, it raises the difficult question, What does it mean for there to be a nature of being, and what is it in things that the causes of this nature are supposed to explain? In physics, for instance, the explanandum is the familiar phenomenon of motion in its variety of species; but it is far from clear what the analogue for this is in metaphysics.32 Let us explain how metaphysics avoids being a universal science in the sense criticized in the APo., before moving on to Aristotle's precision of the nature of being in Meta. 4.2.

As Aristotle argues in APo. 1.9, to know something scientifically is to know it using principles that are proper to the genus under investigation: the attribute demonstrated to belong to the subject should belong to it καθ' αὐτό and be demonstrated from principles that belong to the subject ἃ τὸ (76a4-9).33 The principles of the genus cannot themselves be demonstrated, for this would involve crossing-over from one genus to another, but this is impossible (APo. 1.7). Therefore, there can be no single science that demonstrates every possible attribute and investigates every possible cause, because there are multiple irreducible subject genera. This necessarily rules out the kind of universal science described, for instance, in Plato's Republic:

Understand then, said I, that by the other section of the intelligible I mean that which the reason itself lays hold of by the power of dialectic, treating its

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32 On motion as the explanandum for physics see Phys. 2.3.194b17-23; Meta. 11.4.1061b28-30, 13.3.1077b22-7.
33 Aristotle also makes allowance for the subordinated sciences: 76a9-15. The arguments summarized here are discussed at length in section V of chapter 1.
assumptions not as absolute beginnings [ἀρχάς] but literally as hypotheses, underpinnings, footings, and springboards so to speak, to enable it to rise to that which requires no assumption and is the starting point of all [τὴν τοῦ πάντων ἀρχήν], and after attaining to that again taking hold of the first dependencies from it, so to proceed downward to the conclusion, making no use whatever of any object of sense but only of pure ideas moving on through ideas and ending with ideas.\textsuperscript{34}

The relation between Plato’s and Aristotle’s accounts of science is complex, but it is clear that Aristotle would reject the implication in this passage that there could be a science that proves all conclusions starting from a single ἀρχή. Dialectic still treats all things in Aristotle, but precisely because of this fact dialectic is not scientific.\textsuperscript{35}

It is true that the principles studied by metaphysics are universal and in some sense the principles of all things: they are principles of being qua being and everything is in some sense a being. As we have seen, however, they are principles not of everything that happens to be true about all things but of a specific nature in things, that is, of the fact that the beings studied both by metaphysics and by the other sciences are \textit{beings}.\textsuperscript{36} The other sciences use additional principles to explain motion, triangularity, and the like, principles that are not directly studied in metaphysics.\textsuperscript{37} In this respect the science of being is like universal mathematics: universal mathematics studies the properties that belong to all quantities qua quantity, thus necessarily also certain properties that will belong to triangles (qua quantity), but does not contain all the principles necessary for explaining the properties of the various species of quantity qua triangles, cubes, and so forth. The wise man “in a sense knows all things” (\textit{Meta.} 1.2.982a23), but this is not in the sense of being able to prove all conclusions about all things.\textsuperscript{38} As Aristotle writes in \textit{APo.} 1.32, as one


\textsuperscript{35} \textit{APo.} 1.11.77a26-35.

\textsuperscript{36} Irwin (1988: 162 and n. 23) maintains that it is the fact that metaphysics is a second-order, non-causal science that prevents it from disturbing the autonomy of the special sciences. See our Introduction, pp. 4-7, and chapter 2, p. 59.

\textsuperscript{37} In the event, form (both separate and immanent) is a principle not only in metaphysics but also as a τέλος of motion, which is studied in physics. For Aristotle’s recognition that some of the principles of physics are not wholly physical see \textit{Phys.} 2.2.194b9-15, 2.7.198a24-31, a35-b4. These passages receive extended discussion in chapter 7 below.

\textsuperscript{38} \textit{Pace} Leszl (1975: 110) who seeks to assign \textit{Meta.} 1.2 to a very early point in Aristotle’s career on the grounds that this passage suggests a Platonic account of a universal science. Leszl takes Aristotle’s comparison of the accuracy of arithmetic and geometry (982a25-8) as contradicting the doctrine of the \textit{APo.}, but exactly the same comparison is found at \textit{APo.} 1.27.87a34-5.
seeks to demonstrate additional conclusions, one must introduce additional principles.\textsuperscript{39} There is nothing in the \textit{Metaphysics} to suggest that Aristotle has come to think otherwise.

If metaphysics does not violate the strictures against a universal science in \textit{APO}. 1.9, why does Aristotle not acknowledge the existence of metaphysics there? It would appear that the answer is that Aristotle has not yet developed the notion of commonality through \(\pi\rho\delta\zeta \varepsilon\nu\) equivocality. According to \textit{APO}. 1.9, the commonality required for a genuine science can be achieved in only two ways: either through generic univocality or through subordination, which is possible because the objects of physical investigation necessarily have certain quantitative attributes and (as Aristotle will later put it) can be studied \textit{qua} quantity.\textsuperscript{40} Being in the \textit{APO.}, however, appears to be merely equivocal: there is no commonality between its various genera and any attempt at a universal science of being would necessarily be crossing over genera having nothing real in common.\textsuperscript{41}

Aristotle's insight in the \textit{Metaphysics} is that the various genera of being do have something in common, even though this is not univocally predicatable of them. Being is not merely equivocal but a nature that belongs primarily to one instance and derivatively to secondary instances.

Given that there is a nature of being somehow common to all the genera of being, what sort of thing should we expect this nature to be, and what should it mean to seek the causes of being? Let us briefly consider what the parallel would be in an \textit{APO}.-style science of a univocal genus. On the \textit{APO.} account of causality the causes of an entity are simply expressed in its definition, which is the formula of its \(\tau\iota \varepsilon\sigma\tau\iota\).\textsuperscript{42} Although the examples of

\begin{footnotesize}
\textsuperscript{39} \textit{APO}. 1.32.88a30-b29, discussed in chapter 1, pp. 41-2 above.
\textsuperscript{40} \textit{APO}. 1.9.76a4-15; on subordination see \textit{APO}. 1.13, \textit{Meta}. 13.3.1078a14-21; though cf. \textit{Phys}. 2.2.194a7-12.
\textsuperscript{41} Aristotle's denial that being is a genus is at \textit{APO}. 2.7.92b14. Apart from any mention of metaphysics in the \textit{APO.} the clearest evidence that he does not envisage such a science is (1) the absence of any discussion of \(\pi\rho\delta\zeta \varepsilon\nu\) equivocality and (2) his assigning the study of the common axioms to dialectic (77a26-35). Rist (1989: 263) seems to think that it is the demand that the principles of each science not be demonstrated that rules out metaphysics in the \textit{Posterior Analytics}: "the science of being as such would involve confusing the principles of the different particular sciences." Metaphysics, however, makes no claim to demonstrating the principles of the particular sciences: rather, it investigates the principles and demonstrates the \textit{per se} attributes of being. In order to explain phenomena such as (e.g.) motion, additional principles would be required.
\textsuperscript{42} \textit{APO}. 2.2.90a14-15, 93b5-7, b29. Thus predicates predicated according to type (1) \textit{per se} (\textit{APO}. 1.4.73a34-7) will actually be causes of the entity in their capacity as elements of its \(\tau\iota \varepsilon\sigma\tau\iota\). For an expression of the implications of this view with regard to the genera and species see \textit{Meta}. 3.3.998b3-8.
\end{footnotesize}
causal definitions that Aristotle develops in book 2 of the *Posterior Analytics* are definitions of per se attributes, it is clear from *APo.* 2.2 that Aristotle holds that the causes are expressed in definitions also for the subjects of sciences. Likewise, although Aristotle does not use the "qua" locution in the *Posterior Analytics* to indicate the level of generality at which causes belong to what they are causes of, it is easy to see how this could be done. Triangles, for instance, belong to the species of triangle and to the genus of plane figure. Qua triangles, their causes would be found in the definition of triangles, qua plane figures, in the definition of plane figures. If $A$ is a species of $B$, then the causes of $B$-ness in $A$ will be the causes of $A$ qua $B$ (and expressed in the definition of $B$), whereas the causes of $A$-ness in $A$ will be the causes of $A$ qua $A$ (and expressed in the definition of $A$).

If being were a genus, we might finally arrive at the causes of being in triangles—the causes of triangles qua beings—which would be expressed in the definition of the genus "being." Triangles would be beings by virtue of belonging to this genus and their causes qua beings would be expressed in the definition of being. As a study of the causes of being metaphysics would in the first instance be a study of the species of the genus of being, and would be universal because the genus of being was univocally predicable of all beings. Even if we did not already know that for Aristotle being is not a genus, the thought of attempting a definition of something supposed to be univocally predicable of all things should dissuade us from attempting to understand being generically. Any attempt to give a genus of being intelligible content through a differentia would necessarily be to distinguish it from some other thing; but this other thing must also be a being and hence could not be something to be distinguished from being. Understood in this sense, being must have no intelligible content whatsoever, must, in Owens's words, "vanish into nothingness."

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43 The examples of per se attributes are thunder and eclipses in *APo.* 2.8-10 and leaf-shedding in *APo.* 2.16-17. On causal definitions of the subjects of the sciences see especially *APo.* 2.2.90a9-15 (together with a3-5), and a31-4.

44 Though there are reasons why Aristotle does not attempt to develop an account of causality in this way. See generally chapters 6-7 below.

45 It is in this sense that the genus of being would be a principle: see *Meta.* 3.3.998b3-8.

Aristotle himself argues against the generic conception of being in *Meta*. 3.3. If being and unity are genera, they must be differentiated into species, and the differentiae that create the species must themselves be and be one. However, it is impossible to predicate either the species or the genus of its differentiae. This may be seen intuitively by considering what a differentia of the genus of being would have to be. In order to differentiate the differentia must (1) exist and (2) be somehow different from the genus it differentiates. If being is univocal, however, to the extent that the differentia exists it will be no different from the genus it differentiates, and to the extent that it is different from being it will not exist. 47 Otherwise put, if being is univocal, anything different from the genus of being will be simply not-being. A similar argument against univocity is found in Aristotle’s discussion of the eleventh aporia (3.4.1001a29-b1). If there is some being-itself or unity-itself, it is difficult to see how there could be anything other than being: “what is distinct from being does not exist, so the statement of Parmenides must follow, namely, that all things are one and this is *Being*.” 48 If we start from individual beings and attempt to isolate some nature that belongs to them all univocally, the result is an empty notion. If we start with a genus of being and attempt to differentiate species of being within the genus, the result is a Parmenidean world without plurality or change. 49

III

If the nature of being cannot be a genus, how should it be understood? One possibility, correctly rejected as an interpretation of Aristotle, is that that being in its primary instance is a subsistent act of existence and the beingness whose causes are sought is an act of existence distinct from the essence of the existent. 50 One of our central tasks will be to determine exactly what Aristotle *does* mean by beingness and the nature of

48 1001a31-b1. The argument of course depends on the assumption that being-itself and unity-itself are univocal. Aristotle’s reference to Parmenides is of course to the first half of the poem, ‘Ἀλήθεια’ (DK B2-8). As always, Aristotle is isolating what he takes to be the essence of the arguments of a predecessor.
49 Aristotle’s responses to Parmenides often emphasize precisely the fact that being is not univocal: *Phys.* 1.2.185a20-b5, b31-2, 1.3.186a24-5; *Meta*. 14.2.1089a7-16. On the Parmenidean background of πρὸς ἐν equivocity see Owens 19783: 269, 437; Dihondt 1961: 19-22.
50 That is, in broad outline, the Thomistic account of existence. On its rejection as an interpretation of Aristotle see, e.g., S. Mansion 1955: 179; Owens 19783: 292, 466-8.
being, and how it can be something with causes and attributes that belong to it ἄλλω. In *Meta.* 4.2 Aristotle takes his first step toward identifying the nature of being by reducing it to substance. The nature of being is in substance, and nonsubstantial beings are called beings by πρός ἐν equivocity and owing to their dependence on substance. Metaphysics will thus seek the causes and per se attributes of substance:

Now in every case a science is concerned mainly with that which is first, both as that on which the others depend [ἡρτηται], and as that through which the others are named [ὅτι ἄνεγονται]. Accordingly, if this is substance [οὐσία], it is of substances that the philosopher should possess the principles and causes. 

(1003b16-19)

We shall argue that there is evidence in book 4 that Aristotle intends a further reduction of substance to one genus of substance, primary substance. Although it would be reasonable to suppose a πρός ἐν relation between primary substance and any non-primary instance of substance, nowhere in *Meta.* 4 does Aristotle raise this possibility, going only as far as to isolate substance as one relatively primary kind of being whose causes are sought. If πρός ἐν equivocity is appropriate to describe the relation between primary οὐσία and other kinds of οὐσία, it is something over and above the πρός ἐν relation between substance and nonsubstantial being described here. In this case, Aristotle’s discussion in *Meta.* 4.2, while an important starting point, will not be exhaustive.

Aristotle clearly intends πρός ἐν equivocity to show how the science of substance can also be a universal science of being qua being. However, it is necessary to explain both the relation that constitutes πρός ἐν equivocity and why this equivocity should bring about universality. The introduction to πρός ἐν equivocity occupies relatively little space

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51 It is not made explicit until 1004b9 that it is also the per se attributes of οὐσία that the science of being qua being will investigate.

52 Cf. *Meta.* 7.1.1028a10-31, which explains πρός ἐν equivocity entirely in terms of substance versus the nonsubstantial categories. Note, however, that the list of derivative instances at 4.2.1003b5-10 is not limited to the other nine genera; there is also a πρός ἐν relation between being in potency and being in actuality which may be the basis for a πρός ἐν relation between the genera of substance (6.2.1026b1-2, and *Meta.* 8-9 generally, especially 8.3.1043a36-7, where πρός ἐν is mentioned explicitly). “It would be a mistake to assume, as it often is, that Aristotle thinks his task has been completed by showing how the various ways of being depend on the way of being of substances. For as soon as we start to pursue the question what is it to be for substance, it turns out that this question has a single answer as little as the question of what it is to be for a being does” (Frede 1987b: 87). Cf. Owens 1978: 273-5.

53 Questions related to the second problem: Can the derivative instances be studied “qua being,” and do they have any claim to being objects of metaphysics? Our analysis of the phrase “being qua being”
(4.2.1003a33-b19) in a chapter mostly devoted to the per se attributes of being, and Aristotle has relatively little to say about these problems. Taken together with Aristotle’s other statements about πρός ἐν equivocity, the chapter is of some help for explaining what dependence is implied by πρός ἐν. It is of relatively little help for explaining why this dependence generates universality, and we must wait for an account of the principles of being before we shall be able to suggest a solution for the second problem.

G. E. L. Owen has discussed the development of πρός ἐν equivocity up to the Metaphysics at length, and it is worthwhile to outline briefly his conclusions. Owen traces a development from Organon (where there is no sign of πρός ἐν equivocity and no science of being) through the Eudemian Ethics (which recognizes πρός ἐν but not a science of being) to Aristotle’s use of πρός ἐν to found a science of being in the Metaphysics. 54 As we have seen, Aristotle does not appear to recognize a science of being in the Posterior Analytics, and neither here nor elsewhere in the Organon is there any clear evidence for the existence of a conception of πρός ἐν equivocity. The case of the Eudemian Ethics is more interesting. In the EE Aristotle explicitly makes use of πρός ἐν to distinguish the kinds of friendship and even presents an account of what makes a πρός ἐν equivocal. There are three sorts of friendship, which are called “friendship” neither univocally (καθ’ ἐν) nor merely equivocally but πρός μίαν . . . καὶ πρώτην (EE 7.2.1236a16-19). 55 Aristotle immediately makes the comparison to medicine which will later be found in Meta. 4.2: souls, bodies, instruments, and actions can all receive the predicate “medical,” but the name belongs properly (κυρίως) to its primary instance, that is, to the art in virtue of which a man can be called a medical man (1236a19-23). What makes for a πρός ἐν equivocal is the fact that the derivative instances must be defined in terms of the primary instance (α21-3), that is, the priority in λόγος (or “logical” priority)

54 Owen 1960: 163-79; these themes are also developed in Rist 1989.
55 In the NE friendship is no longer a πρός ἐν equivocal; rather, friendships based on utility or pleasure are only friendships κατά συμβεβηκός (8.3.1156a16-17).
of the primary sense to the derivative senses. Thus a medical tool is defined as one which is used by someone possessing the medical art, and not vice-versa.

Elsewhere in the *Eudemian Ethics*, however, Aristotle unequivocally denies the possibility of a science of goodness or of being, on the grounds that goodness and being have different senses among the various categories and that there is nothing common to all these senses (1.8.1217b26-1218a6). It is not clear whether Aristotle recognizes a πρὸς ἔν relation between these senses; at any rate he does not mention πρὸς ἔν equivocity. Either Aristotle has not applied πρὸς ἔν equivocity to being, or he has not yet seen his way toward using πρὸς ἔν as the basis for scientific universality.

In the *Metaphysics* Aristotle does both. “The term ‘being,’” Aristotle writes in *Meta*. 4.2, “is used in many senses, yet not equivocally [ὅμωνόμως], but all of these are related to something which is one and a single nature [πρὸς ἔν καὶ μίαν φύσιν]” (1003a33-4). Some things are called beings because they are substances, other things by being somehow related to substances as attributes, generation, destructions, privations, etc. of substances. In such cases there can be a single science of such things: “not only does the investigation of objects named according to one nature [καθ’ ἔν] belong to one science, but also of objects which are named in accordance with one nature [πρὸς μίαν λεγομένων φύσιν]” (1003b12-14). These latter are καθ’ ἔν in a sense (τρόπον τινά, b14-15).

Aristotle’s examples of πρὸς ἔν equivocals in *Meta*. 4.2 follow the model of logical priority and posteriority presented in *EE* 7.2. The examples that Aristotle uses to clarify the πρὸς ἔν relation (medicine and health), and Aristotle’s account of this relation

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56 Thus Owen (1960: 171-2). Ferejohn (1980: 122) follows Owen up to a point. Leszl (1975: 233) appears to follow Owen on the conception of πρὸς ἔν as involving definitional connection, but maintains that this connection “does not require any assimilation of some of them to the primary one.” For Aristotle’s definition of logical priority and posteriority see *Meta*. 13.3.1077a36-b4.

57 Some commentators (Owen 1960: 184-5; Thorp 1989: 118-21) maintain that Aristotle’s denial at *EE* 7.2.1236a25ff. that the primary sense of friendship (a πρὸς ἔν equivocal) is also universal implies that Aristotle rejected πρὸς ἔν equivocation as a source of scientific universality in the *EE*. But note that Aristotle does in fact deny that being is a καθόλου at *Meta*. 4.2.1005a9, where he suggests that although being and unity are not καθόλου καὶ τάντα ἐπὶ πάντων there is nevertheless a science based on πρὸς ἔν equivocity. The *EE* 7.2 passage thus may not be incompatible with *Meta*. 4.2; for additional discussion see chapter 7, pp. 218-21 below.
for being itself, all suggest that the derivative instances of being are so called by being defined in terms of the primary instance.

The term "being" is used in many senses, yet not equivocally, but all of these are related to something which is one and a single nature [πρὸς ἕν καὶ μίαν φύσιν]. It is like everything that is called "healthy", which is related to health by preserving health, or by producing health, or by being a sign of health, or by being receptive of health. And what is called "medical" is similarly related to the medical art; for it is so called by possessing the medical art, or by being naturally adapted for it, or by being something done by it.58

Many things are called healthy and medical, always because of some relation to health understood as a state of an organism or medicine understood as a τέχνη. It is not the case that healthy food "has" the state of health in some derivative, attenuated sense: rather, it is called "healthy" precisely for its capacity to cause this state in its primary sense. The science of medicine or health will thus study, say, tools precisely in their capacity to be of use to someone with the τέχνη of medicine in his efforts to bring about health.

The same language appears in Aristotle’s account of the derivative instances of being. Of the derivative instances some are called beings by being attributes [πάθη] of substances, others by being on their way to becoming substances, or else by being destructions or privations or qualities of substances, or productive or generative either of substances or of whatever is related to substances, or negations of any of those or of substances. On account of this, we say that even nonbeing is nonbeing. (1003b7-10)59

The derivative instances include the other nine categories, but are not restricted to them.60 In particular, generations and destructions of substances, as well as things “on their way to becoming” substances, are called beings. Privations and negations of substances are beings in a sense. Somewhat surprisingly, things that are “productive or generative” (ποιητικὰ ἔν

59 As Owen (1960: 173 n. 23) points out, echoes of this list of derivative instances are found in Aristotle’s treatments of unity (1016b6-9), contraries (1018b31-8), potency (1019b35-1020a6), quantity (1020a14-32), perfection (1022a1-3), and falsity (5.29 passim) in Meta. 5.
60 That all the other categories are included among the derivative instances is not made explicit until Meta. 7.1 (1028a18-20); cf. 9.1.1045b24-33.
γεννητικό) of substances are included among the derivative instances, even though one might think that substances are dependent on them rather than vice-versa.⁶¹

Like the examples of health and medicine, these examples suggest that the nature of being lies only in substance. Nonsubstantial "beings" are so called only in virtue of their logical dependence on substance, and do not in any way possess the nature of being themselves.⁶² This view is stated in its strongest form by Owens:

the nature of being as such . . . is to be found only in Entity. The accidents will not possess the nature of Being in themselves. The nature according to which they are Being will not be their own natures. It will be the Entity of which they are affections.⁶³

Thus when we say that a man is pale, it is the man, and not in any way paleness, that exists:

. . . when we say 'The man is pale,' the man alone really is. It is he who is—pale. The paleness itself, considered just as its own nature apart from the Entity of which it is the affection, could not be said to be. If we say, with any meaning, 'Paleness is,' we are really saying 'The man is—pale.' The Being as such is that of the man. But 'paleness' is by its very nature an affection of man; and so it is, but only through and in the Being of the man. The nature of the man alone is in itself. When 'paleness' is said to be, the nature of the man—the Entity—is denoted by the verb.⁶⁴

Since the nature of being is in no sense found in paleness or any other accident, they should not have causes or per se attributes qua being: there should be no cause of "beingness" in something which does not in any way possess the nature of being (cf. 4.1.1003a26-32).

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⁶¹ Most things that are generative of substances will themselves be substances, as e.g., the father is the efficient cause of the child and the artisan of the artifact. Perhaps Aristotle has in mind such things as seed, which is like a tool used in the generation of a new animal (and thus γεννητικόν) but is dependent on the father and is not itself a substance (GA 1.22.730b9 ff.; cf. Alexander in Meta. 242.25-9).

⁶² Leszl (1975: 181-2) seeks to downplay the priority of substance, but with very weak arguments. His argument that the nature of being cannot be found in substance because metaphysics should study "the relationship between the primary part of being and the other ones" is not based on any textual evidence, but rather simply assumes an ontological account of the object of metaphysics.

⁶³ Owens 1978: 266. Cf. "The examples . . . stress the presence of the 'nature' in the primary instance alone."

⁶⁴ Ibid. Cf. Meta. 7.1.1028b18-25.
This interpretation clearly seems reasonable for some derivative instances of being. Non-being is simply a privation of being: we would not expect metaphysics to seek causes for it. There are likewise no causes of accidental being (Meta. 6.2-3), and the study of being as truth belongs more to a study of thought than to metaphysics. They have some claim to be called beings according to πρός ἔν equivocity, but they do not have causes and attributes of the sort that can be studied in metaphysics. They are studied in metaphysics only qua somehow related to something which does possess the nature of being. In Meta. 6.4 Aristotle explicitly excludes accidental being and being in the sense of truth from the objects of his investigation (1027b34-1028a4). Much the same might be said of those derivative instances that are essentially generations and motions, especially if, as there is reason to believe, "being" and ὀφσία carry with them the implication of (at least relative) permanence and changelessness. It is far from clear in Meta. 4.2 how these instances are related to the primary instance, but it does not seem to be by sharing in the nature of being itself.

Aristotle appears to make use of much the same reduction in his treatment of the nonsubstantial categories. These "are called 'beings' in view of the fact that they are quantities of being which is spoken in the primary sense, or qualities of it, or affections of it, or something else of this kind" (Meta. 7.1.1028a18-20). It is not so much "health" or "walking" that is a being but the healthy thing or the walking thing (a20-5). Referring back to 7.1, Meta. 9.1 reaffirms the basis of πρός ἔν equivocity in logical priority and posteriority: "it is in virtue of the formula of substance that each of the [other categories] is called a being; for all of these will have the formula of substance ἐξει τὸν τῆς ὀφσίας

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65 Accidental being and being as truth are contrasted with being in the categories (1026a33-b2). Being as truth is an "attribute of thought" (τῆς διανοίας τι πάθος, 1027b34-1028a1). By "accidental being" in this context I take Aristotle to be referring not to the nonsubstantial categories (which are dependent on substance) but rather to those which occur otherwise than necessarily or for the most part (6.2.1026b27-33). There are no per se causes, and hence no science, of what does not occur either necessarily or for the most part (1027a19-21).

The dismissal of being as truth here is puzzling given Aristotle's treatment of this topic in Meta. 9.10. On the other hand, Meta. 9.10 has the appearance of being "tacked on" to a completely unrelated treatment of actuality and potency; perhaps Aristotle is not himself responsible for its presence there.

66 Cf. again 4.2.1003b17-19.

67 There is no very satisfactory account of in what sense they are related and what sorts of relations justify a metaphysical study of these instances, however. For a beginning in this direction see Owens 1978: 271.

68 See our discussion below, pp. 96-97.
λόγον], as we said at the beginning of our discussion” (1045b24-32). The nonsubstantial categories possess essence (τί ἔν εἶναι), but only in a derivative sense (7.4.1030a17-b13). If we are looking for the nature of being itself, it is only to be found in οὐσία.

One may legitimately wonder whether logical priority and posteriority is sufficient to generate a πρός ἐν equivocal. One thing that is odd about conceiving πρός ἐν in terms of logical priority and posteriority is that logical posteriority is also the basis for type (2) per se predication. As we saw in our discussion of APo. 1.4, oddness and evenness are per se to number because they are defined in terms of it. Yet Aristotle never suggests that oddness and evenness are numbers in a derivative sense, or that maleness and femaleness (cf. 1030a21-8) are animals in a derivative sense. Robert Bolton, taking his cue from the fact that logical priority and posteriority is involved both in πρός ἐν and in type (2) per se, argues that to say that the universality of metaphysics is due to πρός ἐν equivocality is nothing more than to say that metaphysics studies primarily substance (its subject genus) and secondarily the per se attributes of substance, which are identical to the nonsubstantial instances of being. On this account, πρός ἐν would account for the universality not only of metaphysics but of any demonstrative science: the per se attributes of the subject genus are also somehow that genus in a derivative sense. Tempting as this solution may be at first sight, it is incompatible with Aristotle’s own account of the per se attributes of being. The attributes of being that Aristotle identifies in Meta. 4.2.1003b19ff. are not the same as the nonsubstantial instances of being. Furthermore, these attributes themselves have primary and derivative instances, which appear to follow the primary and derivative instances of being. The attributes and the secondary instances are two distinct classes. More generally, Bolton’s solution does not account for the fact that Aristotle seems to think that πρός ἐν equivocality solves a problem peculiar to metaphysics: on Bolton’s account we should see Aristotle maintaining that every science is unified by the fact that

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69 APo. 1.4.73a37-b2, 1.6.74b8-10; cf. Meta. 7.5.1030b14-28.
71 Thus number would be arithmetical in the primary sense, oddness and evenness in a derivative sense (p. 428).
72 See our discussion in chapter 5 below. Additionally, it is not clear that all per se attributes are predicated according to type (2) per se.
73 See chapter 5, pp. 136-8 below.
its genus and attributes are πρὸς ἐν equivocals. There is never any hint of this, either in the Metaphysics or elsewhere.

The foregoing suggests that logical priority and posteriority is insufficient to account for πρὸς ἐν equivocacy. All πρὸς ἐν equivocals are defined in terms of a primary instance, but not everything defined in terms of something else is a πρὸς ἐν equivocal. For whatever reason, Meta. 4.2 does not present a full account of what πρὸς ἐν consists in and why the science of a πρὸς ἐν equivocal is universal. Perhaps Aristotle did not himself have a clear idea of the solution to this problem. The purpose of the passages we have examined seems to be limited to identifying substance as the nature of being and thus as the nature whose causes and attributes are studied in metaphysics.

IV

According to Meta. 4.2, then, the nature of being will be found in one kind of being, substance. In studying the principles and causes of being metaphysics will study the principles and causes of its primary instance, ὀψια (1003b16-19). Let us attempt to understand more precisely what Aristotle means by this. Aristotle cannot mean that metaphysics studies the causes of some unqualifiedly causally primary ὀψια (for instance, Aristotle’s god), since as unqualifiedly primary this ὀψια would not have causes in the first place. Nor can Aristotle mean that metaphysics studies the causes and attributes of sensible ὀψια, or at least not of sensible ὀψια tout court. As we pointed out in our criticisms of Owens’s interpretation of the phrase “being qua being,” if metaphysics studies all the causes of sensible ὀψια then it is difficult to see how it can be distinguished from physics. To the extent that it studies sensible substance at all,

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74 Owens (1978: 272-3) attributes this lack of helpfulness to fact that the role of Meta. 4.2 is limited to solving an aporia.
75 A form is unmoved and so has neither a moving cause nor a material cause. We shall argue in chapter 8 (pp. 265-7) that a form does not additionally itself have a formal cause. An unmoved entity may be a final cause, but only motions can have final causes. I take this to be point of Aristotle’s distinction between ὄδ ἐνέκα τινὸς and ὄδ ἐνέκα τινί (Meta. 12.7.1072b1-3, DA 2.4.415b2, b20; cf. Phys. 194a35-6). An unmoved entity may be a final cause for some motion (τινί) but it cannot itself be for the sake of something (τινὸς).
76 See our discussion above, pp. 74-76.
metaphysics must study sensible substance not qua itself but qua some nature not identical to sensible substance.

The reduction of the nature of being to ςυσία thus implies not only that metaphysics will study the causes and attributes primarily of substances, but moreover that in studying substances qua beings it will study them qua substances. This was not entirely clear from the passage that identified substance as the nature of being (1003b16-19). The most obvious prima facie reading of this passage was to see it as isolating substance from the nonsubstantial instances of being as the kind of object studied by metaphysics. If being is to be reduced to substance, however, metaphysics must not only seek the causes of substances rather than nonsubstantial beings, but also seek the causes of substances qua substances.77

What does it mean to study things qua substances? Minimally, it implies that to be a substance (hence to be) is not the same thing as to be physical. If all that it were to be a substance were to be something material and in motion, there would be no science higher than physics.78 The existence of a science of substance distinct from physics implies at least the possibility of a nonphysical substance. In the event, Aristotle acknowledges not only the possibility but the real existence of at least one wholly nonphysical substance, the unmoved mover of Meta. 12.6-10. There is thus somehow some commonality between sensible ςυσία and its suprasensible counterpart that allows them both to be studied qua substance. If metaphysics were strictly following the APo. conception of universality, this would be a genus of substance predicable univocally of sensible and suprasensible ςυσία. At least as far as being is concerned, however, metaphysics does not follow the APo. conception of universality. Does it do so with regard to ςυσία?

There is one explicit statement in the Metaphysics that ςυσία is not a genus: in Meta. 10.2 Aristotle writes that unity cannot be a genus “for the same reasons that ‘being’

77 This raises the question, Do any of the nonsubstantial instances of being have substance-like features that require that they be studied qua substance? For instance, substances are primarily definable (7.4.1030a11-27), and qualities are definable in a derivative sense. The quality “white” is definable, and although it must be defined in terms of its subject (surface), its definition has intelligible content distinct from that of its subject. What accounts for the possibility of this distinct content? Aristotle’s discussion of the definability of the nonsubstantial categories (Meta. 7.4-5) does not really address these issues.
78 Cf. Meta. 4.3.1005a33-b2, 6.1.1026a27-9.
and ‘substance’ cannot be genera” (1053b22-4). This is unfortunately a rather unhelpful passage: the denial that substance is a genus is made in passing and without explanation. Furthermore, there are no parallel passages that could elucidate this one, even in places where one might expect to find them. Given this fact, it would be unwise to rely solely on this passage as an indication of Aristotle’s views.

More helpful in this regard is an important passage in Meta. 4.2 that we have not yet examined. It occurs at 1004a2-9, in the midst of Aristotle’s discussion of the per se attributes of being:

There are as many parts of philosophy as there are substances, so that there must be among them a first and one which follows. For being and one divide immediately into genera; so the corresponding sciences will follow these genera. For “philosopher” is like “mathematician,” for mathematics too has parts, and in it there is a first and a second science and others which follow.

The passage is almost certainly out of place in its current location, and may well be a later addition made by Aristotle in light of similar passages in Meta. 4.3 and 6.1. It is important for several reasons. First, it implies that the first division of being and unity is

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80 There are several ways in which one could try to qualify the sense of the passage; see ibid., nn. 7-9.
81 Meta. 1004a2-9, with modifications to Apostle. Ross and Natorp (and, following them, Jaeger) excise “and one” (a5) on the hypothesis that this passages belongs before the introduction of the εἰδὴ τοῦ ὅντος at 1003b19, where a reference to unity would be out of place. Although they may be correct, (1) it is not obvious that 1004b2-9 did originally exist at 1003b19, and (2) the received text, which is found in one form or another in all major mss., expresses a view that Aristotle holds independently of the considerations he discussed at 1003b22-1004a1. The evidence for emendation seems to me to be insufficient.
82 The commentators agree that it is out of place but not where it should be located. Those who believe it belongs to Meta. 4.2 differ on whether it belongs before or after 1003b19-22, a difference that reflects conflicting interpretations of that passage. Alexander (in Meta. 250.32-251.6 ad 1004a2-9) and Jaeger 1957, interpreting this passage differently from us, see 1004a2-9 as a continuation of the earlier passage. We shall argue in chapter 5 (following Ross 1924 and many others) that b19-22 is actually meant to introduce the discussion of the per se attributes of being (1003b19-1005a13), and has nothing to do with 1004a2-9, which has been interpolated into this discussion.

If our interpretation of the rest of Meta. 4.2 is correct, then the most logical place for 1004a2-9 is indeed after the reduction of being to substance at 1003b19. However, it does not follow that Aristotle originally intended it to exist at that location. The distinction between first and second substance does not flow entirely naturally from what has gone before: there is no attempt to connect the study of the causes of substance and the study of the first genus of substance. Thus Mansion (1958: 189-94) may be correct in thinking that 1004a2-9 does not belong to the original version of Meta. 4.2. Even if this is true, however, the doctrine is compatible with the similar passage at 4.3.1005a35-b2 (discussed immediately below), which does fit logically into its context.
into genera of substance, not into substance and the other categories. The genera of being are the genera of substance, and this distinction is prior to that between substance and nonsubstantial being. The second point of interest is the passage’s association of each genus of substance with a corresponding science. First philosophy will study the first genus of substance, second philosophy the second genus.

This does not provide any indication of the identities of the genera of substance or of the relation between first philosophy, second philosophy, and the science of being qua being. Of assistance in this regard is a short methodological passage in Aristotle’s discussion of the common axioms. Some physicists attempted to investigate the axioms, and quite reasonably,

for these alone thought that they were inquiring about the whole of nature or about being. But since there is a scientist who is yet above the physicist (for nature \([\phi\omega\iota\varsigma]\) is only one genus of being), the inquiry into these axioms, too, should belong to him who investigates universally and about primary substances \([τοῦ καθόλου καὶ τοῦ περὶ τὴν πρώτην οὐσίαν θεωρητικοῦ]\). Physics, too, is a kind of wisdom, but not the primary one. (4.3.1005a32-b2)\(^{84}\)

The passage explicitly identifies nature as one genus of being and contrasts its study with the study of primary (or “first”) substances. Furthermore, the point of the passage is to identify the science of primary substances with the science of the common axioms, and the study of the common axioms belongs to the science of being qua being (4.3.1005a27-9). Thus the study of primary substance will also be a universal science of being qua being.

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83 Leszl (1975: 260-6) argues that Aristotle is actually referring to the categories here; but it is difficult to reconcile this interpretation with the parallel passage at 1005a33-b2 and Aristotle’s identification of physics as “second philosophy” at 7.11.1037b14-17. Leszl’s assumption that the genera of being will include the nonsubstantial categories (p. 256) does not take seriously enough the reduction of being to substance.

84 Slight modification to Apostle, but retaining his text (following Ross) instead of Jaeger’s emendation.

85 At Meta. 7.11.1037b14-17 physics is identified with second philosophy, thus suggesting that nature and sensible substance constitute the second genus of being and substance. Rather oddly, this seems to leave astronomy and its eternal but spatially movable objects out of the picture.

The same Greek word (\(\piρώτη\)) is being translated as either “first” or “primary”: I use the more familiar “primary substance,” but “first substance” (Apostle) is equally correct and serves to emphasize the relation between first substance and first philosophy.
We are not for the moment interested in the identity of primary substance, other than to point out that it is not the same as, and is prior to, sensible substance.\(^{86}\) The identification of the science of being qua being with the study of this genus of substance suggests that the metaphysician is (at least primarily) concerned with primary substance, as opposed to either sensible substance or a genus of substance common to both primary and sensible substance. It is not yet clear why the study of substance should not be generic: the \(\pi\rho\sigma\xi\nu\) reduction of being to substance eliminates at least the grosser Parmenidean absurdities associated with a genus of being.\(^{87}\) Nevertheless Aristotle seems to be headed toward a reduction not only of being to substance but of substance to some primary substance.

The distinction between primary and sensible substance has the advantage of preserving the distinction we need to retain between metaphysics and physics. Does it mean that metaphysics has no interest in sensible substance? This is unlikely for several reasons. First, the context of 1003a33-b19 strongly suggests that the substance that is being distinguished from nonsubstantial being and whose causes are being sought is sensible substance. Second, it is difficult to see how metaphysics can be universal—can be the science that discusses the common axioms, for instance—if it has no bearing on sensible substance.

We shall have occasion to consider both the identity of the nature of being and the problem of universality at length when we discuss Meta. 6.1 in our seventh chapter. For the present let us merely sketch our intended solution to both problems. Our study of the phrase “being qua being” showed that metaphysics studies beings qua having some nature, that is, qua having the nature of being. In Meta. 4.2 the nature of being is reduced via \(\pi\rho\sigma\xi\nu\) equivocity to substance: to study being qua being is to study (1) substances and (2) beings qua substance. Thus metaphysics will study both sensible substance and immaterial substance qua the nature of substance. There are reasons to think that

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\(^{86}\) Nature is not explicitly identified with sensible substance, but the study of nature is explicitly identified as the business of the physicist, and it is the physicist who studies sensible substance (7.11.1037b14-17, 6.1.1025b18-1026a6).

\(^{87}\) An analogous argument for the nongeneric character of substance may be possible; see chapter 7, pp. 212-13 below.
substance is not a genus, and that the science of being qua being is primarily concerned with primary substance. This implies that the nature of being should be understood not just as substance but more precisely as primary substance. To study beings qua beings will be to study them qua primary substance, and the causes and attributes that belong to sensible substance qua being will somehow belong to it qua primary substance.

We have seen in our last chapter that there is a sense in which οὐσία is a principle and a cause; in the central books οὐσία is also identified as a “cause of being,” an αἴτιον τοῦ εἶναι.  

The primacy of primary substance suggests an identification of this genus of substance with substance in its causal sense: primary substance would contain both the nature of substance and the causes of substantiality in other genera of substance. The investigation into the causes of being qua being would thus investigate the causes of the substantiality of sensible substances and primary substance in its capacity as this cause.

How this situation is analogous to that described in the *APo.* can be seen by comparing the relation between primary substance and sensible substance to that between the genus of triangle and its species. Just as the study of triangles qua triangles is not primarily the science of isosceles, equilateral, or scalene triangles, these species of triangle will all have attributes that belong to them qua triangle and causes of the triangularity that is in them. Likewise, the science of being qua being (i.e., qua substance) is not primarily the science of sensible substance, even though sensible substance will have properties and causes that belong to it qua being and substance. If substance is a genus, this science will no more be the study of immaterial substance than it is the study of sensible substance. As we have seen, there are reasons to believe that substance is not a genus but that the nature

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88 See section I of chapter 2, above. For references to οὐσία as a cause see *Meta.* 1.7.988a34-5, 1.8.988b28-9, 1.10.993a18, 3.2.996b13-14, 3.4.999b14-16, 7.17.1041a6-9, a31-2, 8.2.1043a2-4, 8.3.1043b13-14; *DA* 2.4.415b12-14.

The phrase αἴτιον τοῦ εἶναι is introduced in *Meta.* 7.17 at 1041b26 (cf. a31-2); and recurs in similar contexts at 5.8.1017b15, 8.2.1043a2-4, 8.3.1043b13-14, and *DA* 2.4.415b12-14. It occurs in a different context, perhaps representative of an earlier stage in Aristotle’s thought, at *Meta.* 2.1.993b29-30 (see Gerson 1991: 339-41). Gerson’s citations of the phrase from the *NE* (8.11.1161a16, 8.12.1162a7, 9.2.1165a23) are certainly (in the first two cases) and probably (in the last case) forms of the adjective αἴττος (“responsible”) rather than of the noun αἴτιον. The statement there that the father is responsible for the being of his offspring, appearing as it does in a wholly nonmetaphysical context, should not be burdened with metaphysical significance.
of substance is found in a kind of substance, that is, the first genus of substance or primary substance.

There is no explicit indication in *Meta*. 4.1-3 as to the identity of this genus of substance, other than the fact that it is not nature or sensible substance. To insist that the nature of being is found in primary substance, then, is not in itself to say that this nature is found in immaterial substance. Irwin, for instance, conceives the nature of being and thus of primary substance in terms of its being a “persisting subject of properties.”\(^8^9\)

Nevertheless, the indications in *Meta*. 6.1 and 12.6-10 are that primary substance and thus the nature of being is in fact immaterial substance. At this point it must suffice to set out a brief sketch of themes that we will pursue in later chapters. Aristotle’s identification of the science of being qua being with theology in *Meta*. 6.1 (1026a10-32) suggests that the nature of being is something eternal, unmoved, and separate. In *Meta*. 12.6-7 Aristotle proves the existence of just such a thing (12.7.1073a3-5). In *Meta*. 12.7 and 12.9 it is further shown that god is essentially thinking of thinking (νόησεως νόησις, 12.9.1074b34-5) and the highest intelligible object. This suggests that the beingness which is caused in the secondary instances (notably, sensible substance) is their resemblance to something that is itself essentially permanent, separate, and intelligible.\(^9^0\) There should thus

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\(^8^9\) Irwin 1988: 544 n. 42 with 545 n. 49. Irwin does not, however, explain why this applies primarily or only the first genus of substance; on the contrary, it would seem to apply to all substances and especially to sensible substance, which is not identical to primary substance. It is not clear that immaterial substance—a separate τι ἔννοιαν ἐννοεῖ that is both wholly simple (1072a31-4) and wholly actual (1071b17-22)—could have properties in any way distinct from it.

\(^9^0\) Dhondt (1961: 29) sees the relevant explananda as the unity, subsistence, and intelligibility of beings; Owens (1978\(^3\): 460-4) emphasizes permanence. The two features are not unrelated: *APo*. 1.8 emphasizes that the objects of ἑπιστήμη must be eternal (75b21-32; cf. *Meta*. 7.15.1039b27-1040a7). That is to say, if there is to be scientific knowledge of material things, they must although destructible somehow also be eternal, i.e., through the continuous generation guaranteed by the causality of the unmoved mover. See Verbeke 1986. (This suggests that Aristotle may be committed to an unacceptably strong position on the eternity of the species, one which cannot account for, e.g., extinctions). Irwin too emphasizes the role of scientific intelligibility: metaphysics "asks how something must be if it is really and objectively a subject with essential and coincidental properties, and asks whether anything meets the conditions that we discover" (1988: 170). Irwin ignores the specifically causal aspect of this investigation, however: Aristotle is interested not only in knowing what things must be like to be scientifically intelligible but also what it is that makes them so. Irwin assumes that intelligibility requires a priori that the world have a certain structure, and then asks what that structure must be (note his comparisons to Kant, pp. 166-8, 170-2) and whether it is found in reality. Aristotle rather takes the intelligibility of the world as a given and asks what the *causes* of this intelligibility must be. The issue of the nature of being may also be approached from a Platonic background: see chapter 8, p. 286 below.
be a role for both immanent and separate form as principles in metaphysics: physical substances are intelligible in virtue of their forms, and eternal εἶδος (DA 2.4.415a26-b2; cf. GC 2.11.338b15ff.) because specifically the same form is passed on from one individual to another in a generation whose continuity is assured by the (ultimately) final causality of the unmoved mover.91 The search for the causes of being qua being, we shall argue, is a search for the causes of sensible reality qua having these features.

It will be clear that none of these features are found in material and immaterial reality in the same way: substantiality exists in material and immaterial substance not univocally but according to πρὸς ἐν equivocity. This requires an account of πρὸς ἐν that goes beyond what Aristotle provides in Meta. 4.2, where there is no sign of a πρὸς ἐν relation between the genera of substance. Moreover, the πρὸς ἐν relation between the genera of substance must be different from that described in Meta. 4.2, in that as described there πρὸς ἐν appears to require that the nature of being in no way be found in the derivative instances of being. If we are seeking the causes of being in sensible substances, however, the nature of being must somehow be found in sensible substance.92 If there is a πρὸς ἐν relation between the genera of substance, then, it must be such that the nature of being is found both in sensible οὐσία and in its principles.

V

Let us briefly sum up. Metaphysics is the study of the principles (or causes) and per se attributes of being qua being, that is, of beings insofar as they are beings. The reduction of the nature of being to substance and then to primary substance suggests that to study something qua a being is to study it qua primary substance. The science owes its unity to the fact the being is a πρὸς ἐν equivocal, although the use of this kind of equivocity to unify a science of the genera of substance is not raised in Meta. 4.1-2. Nevertheless, we have seen how a πρὸς ἐν relation between the genera of οὐσία—οὐσία in the sense of a cause versus οὐσία as something that has principles and causes—might

91 The relevant texts are: DA 2.4.415a26-b2; GA 2.1.731b24-732a1; GC 2.9-11; Meta. 9.8.1050b6-1051a3; Phys. 8.6. See section III of chapter 9, below.
92 Cf. Meta. 4.1.1003a26-32.
be supposed to exist. Our investigation so far has raised several questions that need to be answered in what follows. In particular, what is the nature of being and first substance, and what would count as a cause of being in things? In what sense of “cause” are the causes of being causes? How can this account of the object of metaphysics be reconciled with what appears to be a somewhat different picture in the latter half on Meta. 6.1? Most of the rest of this thesis will be dedicated to these questions. First, however, let us consider Aristotle’s treatments of the per se attributes of being and the common axioms.
Chapter 4
Dialectic and the Axioms

In our last chapter we argued that *Meta*. 4.1-2 follows the model of the *Posterior Analytics* in identifying a nature and studying things qua having that nature. Metaphysics studies the principles, causes, and attributes that belong to things qua beings. In subsequent chapters we will attempt to identify the nature of being and its principles, causes, and per se attributes. Before we address these tasks, however, it is necessary to spend some time on the relation of metaphysics to dialectic. Since G. E. L. Owen’s 1961 article “Τιθέναι τὰ φανόμενα” Aristotle’s philosophical investigations have frequently been understood as essentially dialectical in character.¹ This generally carries the implication that they are neither demonstrative nor empirical, in the sense of ἐμπειρία that Aristotle develops in *APo*. 2.19.²

We shall argue in the next chapter that at least one of the tasks of metaphysics, the treatment of the per se attributes of being, is demonstrative. This being the case, metaphysics will not be wholly dialectical. It is nevertheless worthwhile to consider the evidence that has led some to conceive metaphysics as wholly or primarily dialectical.³ Two features in particular seem to support this interpretation: Aristotle’s use of dialectical “puzzling” (διαπορήσας) in *Meta*. 3, and his discussion of the principles of

¹ Owen 1961: esp. 88-92; Wardy 1991; Pritzl 1994. Irwin 1988 modifies this thesis with the qualification that in the later philosophical works Aristotle’s methodology is “strong dialectic.” Barnes 1981 is plausibly interpreted as endorsing this position, but Barnes 1991 rejects it. For additional references see Bolton 1987: 121 nn. 3-4.
² Owen 1961: 83-4, 88-92. Owen distinguishes treatments that are conceptual and dialectical from those that are empirical, implying that in the *Phys.* proper (as opposed to other works physical works) it is not the case that “the analyses either start from or are closely controlled by our inspections of the world” (p. 91).
³ This is necessary partly because our evidence that the treatment of the per se attributes is demonstrative is indirect, relying on the fact that this treatment seems to follow the methodology of the *Posterior Analytics* rather than on an explicit statement that this part of metaphysics is demonstrative.
contradiction and the excluded middle in *Meta.* 4.3-8. Certainly Aristotle uses dialectical arguments in these places and indeed throughout the *Metaphysics.* The evaluation of his predecessors' positions in *Meta.* 1.7-10 is largely dialectical, as are likely some of the arguments against the substantiality of universals in *Meta.* 7.13 and much of Aristotle's treatment of his predecessors' accounts of the principles in *Meta.* 13-14. Many scholars see *Meta.* 7-8 as a whole as essentially dialectical, a claim whose evaluation presupposes a correct understanding of purposes and conclusions of these books. For reasons of this sort, we cannot attempt an exhaustive treatment of the question for the *Metaphysics* as a whole. By examining Aristotle's procedure in *Meta.* 3 and 4.3-8—two passages that clearly use dialectical argumentation—it is possible to draw some tentative conclusions about his views on the uses and limitations of dialectic. First, however, let us consider some important evidence outside the *Metaphysics.*

I

Aristotle's extended treatment of the goals and methods of dialectic is found in the *Topics.* This is generally agreed to be an early work, roughly contemporaneous with the *Posterior Analytics.* The purpose of the *Topics,* Aristotle writes, is to devise a method "whereby we shall be able to reason from reputable opinions [ἐξ ἑνδόξων] about any subject presented to us, and also shall ourselves, when putting forward an argument, avoid saying anything contrary to it." The treatise is useful for several purposes: for intellectual training (πρὸς γνώμασιν), in ordinary conversations (πρὸς τὰς ἐντεῦξεις), and for the

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4 Berti (1996: 126) takes the former to indicate that "in the *Metaphysics* Aristotle uses dialectic as the method of first philosophy"; Irwin (1988: 179) argues that the defence of the common axioms with "strong" dialectic "should show us what it is like to argue about being qua being."


6 We are considering the use of dialectic in the other works only to the extent that it is helpful for understanding Aristotle's procedure in the *Metaphysics.* Most of the secondary literature cited is concerned with the larger picture.

7 Rist (1989: 78-82) dates *Top.* 1 ca 343, slightly earlier than the *Posterior Analytics* (341/0). While not attempting the same degree of precision, Graham (1987) and Irwin (1988) also accept an early date as part of their arguments that the *Organon* is earlier than the *Physics, Metaphysics* and *De anima.*

8 *Top.* 1.1.100a18-21. Unless otherwise noted all *Topics* translations are from the ROT.

9 That is, as an informal way for arguing with an opponent starting from his own premises (cf. 1.2.101a30-4).
philosophical sciences (πρὸς τὰς κατὰ φιλοσοφίαν ἑπιστήματας, 1.2.101a26-8). In
ingquiring into the role of dialectic in the *Metaphysics*, we are of course interested in the
last of these three uses.

The usefulness of dialectic for philosophy is twofold. First, training in dialectic
provides “the ability to puzzle [διαπορηθῶσαι] on both sides of a subject,” which “will make
us detect more easily the truth and error about the several points that arise” (101a34-6).
Second, dialectic is useful for discussing the first principles of each science (τὰ πρῶτα
tῶν περὶ ἐκάστην ἑπιστήμην),

for it is impossible to discuss them at all from the principles proper to the
particular science at hand, seeing that the principles are primary in relation to
everything else: it is through reputable opinions about them that these have to be
discussed. This is distinctive of dialectic, or more proper to it than to anything else;
for since it is such as to cross-examine [ἐξεταστικῇ], it provides a way toward the
principles of all inquiry.\(^{10}\)

Although the passage is not explicit on this point, Aristotle seems to have both proper and
common principles in mind.\(^{11}\) As Irwin points out, Aristotle does not claim that dialectic
can *establish* first principles, only that in its critical capacity it provides a route toward
gasping them.\(^{12}\) In other words, the usefulness of dialectic for reaching first principles
may be nothing more than a special case of its general usefulness for “puzzling.”

In *Top.* 1.1 Aristotle distinguishes a dialectical syllogism from a demonstrative
syllogism according to the nature of its premises. A demonstrative syllogism starts from
premises that are true and primary, in other words, premises that fit the criteria listed in
*Apo.* 1.2 and require no further justification or explanation.\(^{13}\) A dialectical syllogism, by
contrast, starts from “reputable opinions” (ἐνδοξα): opinions accepted by everyone, by the
majority, or by the wise (either by all the wise, or the majority of them, or by the “most

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\(^{10}\) *Top.* 1.2.101a37-b4, trans. ROT with modifications taken primarily from Irwin and Fine 1995.

\(^{11}\) Cf. *Apo.* 1.11.77a26-35.

\(^{12}\) Irwin 1988: 37, 118. For the contrary view, which assigns a much more significant role to dialectic, see
Evans 1977 and especially Owen 1961, who attributes to *Top.* 1.2 the claim that “the first premises of
scientific argument can be established by dialectic” (pp. 91-2). See also Owen 1965: 144.

\(^{13}\) See our discussion in chapter 1, pp. 29-32 above.
notable and reputable” of them). Unlike demonstration, dialectic does not simply state the ἐνδοξα and move on to draw whatever conclusions follow from them; rather, a dialectical argument begins with premises (προτάσεις) that introduce ἐνδοξα in the form of questions (1.10). The dialectician will seek to obtain his interlocutor’s assent to whatever ἐνδοξα seem to be useful for establishing his position. The conclusion sought will be on one side or the other of a dialectical problem (πρόβλημα, 1.11). Dialectical problems are of various sorts, for instance, whether pleasure is choiceworthy and whether the universe is eternal. They are characteristically “whether” questions: questions that demand a choice between two specific answers. Worthwhile dialectical problems are ones without obvious answers, either because there is no consensus on the issue or because some philosopher of note has contradicted the consensus view. Dialectic thus seeks to secure an interlocutor’s agreement to a position on a controversial question by getting his assent to endoxic propositions that imply that position. The usefulness of an ἐνδοξος is that it is likely to be accepted—or at least must be taken into account—by the interlocutor.

How is dialectic related to philosophy? In Top. 1.14 Aristotle implies that subject matter of dialectical and philosophical investigations can be the same: among the dialectical problems are problems in logic, natural science, and ethics. The difference between the two disciplines lies in the way they address the problems: “for purposes of philosophy we must treat these things according to their truth, but for dialectic only with an eye to opinion” (105b30-1). This contrast is puzzling, in that Aristotle has stated in

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14 On the translation of ἐνδοξα as “reputable opinions” see Barnes 1981. As Barnes emphasizes, ἐνδοξα should not be held as equivalent for “common-sense beliefs.” The opinions of the wise will not necessarily agree with the ordinary person’s common sense.
15 See, for instance, Top. 8.1.155b28-156b18; and Moraux 1968.
16 See the examples at Top. 1.4.101b30-4. On dialectical problems in general see Lennox 1994: 53-6, 58-64; Moraux 1968: 278-80.
17 On dialectic as something that essentially involves asking questions of an interlocutor cf. Top. 8.1.155b7-16, APo. 1.1.24a22-5, APo. 1.11.77a31-5. Cf. Robin Smith’s definition of dialectic as “argument directed at another person which proceeds by asking questions” (Smith 1995: 60). As will become evident in what follows, I am largely in agreement with Smith’s fairly restrictive account of the philosophical role of dialectic (Smith 1993; 1995: 57-62).
18 Cf., along the same lines, Top. 8.13.162b31-3. For a useful list of similar passages (to which may be added SE 17.175a31-3), see Irwin 1988: 528 n. 1; for discussion, see Bolton 1987: 146-151.
Top. 1.2 that there is a use for dialectic in the philosophical sciences. The puzzle is most easily solved if one recalls that Aristotle there indicates a quite modest role for dialectic. Dialectic is useful in the philosophical sciences for διαφωτισμος; it is εξετασικη. This suggests that the method we have described of amassing ενδοξα to establish a certain conclusion is not the dialectical method appropriate for philosophy. The philosopher does on the other hand need a tool to draw out and test the implications of proposed solutions, and this cannot be demonstration if demonstration argues only from premises that are known to be true and primary. This suggests an important but limited role for dialectic: it does not establish anything in philosophy, but serves as an important preliminary tool.

Why should we not additionally assign dialectic the role of establishing scientific principles? First, in attempting to establish something the aim of a dialectician is quite different from that of the philosopher seeking scientific knowledge. The dialectician’s aim is to convince—he is thus concerned with matters of strategy and tactics—whereas the philosopher’s aim is to reach true and explanatory principles from which conclusions may be demonstrated (Top. 8.1.155b7-16). The philosopher is not primarily concerned to convince others of the truth of his conclusions, as long as he knows that they are in fact true. Thus the scientific use of induction, for instance, is not limited to cases likely to be familiar to an interlocutor: the scientist is entitled to use observations that have never been made before and thus will not yet constitute ενδοξα. Likewise the philosopher does not aim at convincing anyone of anything he does not himself know to be true.

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19 This is the problem that Irwin attempts to address throughout Irwin 1988. Evans is aware of the existence of such passages (1977: 90 and n. 106) but does not seem to recognize the problems they raise. Irwin’s solution is to maintain that in addition to “pure” dialectic, which is to be contrasted with philosophy, there is “strong” dialectic, which is the method of first philosophy and the other sciences that depend on it for their principles. Thus according to Irwin there is a kind of dialectic that can be used to establish philosophical principles. We shall argue by contrast that dialectic is useful in the philosophical sciences only as a critical tool. As in the Topics, there is no kind of dialectic that can establish a philosophical principle or conclusion; however, dialectic can be useful for testing and criticizing purported accounts of the principles.

20 In the Meta. Aristotle distinguishes dialectic from philosophy as πειραστικη (4.2.1004b25-6).

21 Dialectic will not, of course, be the method for moving from scientific principles to their conclusions: this task is explicitly assigned to demonstration (APo. 1.2, Top. 1.1).

22 Bolton 1987: 122-5: new observations do not fit any of the criteria for being ενδοξα, especially if the investigator making the observation is not particularly distinguished (not among the “wise”). Even if he were among the wise, the scientific reason for accepting the results would not be this fact (he might have had no opinion on the matter the day before, while still being among the wise), but rather the fact of the observation itself. As Bolton points out (p. 124 n. 11), the difference between science and dialectic is
Irwin emphasizes the fact that if \( \epsilon\nu\delta\sigma\xi\alpha \) may turn out to be false, so may the principles reached based on arguments from them.\(^{24}\) This is unacceptable if the first principles are themselves supposed to be necessarily true. Furthermore, as Bolton points out, there is no necessary reference to sensation in dialectical arguments from \( \epsilon\nu\delta\sigma\xi\alpha \).\(^{25}\) In both the *Posterior Analytics* and the *Physics* Aristotle characterizes scientific investigation as a process beginning with sensation and ending in principles that explain what was initially known through sensation.\(^{26}\) A dialectician might argue from \( \epsilon\nu\delta\sigma\xi\alpha \) that eclipses are interpositions (for instance by appealing to the views of eminent scientists) without having any of the astronomical \( \epsilon\mu\pi\epsilon\tau\rho\iota\alpha \) necessary to *know* that this is the definition. To be able to give a plausible dialectical argument that \( \Phi \) is the definition of \( x \) is not necessarily the same as to understand what \( x \) is. If I survey all the recent literature on some astronomical phenomenon and point out that they all provide the same explanation for the phenomenon, I have probably made a good *prima facie* case that this explanation is correct. This is not necessarily the same as my acquiring a scientific understanding of that phenomenon, however, especially if my survey is limited to reading the papers' conclusions.

Finally, James Lennox has pointed out that the fact that dialectic's questions are "whether?" questions makes it inappropriate for scientific investigation into "what?" and "why?" questions.\(^{27}\) Dialectic attempts to establish one or the other side of a "whether"

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\(^{21}\) Whereas some instances of dialectic do: Moraux 1968: 279-80, 286.

\(^{24}\) Irwin 1988: 66-7, 137-8, etc. On the possibility of false \( \epsilon\nu\delta\sigma\xi\alpha \) cf. *APo.* 1.19.72a5-11, *Top.* 162b27.

\(^{25}\) Bolton 1987: 125; though Bolton goes too far in denying dialectic any recourse to sensation. At *Top.* 1.11.105a3-9 Aristotle excludes problems that can be solved merely by sensation from the ambit of dialectic but does not suggest that data of sensation cannot be used as evidence for addressing a more complex dialectical problem.

\(^{26}\) *APo.* 1.18, 2.8-10, 2.19; *Physics* 1.1.184a16-b2, esp. a23-6 (move from the whole which is more known to sensation to its principles and elements); cf. Bolton 1987: 126-8. Sensation is also the ultimate confirmation for principles in physics; see *DC* 3.4.303a22-3 with 3.7.306a13-17 and Bolton's discussion, though Bolton downplays the role of \( \epsilon\nu\delta\sigma\xi\alpha \) too severely.

\(^{27}\) *APo.* 2.1-2; Lennox 1994: 58-64; Bolton 1995: 439-41. Evans (1977: 35-6) also recognizes that dialectical premise cannot be an answer to the \( \tau\iota \epsilon\epsilon\tau\alpha \) question; cf. *Top.* 158a14-21. If a dialectical problem differs from a dialectical premise only by being controversial, as 1.4.101b28-36 implies (any dialectical premise can become a dialectical problem if it is controverted, so that the number of potential
question. Its goal is thus to establish a διότι, not to inquire into a διότι or τι ἐστι. The philosopher aims at insight into what something is (τι ἐστι), which for Aristotle is the same as to know the causes (τὸ διότι) of its existence. The philosopher's interest in establishing that a particular answer to a διότι or τι ἐστι question is true—i.e., in establishing that a particular account of the principles is true—is subsidiary to the prior task of discovering what the διότι or τι ἐστι is in the first place. Lennox admits that questions about whether a certain formula accurately states the τι ἐστι of something are properly formed dialectical questions. In order even to be able to reasonably ask whether \( \Phi \) is the definition of \( x \), however, there must already be some reason to think that \( \Phi \) (as opposed to a myriad other possible λόγοι) is the definition. In other words, the candidate for the definition is not originally arrived at dialectically. What ought to provide the definitions that serve as principles for demonstrations, according to the Posterior Analytics, is rather a process of ἐπαγωγή beginning in αἴσθησις and ending in νόες (APo. 1.18, 2.19).

Philosophy may use dialectic to test and criticize various accounts of the first principles (and also the conclusions drawn from them), but it will not use dialectic to establish either principles or conclusions. If the scientific use of dialectic is not to establish a particular account of the principles but rather to critically examine the various possible accounts, however, dialectic will have an important role even in a strictly scientific inquiry. Dialectical puzzling can show, for instance, that a purported solution is self-contradictory or inconsistent with other evidence. What makes dialectic inappropriate for scientific use—it's very flexibility—makes it ideal for testing the consequences of dialectical premises is equal to the number of dialectical problems), then dialectical problems are no more questions about τι ἐστι than are dialectical premises.


29 Dialectical ἐπαγωγή (Top. 1.12) has its starting point in ἐνδοξε rather than particularly in sensation.

30 I should draw attention to an ambiguity in the word "conclusion." In a propter quid demonstration the principles and causes are found in the premises, and the conclusion is the existence of some fact explained by them. Scientific investigation, on the other hand, frequently begins with "conclusions" that need to be explained and moves toward their principles. In this sense the principles might be called conclusions—certainly on the view that dialectic can establish first principles the principles will be conclusions of dialectical arguments. I avoid using "conclusion" in this confusing sense, restricting it to the conclusions of (1) dialectical arguments in general (as opposed to those purportedly aimed at establishing first principles) and (2) propter quid demonstrations.
possible philosophical positions. This is precisely the capacity in which we shall find
dialectic in use in the aporias of Meta. 3.

II

If the foregoing is correct, Aristotle's use of dialectic in the Topics indicates that it
should have a definite but limited role in philosophical investigations. Those who would
see a larger role for dialectic generally appeal not to the Topics but rather to several
important methodological passages in the philosophical works. Owen appeals in particular
to a passage on method in the discussion of incontinence in the Nicomachean Ethics:

So as in the other cases we should, after laying down the φαινόμενα and going
over the difficulties [διαπορήσανταί], indicate as far as possible the truth of all the
ἐνδοξα concerning these affections, or if not, the truth of most of those opinions
or the most important ones; for if the difficulties that cause concern are refuted
and the ἐνδοξα are left standing, we shall have established our case sufficiently.31

Owen points to several features of interest. First, it appears that ἐνδοξα explicitly have
some role in a properly philosophical approach to an ethical question. Secondly, the
φαινόμενα that Aristotle introduces later in the chapter are also themselves opinions, as
opposed to purely perceptual phenomena.32 Aristotle's use of the word ἐνδοξα led Owen
to conceive of the methodology described here as primarily dialectical.33 Furthermore, the
fact that the φαινόμενα referred to here are opinions rather than straightforwardly
empirical observations led Owen to conceive them too as ἐνδοξα, effectively assuming
that any summary of received opinion is a collection of ἐνδοξα for use in dialectical
argumentation toward first principles.34

31 NE 7.1.1145b2-7. This passage is used for similar purposes in Barnes 1981 and Nussbaum 1986: chap. 8.
32 NE 7.1.1145b8-20. Aristotle distinguishes ἐνδοξα from φαινόμενα κατὰ τὴν αἰσθησιν at DC 303a22.
33 Owen 1961: 87-92. As we noted earlier, Owen reads Top. 1.2.101a36-b4 as maintaining that dialectic
can establish first principles in science. However, Owen ignores Aristotle's contrasts between dialectic
and philosophy throughout the corpus; see notes 17 and 18 above. The same is true of Wardy 1991.
34 For instance, Owen takes Aristotle's statement that the account of space in Phys. 4.1-5 begins with δεικ
dεικὴ ἀληθος καθ' αὐτό ὑπάρχειν αὐτῷ (4.4.210b32-4) as evidence that it, too, is a dialectical
treatment starting from ἐνδοξα. (Owen's implication [1961: 88] that the Phys. passages explicitly refer to
ἐνδοξα is misleading.) But what Aristotle describes here has the appearance rather of a progression from
καθ' αὐτά συμβαθηκότα to the τι ἔστι of an entity, using a progression similar to that described at DA
1.1.402b16-403a2: the attributes are used to reach the τι ἔστι because the τι ἔστι must be posited in such
It is clearly true that Aristotle frequently begins an investigation with a discussion of received opinion on the matter at hand: one need only look at the first book of the *Metaphysics, Physics, or De anima*. It is far less common, however, for Aristotle to refer to these opinions as ένδοξα, and his explicit references to ένδοξα are not all favourable to their use in science. Aristotle uses forms of the word ένδοξον only infrequently in the major philosophical works apart from the *Topics*, the *SE*, and the *Rhetoric*. In the *Posterior Analytics* and the *Metaphysics* arguments from ένδοξα are always contrasted with scientific arguments. There are a few occasions where Aristotle uses the word in such a way to imply that ένδοξα are relevant for scientific investigations. In *DC* 3.4 Aristotle argues against the existence of atomic bodies on the grounds that this would contradict mathematical truths, ένδοξα, and perceptual phenomena (303a20-4). The most significant use is in the passage we have already quoted, where Aristotle maintains that an account of incontinence should somehow δεικνύωνει the ένδοξα (*NE* 7.1). Even in the *NE* and *DC* passages, Aristotle uses the word ένδοξα not to refer to the φανόμενα that are the starting point of the investigation but rather to opinions that tend to confirm or disconfirm a theory that has already been posited. Aristotle never states or implies that the method of philosophical inquiry is dialectical argument starting from ένδοξα.

It is true that Aristotle uses other words to refer to opinions that are actually ένδοξα. In *NE* 1.8, for instance, Aristotle argues that his account of happiness is confirmed by what people say about it (τὰ λεγόμενα). It is simply not possible, however, to conclude from the references to ένδοξα in the corpus that Aristotle is using dialectical reasoning from ένδοξα to establish philosophical principles or conclusions. Correctly pointing out Aristotle's extensive use of received opinion in the philosophical...
works, Owen jumped to the conclusion that these opinions should be conceived as endoxic starting points for dialectical arguments. This conclusion is incompatible both with Aristotle's characterization of dialectic in the *Topics* and with his contrasts between dialectic and philosophy throughout the corpus.

III

If the opinions that Aristotle amasses at the beginning of his scientific works are not meant to be the premises of dialectical arguments, what role do they play? In the explicit references to ἐνδοξά we noticed above, Aristotle appears to treat them as “checks” on scientific theories. The account of incontinence in the *NE* is meant to be consistent with (most of) the ἐνδοξά, and the *DC* appeals to ἐνδοξά as part of the refutation of atomism (3.4.303a22-4). This also seems to be the case for some opinions that are not explicitly called ἐνδοξά: Aristotle appeals to λέγομενα and δοκοῦντα to confirm his accounts of happiness in the *NE* and *EE*.

Aristotle’s attitude toward received opinion in general is most clearly expressed in the *Eudemian Ethics*:

About all these matters we must try to get conviction by arguments, using the phenomena [φανόμενα] as evidence and illustration. It would be best that all men should clearly concur with what we are going to say, but if that is unattainable, then that they should in some way at least concur. And this if converted they will do, for every man has some contribution to make to the truth ὁικείον τι πρὸς

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39 It probably does not do Owen justice to suggest that he maintains that all ἐνδοξά serve as premises for the kind of dialectical argumentation described in *Topics*. Criticizing Irwin’s distinction between pure and strong dialectic, Wardy (1991: 88) points out that “Owen’s complex account insists on a unitary conception designated ‘dialectic’ without qualification” and which is presumably not limited to dialectic as it is described in the *Topics*. The difficulty lies in the fact that when Aristotle himself refers to dialectic, he invariably is referring either to Platonic dialectic or (much more frequently) to the methods described in the *Topics*. In other words, Owen’s “complex account” finds no explicit textual support in Aristotle’s own writings. (Outside the *Organon* and the *Rhetoric* references to dialectic or dialecticians are found only at *DA* 403a2, a29; and *Meta.* 987b32, 995b23, 1004b17-26, 1061b8, and 1078b25.)

40 On the notion of a “check” see Pritzl 1994: 46-7; Cooper 1988: 546-7. Although Aristotle does emphasize that ethics is a relatively inexact science, Bolton (1987: 128-9) is too hasty in suggesting that the mention of ἐνδοξά in the *Ethics* implies that it is more dialectical than physics. Aristotle mentions ἐνδοξά once in the *DC* and twice in the *NE*. In both cases ἐνδοξά are relevant for confirming or disconfirming a theory and in neither case do ἐνδοξά serve as premises for a dialectical conclusion.

41 *NE* 1.8.1098b9-11, *EE* 2.2.1219a39-40.

42 I am using “received opinion” not to translate any Aristotelian term but to refer to the opinions that Aristotle amasses and discusses as part of his philosophical inquiries.
This passage refers specifically to the methodology for an investigation into happiness. There is, however, reason to think that Aristotle intends it to have more general application. In particular, the role of Aristotle's exposition and critique of the views of his predecessors in *Meta*. 1 and 3 becomes clearer if we take it to be part of Aristotle's philosophical approach to move from opinions that are "true but not clear" to an account of the principles in clearer and more known terms. In several places in *Meta*. 1 Aristotle describes his predecessors' accounts of the principles as unclear rather than simply false. The implication is that his predecessors were at least asking the right questions, and making some steps toward answers, and the task is now to take what they grasped obscurely (in some cases only barely grasped at all) and to render it clearly.44

In going over the opinions of his predecessors Aristotle is following the same procedure he uses in the *Physics* and *De anima*, but it is worth asking why he thinks this procedure worth following in the first place.45 In other words, why does Aristotle not simply start the *Metaphysics* with the introduction of a science of being qua being in book 4? A hint of the importance of this procedure is suggested by certain similarities between

43 *EE* 1.6.1216b26-39, trans. ROT with modifications. Cf. *EE* 2.1.1220a15-17; and *Meta*. 2.1993a31-b2:. "no one can attain [truth] adequately, nor do all fail, but each says something about the nature of things" (cf. b2-19). The adverbial forms of σαφῶς and συνεκσυμένως modify λέγομενα. Aristotle's distinction between the "what" (τὸ τι) and the cause (τὸ διὰ τι) is not really compatible with the *APo*.'s tendency to identify the τι ἐστὶ with the διὰ τι, (esp. *APo*. 2.2), though in *APo*. 2.8 Aristotle allows for a definition that states part of the τι ἐστὶ (93a24, a29). Perhaps it this kind of definition that Aristotle is referring to, albeit obliquely.

44 On this progression see *Meta*. 1.3.984a16-21, b15-18; 1.4.985a10-19; 1.5.985b3-22; 1.7.988a32-b8; 1.10.993a13-24; see also Pritzl 1994. The contrast between σαφῶς and ἁμαρτῶς is found in the passages from 1.4 and 1.10; in the 1.7 passage Aristotle writes that no one expressed themselves σαφῶς about οὐκείως and τι ἐν εἴναι. Anagnostopoulos (1994: 103-6) shows that for Aristotle σαφῆς is almost identical in meaning to ἁμαρτῆς; i.e., it is a term connoting scientific exactness (cf. *APo*. 1.27, discussed in chapter 1, pp. 42-5 above). On the various kinds of exactness see Anagnostopoulos’s chapter 4; on this use pp. 131-3. Note that (1) some accounts are more adequate than others and (2) Aristotle dismisses some thinkers (Hippo, Xenophanes, and Melissus) as not worth considering at all. Xenophanes in particular is criticized because οὐδὲν διεισαρθησάν (986b23). (Aristotle’s harshness here is rather puzzling.)

45 The parallel between Aristotle’s procedure here and in the other works undermines the view of some scholars (e.g., Leszl 1975: chap. 3) that books 1 and 3 of the *Meta*. are early and unrepresentative. A survey of received opinion is presumably all the more important if the subject matter of one’s discipline is not yet clearly determined.
the EE passage and the introductory chapter of the Physics. In Phys. 1.1, Aristotle describes a progression from the “confused wholes” (συνκεκυμένα) that are more known to sensation to their elements and principles that are σαφέστερα τῇ φυσικῇ καὶ γνωριμότερα (184a18-23). The EE passage, as we have seen, describes a progression from statements (the opinions of others, it is implied) that are συνκεκυμένως λεγόμενα to statements in terms that are γνωριμότερα.

This suggests that the progression from others’ accounts of the principles to Aristotle’s own account may somehow be analogous to the progression from the phenomenon that is more known to sensation to the principles of that phenomenon. A significant enough mass of received scientific opinion will contain enough truth in it to make discussion and dialectical criticism of it worthwhile. This is not a substitute for experience and empirical investigation, especially since the views of Aristotle’s predecessors are themselves the products of reflection on experience (if not of careful empirical investigation). The experience of one person, however, seems to be insufficient for acquiring an adequate account of the principles: “each of us individually contributes nothing or little to the truth, [but] a considerable amount of it results from all our contributions.” Individually our ἐμπειρία may be insufficient to arrive at principles: what is necessary is not only sensible experience but also a critical examination of the views of others.

46 Cf., in a metaphysical context, Meta. 7.3.1029b3-12.
47 Owen (1961: 85-92) sought to distinguish between empirical data as the phenomena of natural science and “matters of linguistic usage” (p. 85) that create “logical or philosophical puzzles” (p. 87) as the phenomena of philosophy. Referring to Aristotle’s treatment of space in Phys. 4.4, Owen writes: “By such arguments the Physics ranks itself not with physics, in our sense of the word, but with philosophy. Its data are for the most the materials not of natural history but of dialectic, and its problems are accordingly not questions of empirical fact but conceptual puzzles” (p. 88). Owen’s empirical vs. conceptual distinction is reflected in Irwin’s (1988) and Leszl’s (1975) distinction between metaphysics and natural science as second-order vs. first-order investigations. The fact that the opinions surveyed in the Metaphysics do not seem to fit neatly into either category—they are neither empirical data nor essentially conceptual in nature—tends to undermine this distinction. Note also that Aristotle discusses mainly one type of ἐνδοκοινονική, the views the scientists (with occasional mentions of cosmological poets, but here Aristotle is apt to be dismissive; e.g., 1000a18-19). This suggests that these views are of interest not specifically as ἐνδοκοίνα but as previous attempts at the kind of scientific investigation he is undertaking.

48 Meta. 2.1.993b2-4, trans. Apostle with slight modifications. According to Aristotle the explanation of the difficulty lies in the fact that our intellects are not well suited to grasping the principles of things: “as the eyes of a bat are to the light of day, so is the intellect of our soul to the objects which are in their nature the most evident of all [τῇ φύσει φανερῶτερα πάντων]” (b9-11). The things that are most known (or most evident) by nature are the principles and causes: Apo. 1.2, Phys. 1.1.
This use of received opinion differs significantly from its use in dialectic. In a dialectical debate ἐνδοξα are used as premises in an argument for a certain conclusion. In a philosophical investigation, even opinions that are worth considering are nevertheless characteristically obscure and confused accounts of a phenomenon for which we are seeking a clear and accurate account. They can therefore not be used straightforwardly as premises, if conclusions are only as good as the premises from which they are derived. Received opinion must rather be used indirectly, in the first instance as material for the aporias.

IV

Aristotle introduces the aporias of Meta. 3 with the statement that the first task of the metaphysician is to “puzzle” (ἀπορήσατι or διαπορήσατι)49 over the aporias, which include both problems that arise because of the divergence of opinion among Aristotle’s predecessors and problems that his predecessors did not recognize (995a24-7). The aporias arise partly because of the failure of Aristotle’s predecessors to give a clear account of the principles.50 Discussion of the aporias is useful for several reasons. First, successful answers to questions in metaphysics are characteristically solutions to aporias: stating the problems correctly is a prerequisite to arriving at the correct solutions (995a28-36). Second, going over the aporias indicates the goal (τέλος) of the investigation: it indicates what kind of answers we are looking for. (a36-b2).51 Finally, having heard all the arguments, we will be in a better position to judge the truth of the matter when the time comes to propose solutions: “one who has heard all the arguments, like one who has heard all the parties in a lawsuit or both sides in a dispute, is necessarily in a better position to judge truly” (995b2-4).

The introductory lines of Meta. 3 thus echo Aristotle’s modest assessment of the philosophical utility of dialectic in Top. 1.2: the “ability to puzzle on both sides of

49 Meta. 3.1.995a25, a28 respectively.
51 Both these reasons tend to undermine Irwin’s view (1988: 166) that the Metaphysics seeks not to answer the aporias but rather to address “preliminary questions,” which, because they have not been dealt with adequately, have generated the aporias.
question” helps us “detect more easily the truth and error about the several points that arise” (101a34-6). There is no suggestion that διαπορήσαι is sufficient for establishing first principles or that dialectic is the proper method for whatever other investigations are necessary. From this introduction one can also infer Aristotle’s reasons for finding value in received opinion. Although nothing suggests that Aristotle intends to restrict himself to the opinions of his predecessors, his practice of developing aporias from their views makes sense only if Aristotle thinks their questions and solutions are somehow relevant to his project. Criticism of his predecessors also allows Aristotle to eliminate the obviously unsatisfactory solutions while showing what objections must be met for the solutions he does adopt. Even if Aristotle proposes a solution wholly different from those of his predecessors, his own account must nevertheless explain the phenomena the earlier solutions were meant to account for.

A brief account of the aporias themselves is sufficient to confirm our account of the role of dialectic in Meta. 3. They all take the form of dialectical problems, raising questions that demand a choice between two alternatives for their answers. Having laid out the aporias in this form, however, Aristotle does not follow the Topics method of attempting to solve them dialectically. Although Aristotle’s arguments in book 3 often point in the direction of some conclusions rather than others, there is no attempt to obtain agreement to ἐνδοξα in order to establish one or the other position. The procedure is rather to show why each position is held in the first place and to indicate its strengths and weaknesses. Aristotle uses dialectic in its capacity as πειραστική and ἐξεταστική. The Academic use of dialectic starting from ἐνδοξα is subscientific: dialectic cannot be used to...

52 Thus Berti (1996: 126) is unjustified in taking 3.1.995a24-b4 to indicate that metaphysics is primarily dialectical (cf. note 4 above).
53 We shall argue that this is Aristotle’s position vis-à-vis Platonism.
54 Our extended account of the methodological aporias is in chapter 2; the aporias about the principles are discussed in chapter 6. For additional remarks on the use of dialectic see esp. section IX of chapter 6.
55 E.g., Does it belong to one science or many to investigate the causes? Do only sensible substances exist or also others? Are the principles the elements or the genera? Are the principles universal or particular?
56 Top. 1.2.102b3; SE 11; Meta. 4.2.1004b25-6. Berti concludes that Aristotle’s reference to dialectical as πειραστική must refer to Platonic dialectic (1996: 126-7), whereas on our account dialectic will useful to philosophy precisely in its capacity as πειραστική.
establish scientific principles or conclusions. Used in its critical capacity, however, dialectic has a role to play even in strictly scientific investigations.

Let us briefly pause to summarize before moving on to the common axioms. We have argued that Aristotle's own characterization of dialectic in the *Topics* militates against a conception of metaphysics according to which it is primarily a dialectical inquiry. On the other hand, both in the *Metaphysics* and elsewhere Aristotle makes extensive use of received opinions, opinions that satisfy the criteria for ἔνδοξα. Moreover, these opinions are discussed dialectically in the aporias. Aristotle does not, however, use these opinions as premises in dialectical arguments for first principles. Rather, dialectic is used in its critical capacity on opinions that, although obscure and inadequate accounts of the principles, can nevertheless serve as raw materials for Aristotle's own account.

V

Aristotle's treatment of the common axioms is the second important piece of evidence for his use of dialectic in the *Metaphysics*. Since the axioms are principles of all demonstration, they cannot themselves be treated demonstratively. For this reason, most interpreters who consider the question explicitly assign Aristotle's arguments for the axioms in *Meta*. 4.3-8 to dialectic. This having been done, however, there is little agreement on the role of these dialectical arguments in the *science* of being qua being. We have seen that Aristotle appears to think that the dialectical practice of establishing conclusions from ἔνδοξα is subscientific: philosophy treats issues with an eye to the truth of the matter, dialectic only with an eye to opinion. Nevertheless some interpreters, notably Irwin, maintain that Aristotle uses dialectic in *Meta*. 4.3-8 to justify or establish

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57 *Meta*. 3.1.995b23-4 with 4.2.1004b1-26. Note that in the latter the subject-πάθη model of the *apotopos* (where the subject, ὀπόθετα, is prior to its πάθη) is recommended as the scientific model the dialecticians are lacking. See our discussion in chapter 5, pp. 138-42 below.

58 See in particular Irwin 1988: chap. 9; Dancy 1975: 14-21; Bolton 1994. A notable exception is Code (1986: 355), who argues that *Meta*. 4.4 is meant to demonstrate one of the *per se attributes* of the PNC, i.e., that it is the most certain principle. Against this interpretation is the fact that Aristotle's first conclusion is just (an instance of) the PNC, not some fact about it (1006a33-4; cf. Irwin 1988: 548 n.4; Cohen 1986; Bolton 1994). Many commentators do not address the question in these terms; see, e.g., Lear 1980 and 1988.
the axioms. We shall argue that although Aristotle uses dialectical argumentation extensively in these chapters, no premise of a dialectical argument for the axioms can be more certain than the axioms themselves. Therefore, while Aristotle may use a dialectical argument from premises that any interlocutor must be willing to accept in order to compel his interlocutor also to accept the axioms, no such argument can establish the axioms.

We argued in the first half of this chapter that Aristotle does not attempt to establish scientific principles using dialectic as it is described in the Topics ("pure" dialectic). One of the reasons for this is that the premises of pure dialectic are merely endoxic and not necessarily true. In any argument starting from endoxic premises, an objector may deny a premise without denying something known to be true. Irwin, wanting to retain dialectic as the method for metaphysics but recognizing the limitations of pure dialectic, proposes that Aristotle's arguments for the common axioms in Meta. 4.4-6 introduce a new kind of dialectic, "strong" dialectic. Strong dialectic differs from pure dialectic by restricting itself to a more limited set of premises, premises that are not only endoxic but also state the conditions for the possibility of scientific knowledge and objectivity. The premises of strong dialectic are thus more difficult for an objector to dispute: it is not possible to reject the premise that scientific knowledge and objectivity is possible while continuing to make statements that purport to be parts an objective scientific account of the world. It is metaphysics' task to justify the first principles of the sciences by showing them to be necessary for scientific knowledge and objectivity.

In his discussion of the second aporia in Meta. 3.2, Aristotle raises two questions about the study of the common axioms. Seen in light of their solutions in Meta. 4.3, the questions amount to (1) why should it belong to metaphysics to study the common axioms? and (2) what should the methodology of this study be? (996b26-997a15). We shall be interested in the answers to both questions: the first promises to provide evidence

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60 Cf. Irwin 1988: 170-1, 179-80, 196-8. "[The special sciences do] not ask how things must be if objective truths about them are to be possible, or whether any things satisfy the appropriate conditions. . . . The universal science [i.e., metaphysics], by contrast, studies being qua being, because it studies those properties of the special sciences that the special sciences must themselves assume. It asks how something must be if it is really and objectively a subject with essential and coincidental properties, and asks whether anything meets the conditions we discover" (p. 170). See also section II of our Introduction.
for Aristotle’s conception of the nature studied by metaphysics and the relation of metaphysics to the other sciences, and the second should tell us something about the role of dialectic in Aristotle’s first philosophy. Without adding another study to the already enormous literature on the arguments for the common axioms, we shall attempt to discover what *Meta.* 4.3-8 can tell us about the structure and methodology of the *Metaphysics.* In particular, we shall assess Irwin’s account of Aristotle’s answers to these questions, according to which metaphysics differs from the other sciences by being a second-order dialectical inquiry.

VI

The second aporia inquired whether it belongs to one and the same science to investigate substance and the common axioms. It was not clear why the science of substance, as opposed to some other science, should investigate these axioms (*Meta.* 3.2.996b33-997a2). A solution becomes possible now that the science of substance has been identified with a science of being qua being:

It is evident that the inquiry into [the axioms] belongs to one science and to the science of philosophy; for the axioms belong to all things [ὑπάρχει τοῖς ὁνήματι] and are not proper to one genus apart from the others. And all men use them, since they belong to being qua being, and each genus is a being. . . . So, since it is clear that the axioms belong to all beings qua beings [διὰ τῶν ὅτι ἐν ὑπάρχει πᾶσι], . . . the investigation of these axioms belongs also to him who is to know being qua being.63

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61 For extended discussions of the argument of *Meta.* 4.3-8 see, e.g., Łukasiewicz 1910, Barnes 1969, Anscombe 1961, Dancy 1975, Lear 1980: ch. 6, and the relevant parts of Kirwan 1993 (also pp. 233-4 of his bibliography). Additionally, emphasis on its place in Aristotelian metaphysics is found in Irwin 1977 and 1988, Code 1986 and 1987, Cohen 1986, Bolton 1994. A sign of the prominence of *Meta.* 4.3-8 in recent scholarship is the fact that Kirwan’s bibliography lists at least fifteen books or articles devoted primarily to these chapters. By contrast, Kirwan lists no literature devoted specifically to the per se attributes of being qua being (*4.2.1003b19-1005a13*, discussed chapter 5 below).

62 Irwin 1988: 179-80; 1977: 218-9, 222-5. Cohen (1986: 366-7) follows Irwin (1977) in taking the proof of the common axioms to indicate that metaphysics is somehow a reflective, second-order science, though unlike Irwin he seems to leave open the possibility that metaphysics has first-order components. Leszlj (1975) presents a similar picture of the structure of the Aristotelian metaphysics, but does not rely as strongly on the character of the arguments for the PNC as does Irwin.

63 *Meta.* 4.3.1005a21-9, slight modification to Apostle. The first elision is of the passage that indicates that each scientist uses the axioms to the extent they are applicable in his science; it echoes *APo.* 1.10.76a39-b2. Irwin (1988: 178) also makes the connection between the science of substance and the
The common axioms somehow \(\upsilon \pi \acute{a} \chi \varepsilon i\) to all beings qua beings, and it is the metaphysician who studies the \(\kappa \alpha \theta ' \ a\acute{u} \tau \alpha \ \upsilon \pi \acute{a} \chi \omicron\nu t\alpha\) of being qua being.\(^{64}\) The problem presented in the aporia is solved with the introduction of a science of being qua being that studies both substance (because it is the primary instance of being) and the axioms (because they belong to all things qua beings). The sense of "belonging" here must be a looser sense than that employed in \textit{Meta.} 4.2, where the \(\epsilon \iota \delta \eta\) of being belong to it as demonstrable per se attributes.\(^{65}\) The common axioms belong to all beings just in the wide sense that they are true of all beings. This is apparently enough to make them objects of metaphysics.

Aristotle immediately proceeds to make the contrast with the special sciences familiar from \textit{Meta.} 4.1 and 6.1: no one who examines only a part of being (\(\kappa \alpha \tau \alpha \ \mu \acute{e} \rho \omicron\zeta\)) attempts to say anything about the common axioms.\(^{66}\) Some physicists attempted to investigate the axioms, and quite reasonably,

for these alone thought that they were inquiring about the whole of nature or about being. But since there is a scientist who is yet above the physicist (for nature is only one genus of being), the inquiry into these axioms, too, should belong to him who investigates universally and about primary substance \([\tau \omicron \ \kappa \acute{a} \theta \omicron \lambda \omicron \omicron \ \kappa \acute{a} \ \tau \omicron \ \pi \acute{e} \rho \ \tau \iota \ \pi \acute{r} \omega \tau \tau \nu \ \omicron \upsilon \sigma \omicron \alpha \nu \ \theta \acute{e} \omega \rhotikoc]\). Physics, too, is a kind of wisdom, but not the primary one. (1005a32-b2)\(^{67}\)

The physicists thought that they were investigating the whole of being; therefore, it would be quite appropriate for them also to investigate the axioms that belong to all beings. In the event nature is only one genus of being; hence there is a scientist above the physicist.

\textit{In our last chapter we referred to this passage in order to locate the nature of being in the first genus of substance, primary \(\omicron \upsilon \sigma \omicron \alpha\).}\(^{68}\) There is a first philosophy which studies science of the axioms via the notion of being qua being, although he understands the priority of substance quite differently.

\(^{64}\) \textit{Meta.} 4.1.1003a21-2, 4.2.1005a13-18.

\(^{65}\) See our discussion in chapter 5 below.

\(^{66}\) Cf. 4.1.1003a22-6, 6.1.1025b7-10.

\(^{67}\) Slight modification to Apostle, but retaining his text (following Ross and the mss.) instead of Jaeger's emendation.

\(^{68}\) See chapter 3, pp. 93-4 above. Irwin (1988: 545 n. 49) argues that by "primary substances" Aristotle means "the type conceived as being qua being." Irwin's discussion of the "qua" locution (p. 169) implies that any substance can be conceived qua being (there Irwin correctly rejects the notion that "being qua being" refers to a \textit{kind} of substance). Thus it is not clear what Irwin means by the "type" conceived as being qua being, unless he thinks that by "first substance" Aristotle simply means "substance qua being."
primary substance (1004a2-4, 1005a35) and is also universal and the study of the common axioms (1005a35-b1). Thus the study of primary substance will also be the science of being qua being. Questions about the nature of primary substance and the universality of a science of primary substance remain unresolved. The passage does quite clearly indicate why the study of the common axioms belongs to metaphysics, however: metaphysics is the study of primary substance and this study is universal.

Aristotle implies that if only sensible substance existed, the axioms would be studied in physics. This raises difficulties for those interpretations of Aristotelian metaphysics, such as Irwin’s, that argue on the basis of its study of the axioms that metaphysics must be a different kind of investigation from physics, a second-order rather than a first-order investigation. Physics is agreed to be a first-order investigation of causes and attributes of things in the world. It studies such phenomena as matter, motion, and various species of sensible substance. If there were no genus of being higher than sensible substance, however, the common axioms would be studied by physics. That is, they would be studied by a science that is recognized to be a first-order discipline. The fact that it is actually metaphysics that studies the axioms, then, does not imply that metaphysics is a

Taken with 4.2.1004a2-9, however, this passage strongly suggests that of the several genera of substance “first substance” refers to the first genus of substance as opposed to the second genus, nature. The same criticism may be made of Natorp (1988: 542; quoted in Owens 1978: 283 n. 99). Leszl (1975: 182-3) points out that πρώτη ούσια in Aristotle refers not only to Aristotle’s god but also to the form and τι πρώτη ούσια refers specifically to τι πρώτη ούσια, whether alone and without matter (as in the case of god) or as the formal principle of a sensible substance. This account nevertheless narrows the reference of πρώτη ούσια to exclude sensible substance and the nonsubstantial instances of being.

69 Mansion (1958: 171-4) argues against the identification of first philosophy and the science of the axioms; as Merlan (1959: 150-3) shows, it is impossible to do justice to the text and the parallels to Meta. 6.1.1026a23-32 on Mansion’s interpretation (although Merlan wrongly identifies “being qua being” with primary substance). We shall have occasion to discuss Meta. 6.1 and the concept of first philosophy at greater length in chapter 7. Physics is identified with “second philosophy” at Meta. 7.11.1037a14-15.

70 Notice that Aristotle does not say that metaphysics studies the common axioms because it studies the genus that is common to nature and immaterial substance.

71 It is not clear that Aristotle believes that motion and sensible substance could exist in the absence of immaterial substance; see, for instance, Meta. 3.4.999b4-16, 12.10.1075b24-7.

72 Leszl (1975: 494-526) sees much of the content of Aristotle’s Physics as properly “ontological” rather than physical. Irwin (1988: 115-16) likewise sees much of the content of the Physics as dialectical in nature, although he believes that these discussions, being examples of “pure” dialectic, would be superseded by scientific discussions making use of “strong” dialectic. Our point does not, however, depend on the actual content of the Aristotelian work called the Physics but rather on what tasks Aristotle is prepared to assign to the science of physics at the time of writing the Metaphysics. If Irwin is correct, a post-Metaphysics version of the Physics would likely look quite different from our Physics.
second-order discipline. Aristotle’s assignment of the axioms to metaphysics is based on the universality of the science that studies first substance.

VII

The scientist who knows each genus to the highest degree (μάλιστα) should also be able to discuss the most certain principles (βεβαιωτάτας ἀρχάς) of the genus, and the principles of being qua being are the most certain principles of all (1005b8-11). The most certain principle is that about which it is impossible to be mistaken: it is “most known” (γνωριμωτάτη) and nonhypothetical (b11-14). In APo. 1.2 Aristotle has divided the class of scientific statements into axioms and theses; theses are further divided into hypotheses and definitions. Indemonstrable principles that are proper to a specific genus and thus not necessary for knowing anything at all are hypotheses or definitions; an indemonstrable principle that must be grasped if one is to know that anything is an axiom (72a14-18). In Meta. 4.3 the “most certain principle” is not a hypothesis, because it must be grasped if anything is to be known (1005b15-17). This principle is thus “most known” not only in the sense that it is impossible to be mistaken about it but also in the sense that it is the principle of all other knowledge (cf. b33-4).

Having established this, Aristotle goes on to inquire what the principle is. It is the principle of noncontradiction (PNC): “the same thing cannot both belong and not belong to the same object and in the same respect” (b19-20). Aristotle maintains that this is the most certain of principles for the reason already stated: “it is impossible for anyone to believe the same object to be and not to be [εἶναι καὶ μὴ εἶναι].” Even Heraclitus, whom some take to have denied the PNC, cannot have truly believed this denial: one does not necessarily actually believe all of one’s own statements (1005b23-6). In Meta. 4.4

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73 The most certain principles will thus be the highest principles, since it is impossible to know anything if one does not know them.

74 A slightly different account is found in APo. 1.10.

75 Ross (1924: i.263) emphasizes the affinity between ἀνοηθέτον at 1005b14 and the nonhypothetical character of Platonic dialectic, but the reference to the APo. seems equally to the point. Strict conformity to the APo. scheme would make a contrast between theses and axioms more desirable, though Aristotle is no doubt leaving aside the possibility that the axioms are definitions.

76 This statement is widely recognized to be problematic; for discussion, see Lear 1988: 251-2; Ross 1924: i.264. Briefly, Heraclitus is being accused not of insincerity but of confusion about what he is stating.
Aristotle emphasizes that there is no demonstration for this principle: to demand a demonstration of it is to show lack of education.\textsuperscript{77}

Aristotle's procedure in *Meta*. 4.3 is thus first to establish that there are some principles studied by metaphysics that one cannot fail to know to be true, and then to state the most fundamental of these principles. Strictly speaking this is only to locate the PNC among the axioms known in metaphysics. What needs to be determined is whether Aristotle's introduction of the PNC as the “most certain principle” in *Meta*. 4.3 is also meant to be sufficient indication that the PNC is *true*. If so, no additional argument is necessary, and the properly scientific treatment of the PNC can be limited to its statement and inclusion among the most certain principles in *Meta*. 4.3. The dialectical arguments in *Meta*. 4.4-6 would not serve to establish the principle, but might rather be compared to Aristotle's dialectical discussion of Parmenideanism in *Phys*. 1.2-3. For physics it is a hypothesis that there is motion, and it is not the business of physics to *show* that motion exists.\textsuperscript{78} If Aristotle is using ὑπόθεσις in its technical sense at *Phys*. 8.3.253b5, then the existence of nature and motion would be an indemonstrable principle known in physics. The dialectical argument against the Parmenideans is intended not to establish the principle but because a discussion of their views is generally of scientific interest (185a20). The relation of the argument for the PNC to its presentation could conceivably be the same. Since the PNC is a first principle there is no argument that will establish it, but a dialectical examination of the various objections to it is nevertheless of use, particularly from the point of view of dealing with objections.

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\textsuperscript{77} *Meta*. 4.4.1005b35-1006a1; cf. 4.6.1011a8-16. Presumably what is lacking is education in analytics; cf. 4.3.1005b2-5. On the impossibility of there being a demonstration of everything see *APo*. 1.3, 1.19-23. The arguments of *Meta*. 4.4 cannot be conceived as demonstrations through impossibility (*APo*. 1.26), for demonstrations though impossibility explicitly make use of the common axioms, in particular the law of the excluded middle (1.11.77a22-5).

\textsuperscript{78} *Phys*. 1.2.104b24-185a20 with 8.3.253a32-b6. Aristotle does not make it clear whether there is any science that can establish the existence of motion; although it seems likely that this is an indemonstrable proper principle (i.e., a thesis, and more particularly a hypothesis) for physics.
On this interpretation, *Meta. 4.3* makes an implicit appeal to Aristotelian intuition (μουσ). The PNC is asserted because its denial is found to be unthinkable: it is "impossible for anyone to believe the same thing to be and not to be." Likewise, Aristotle's statement that Heraclitus cannot have believed the denial of the PNC is not a piece of (bad) exegesis but a conclusion drawn from the a priori unthinkability of this denial. Beyond the appeal to μουσ there is very little of a properly scientific nature that can be said about the principles: they are not the results of investigations into the *causes* of phenomena, so there is no progression either from the phenomena to their causes or from the causes to the phenomena.

The other possibility is that in *Meta. 4.3* Aristotle is only indicating that it is metaphysics' job to know the PNC, before going on to provide a justification for it in *Meta. 4.4*. In this case the dialectical arguments in *Meta. 4.4* would constitute a necessary part of a properly scientific treatment of the axioms. Irwin would be correct in concluding that at least part of metaphysics is essentially dialectical, in the sense of using dialectic as the proper scientific method for establishing first principles. Several textual features seem...
to point to this conclusion. Aristotle does not mention νοῦς either here or anywhere else in the *Metaphysics*, including his account of the progression from sensation to wisdom in *Meta.* 1.1. This, and the presence of what seems to be an argument for the PNC in *Meta.* 4.4, invites the conclusion that Aristotle intends to replace νοῦς with some kind of nondemonstrative argument.\(^{82}\)

On closer examination, however, neither of these features points as clearly to Irwin’s interpretation as one might think. Although Aristotle does not mention νοῦς in *Meta.* 1.1, he does refer at 1.1.981b25-9 to the treatment of the intellectual virtues in *NE* 6. The latter, as we have seen in chapter 1, gives an account of ἐπιστήμη and νοῦς in the same terms as they were developed in the *Posterior Analytics*, going as far as to refer us to the *Analytics* for a fuller treatment.\(^{83}\) Aristotle is sparing in his references to νοῦς, even in works thought to be early.\(^{84}\) Given Aristotle’s reference in *Meta.* 1.1 to the *NE* passage, nothing can be inferred from the absence of explicit references to νοῦς.\(^{85}\) It is also worth pointing out that Irwin does not provide an account of the introduction of the PNC at the end of *Meta.* 4.3.

In order to evaluate the claim that *Meta.* 4.4 provides an argument for the PNC it is necessary to consider what such an argument must look like on Irwin’s view. On this view Aristotelian metaphysics must be an inquiry into the conditions of the possibility of scientific knowledge, and so the PNC must be defended as one of these conditions. Thus while Aristotle is usually construed as arguing that the denier of the PNC denies himself the possibility of intelligible communication generally, Irwin construes Aristotle as more

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\(^{82}\) Irwin 1988: 196-8; Cohen 1986: 360.

\(^{83}\) *NE* 6.3.1139b32-3. Irwin recognizes the existence of the discussion of νοῦς in *NE* 6.6 (1988: 531 n. 2) but does not seem to draw any conclusions from it, despite the fact that Irwin places the *NE* among the late works influenced by the *Metaphysics* (pp. 350-1, 474). Irwin shows no awareness of the *Meta.* 1 passage that refers to the *NE*.

\(^{84}\) I am aware of no use in this sense outside the *APo.* and *NE* passages we have discussed.

\(^{85}\) Notice Aristotle’s *reason* for not going into detail about the forms of cognition in *Meta.* 1.1: this kind of detail is not necessary for the point he is trying to make, namely, that wisdom the science of the highest principles (981b27-9). This comment is of interest in its suggestion that Aristotle will draw our attention to the details of his methodology only to make specific points. If this is the case, it is generally not possible to infer that Aristotle is not using *APo.* methodology from the absence of explicit references to the *APo.*
narrowly arguing that his opponent denies himself the possibility of scientific knowledge.\footnote{Irwin 1988: 188. "Perhaps we could construct an argument parallel to Aristotle’s, in order to show that the PNC is necessary for meaningful thought or speech as well; but this is not his main concern."} It seems probable that if the PNC is necessary for intelligible communication, it is also necessary for scientific knowledge; but there is no reason to think that Aristotle is making this much more restricted claim. Aristotle thinks that his opponent commits himself to the PNC as soon as he tries to say something, and the opponent who refuses on principle to say anything is “indeed like a plant” (1006a11-15). To accept the conditions necessary for intelligible discourse is not necessarily to admit the possibility of scientific knowledge. An opponent of the PNC might well also want to deny that the human mind is capable attaining knowledge of the causes of things from starting points in sensible phenomena. There is nothing in Meta. 4.4, for instance, that would explicitly refute Humean skepticism about knowledge of causes. It is not clear that Aristotle’s argument establishes anything nearly as significant as the possibility of science, but on Irwin’s conception of metaphysics and strong dialectic this is what it must do.

Finally, Irwin’s account of Meta. 4.4 presents a much tidier picture of the arguments in this chapter than is justified by the text itself. The argument from intelligible communication, which Irwin and most commentators focus on, is but one of several dialectical refutations offered in this chapter.\footnote{At least by 1008a7, Aristotle has moved on to several wholly independent arguments for the same conclusion. As Dancy (1975: 28) points out, it appears that at least part of Aristotle’s strategy is to “drown [his opponent] in argument.” Ross (1924: i.265-8) identifies some seven additional arguments, of varying length and persuasiveness.} Aristotle likely considered the first argument his best, and it is certainly this argument that he develops at the greatest length. It seems misleading, however, to draw conclusions about the nature of the proof of the PNC and of metaphysics generally by relying on this argument to the exclusion of the others.\footnote{At least some of the other arguments, for instance that the deniers of the PNC are refuted by their own actions (1008b12-27), cannot plausibly be construed as arguments from the possibility of scientific knowledge.} Furthermore, the bounds of the first argument are not very clearly defined. It is fairly clear that the material from 1006a18 to 1007a20 belongs to this argument, although its conclusion is drawn at 1006b34-5 and the material that follows this simply expands further on this conclusion.\footnote{For this structure see also Dancy 1975: 28.} However, what might initially appear to be two independent
arguments at 1007α20-b18 and 1007β18-1008α7, in fact further develop Aristotle's responses to two objections discussed at 1006β34-1007α20.

Scholars disagree to what extent the main argument uses controversial essentialist premises. As Aristotle proceeds to develop arguments against the objections, however, he introduces doctrines that are clearly Aristotelian and thus less likely to receive assent from any random interlocutor. This is not to say that the main argument is unconvincing in the absence of these additional premises, but Aristotle clearly believes that additional support is possible and may even be required to meet certain kinds of objections. The first supplementary argument (1007α20-b18) argues for the Aristotelian conception of substance with a single essence that serves as a subject for attributes. The necessity of such an argument has already been suggested by 1007α10-20, where Aristotle attempts to parry his objector's suggestion that there is nothing that a thing is essentially. The second argument (1007β18-1008α7) develops the idea, already presented at 1007α3-7 as a response to an objection, that if contradictory predicates may be asserted of the same thing all things will be one. Aristotle argues that to be is necessarily to be something determinate and in actuality, but if all things are one they will exist only in potency. As Aristotle's argument progresses, he introduces premises that are unlikely to be among the very restricted set allowed by Irwin's strong dialectic. It is not possible to isolate an argument that proceeds only from theory-neutral conditions of the possibility of science.

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90 For the view that the first argument introduces the concept of τι ἡν εἶναι, and thus a controversial essentialist premise, see Lear 1980: 109-12, and 1988: 257-9; and Code 1986: 346. Against these interpretations see Irwin 1988: 549 n. 12; Bolton 1994: 342-4 (and by implication Kirwan 1993 and Ross 1924 ad loc.). Bolton, who argues that the main argument is an example of peirastic (SE 11) in which the opponent is entirely responsible for the premises, is thus anxious to deny the introduction of any developed concept of τι ἡν εἶναι and to dissociate the supplementary arguments from the main argument even though the issues they deal with arise in response to objections to the main argument (p. 344 n. 18).

91 Irwin wrongly takes the necessity of substances and essences to be a conclusion drawn from the truth of the PNC (1988: 183-4). At 1007α20-b18 Aristotle presents arguments that there must be substances and essences, arguments whose premises have nothing to do with the PNC. The point of the passage is not to draw an additional conclusion from the truth of the PNC but rather to buttress Aristotle's refutation of its denial (so also Dancy 1975: 94). Irwin altogether ignores the second supplementary argument: there are no substantive references to 1007β18-29 in his index locorum.
For these reasons, it is doubtful that Aristotle is attempting to establish the PNC using strong dialectic. If our account of the uses and limitations of Topics-style dialectic is accurate, he cannot be attempting to establish them using pure dialectic either. Is it possible to characterize the arguments in Meta. 4.4-6 more positively? What these arguments do all have in common is the fact that they are directed at denials of the PNC. They attempt to deal with the PNC's opponents more or less on their own terms, rather than presenting arguments from principles proper to the subject.92

In Meta. 4.5 Aristotle writes that people who deny the PNC do so for two kinds of reasons: some deny the PNC because they find themselves forced into it by certain aporias, whereas others seem to deny it merely for the sake of argument (λόγου χάριν, 1009a15-22). Those who are forced into this position by aporias can be “cured of their ignorance” if Aristotle can show how the aporias can be solved without denying the PNC. In this case Aristotle will address his arguments to his opponents’ thought (διάνοια, a20): not the (unthinkable) thought that the PNC is false but rather the doctrines that lead them to this denial. For those who deny it for its own sake, however, the only cure is verbal refutation.93 As Kirwan points out, it is not necessary to maintain that either kind of opponent is able to make the denial of the PNC intelligible to themselves: it may be either a paradox arrived at as the necessary implication of other beliefs, or a mere debater’s toy.94 Aristotle’s treatment of the PNC in Meta. 4.4-6 divides itself roughly into arguments appropriate for each kind of opponent. Chapter 4, as we have seen, contains the refutations; chapters 5 and 6 sketch solutions to aporias that lead people to deny the PNC.95

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92 The latter, of course, is an impossible task, since there are no further principles that might be used to argue for the PNC. I say “more or less” because Aristotle usually eventually introduces principles that are peculiarly his.
93... ἐλεχο... τὸ ἐν τῇ φωνῇ λόγου καὶ τὸ ἐν τοῖς όνόμασιν (a18-22).
94 Kirwan 19932; 106-7. See also Lear 1980: 113; Code 1986: 356. Kirwan plausibly identifies the kind of person who argues against the PNC for its own sake with οἱ ἐν τοῖς λόγοις ἀγωνιζόμενοι καὶ διαφιλοσοφοῦντες (SE 3.165b11; cf. Aristotle’s characterization of the sophist at Meta. 4.2.1004b24-6). Those that accept the conclusion as implied by other premises that they hold are not necessarily able to conceive the conclusion as true.
95 Chapter 7 is concerned with the LEM; chapter 8 draws some general conclusions.
Clearly in the latter case, Aristotle's arguments do not establish the PNC: to defuse objections to a position is not the same as to prove its truth. Much of the discussion here is of issues that properly belong in physics: people have been led to deny the PNC because of Heraclitean flux theory, accounts of perception in terms of motion, or flawed attempts to avoid Parmendeanism. The discussion of these issues does not really belong to metaphysics, and if the PNC is really a first principle it is presumably the physicists' responsibility to ensure that their accounts of motion and perception are in accordance with it in the first place. There is nevertheless room in the *Metaphysics* for a dialectical discussion aimed at showing that such accounts are possible. Aristotle's position is somewhat similar to that of the contemporary philosopher committed on a priori grounds to (say) the principle of sufficient reason and faced with empirical evidence in physics that seems to contradict it.

The point of the arguments in *Meta*. 4.5-6 is largely to remove obstacles to accepting the PNC, but Aristotle recognizes that this is ineffective against someone who denies the PNC for its own sake. The latter need not persuasion but refutation (ἐλεγχός). Bolton has drawn attention to certain similarities between what Aristotle describes here (and practises in chapter 4) and the peirastic argument (πειραστική) that Aristotle introduces in the *Sophistical Refutations*. Peirastic is a subspecies of dialectic (169b25, 171b4-5), whose aim is to examine and refute false claims to scientific knowledge using premises accepted by the person making these claims. It thus differs from

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96 At 1009a18 Aristotle writes that they need compulsion (Βιας). In context this refers not to physical violence (*pace* Nussbaum 1986: 252-3) but to the sort of argument that, unlike the attempt to reply to objections, does compel the interlocutor to accept the conclusion. Cf. Ross 1924: i.274; Dancy 1975: 74; *Meta*. 1011a15; *Top*. 105a15.

97 Bolton 1994. Bolton tries to make Aristotle's argument in 4.4 precisely fit Aristotle's description of a peirastic argument in the *SE* (pp. 329-38, 347-51). I am not convinced that this is possible without distorting the argument. Moreover, there is no reason to expect strict conformity to the methodology of the *SE* in a work that is (by most estimates) much later than it and deals with issues that Aristotle shows no awareness of in the *Organon*. In particular, Bolton denies that Aristotle is somehow arguing from premises that the interlocutor must (and does actually) accept if he is to engage in argument in the first place; in what follows I am largely assuming this (traditional) interpretation rather than Bolton's.
scientific refutation in arguing not from the proper principles of the science but rather from premises accepted by the interlocutor.98

As Bolton points out, Aristotle has already indicated in Meta. 4.2 that dialectic is πειραστική περὶ ὁν ἡ φιλοσοφία γνωριστική (1004b25-6). Although (it is implied) dialectic cannot yield any knowledge in metaphysics, it can nevertheless examine and refute false claims to knowledge.99 The main argument in Meta. 4.4 follows the model of peirastic on at least two crucial points: it is a refutation, and it starts from premises conceded by the interlocutor. The argument is not an attempt to establish the PNC scientifically, but, like the other arguments in Meta. 4.4-6, attempts to deal dialectically with one kind of denial of the PNC.100 It is one of the “forceful” arguments, for use primarily against those who deny the PNC for its own sake, against opponents whose purposes are likely to be merely eristic. In this case it is possible that the argument aims not primarily to convince Aristotle's opponent but rather whatever audience he and his opponent might happen to share.101

We have suggested that Meta. 4.4 should be regarded as a refutation of the denial of the PNC but not as an attempt to establish the PNC. This is open to the objection that to refute ~x is necessarily to establish x, and so we are making a distinction without a difference. There is clearly a qualified sense in which Meta. 4.4 does attempt to establish the PNC.102 However, it does so only with respect to an interlocutor and on the basis of premises granted by that interlocutor. The argument from the possibility of intelligible communication can only be made, and need only be made, against an interlocutor who

98 Peirastic arguments “deduce from premisses which are accepted by the answerer and which anyone who claims to possess knowledge on the subject is bound to know”; SE 2.165b5-6 (trans. ROT). On the contrast between scientific and dialectical refutation see SE 9.170a27ff.
99 As Bolton points out (1994: 327 n. 5), most translations of 1004b25-6 miss the reference to πειραστική as described in the SE. Bolton is perhaps too hasty in assuming that Aristotle is referring specifically to the SE, but clearly πειραστική in the Metaphysics would include these kinds of arguments.
100 The dialectical character of the argument may explain some features that are difficult to explain otherwise. For instance, at 1006b11-28 Aristotle writes of the τὸ ἐἶναι ἄνθρωπον and τὸ μὴ ἐἴναι ἄνθρωπον as though there were an essence of not-man in the same sense that there is an essence of man, but Meta. 7.4 makes it clear that there are essences of not-beings only in a very attenuated sense.
101 If the opponent is not primarily concerned with the truth, then all that is possible may be to provide others with arguments to prevent them from being forced to accept false conclusions because they do not know how to refute them. Cf. SE 3, EE 1.6.1217a1-18, Meta. 4.7.1012a17-20 (with its mention of eristic).
102 We are avoiding the issue whether Aristotle’s argument against his opponent works. For a detailed discussion that recognizes the dialectical character of the argument see Dancy 1975.
refuses to publicly accept the PNC. In the absence of such people no such argument is either necessary or possible.

If one dispenses with the recalcitrant interlocutor, Aristotle's argument becomes an attempt to establish the PNC using the existence of interlocutors and the possibility intelligent communication between them as premises. But these premises themselves are, if anything, less certain than the PNC. If Aristotle is right that the PNC is the "most certain principle," then we can be no more certain that intelligible communication is possible than we can be that the PNC is true. This is true also of Aristotle's recalcitrant interlocutor: the difference is that the interlocutor is not willing to publicly accept the PNC, while he must be willing to accept the possibility of intelligible communication if he is to remain an interlocutor.\textsuperscript{103} The usefulness of the possibility of intelligible communication for Aristotle's argument is not that it is more certain than the PNC but rather that, unlike the PNC itself, his interlocutor must be willing to accept this premise.\textsuperscript{104} The argument remains a refutation aimed at a specific kind of opponent of the PNC: it does not establish the PNC except incidentally and with reference to an interlocutor. If the interlocutor says nothing, there is no proof.

To clarify this point it is helpful to return to Aristotle's distinction between the two kinds of opponents of the PNC. The easier case is the opponent who is driven to deny the PNC because of certain aporias. This kind of opponent is honestly mistaken: he needs persuasion (πειθοῦς, 1009a17-18) that the difficulties do not require abandonment of the PNC, and once he is persuaded of this he will no longer deny it. Aristotle can therefore address his arguments to this kind of opponent's διάνοια (a20). In the harder case, however, an appeal to διάνοια is no longer possible: if the opponent is genuinely confused about a first principle, there is nothing Aristotle can do to unconfuse him. One suspects that Aristotle himself does not believe this kind of opponent to be sincere in his

\textsuperscript{103} Irwin tries to show that the possibility of scientific knowledge (or of intelligible communication) is a reason for accepting the PNC (1988: 187); whereas in fact we have no better reason for accepting the possibility of intelligible communication than we have reason to accept the PNC. Irwin does not appreciate the significance of Aristotle's estimate of the character of his various kinds of opponents (4.5.1009a15-21).

\textsuperscript{104} As Aristotle writes at 1009a18-22, the argument against this sort of opponent is addressed not so much at his thought as at his verbal expression.
disbelief of the PNC. In any event, it is necessary to abstract completely from the thought of this kind of opponent and to find some sort of dialectical argument from a premise he must accept, in order to compel him to accept the PNC. The interlocutor who is genuinely confused about the PNC may have no better intuitive grasp of it than before, but at least he will acknowledge that he must himself be committed to it.105

VIII

In Meta. 4.3 Aristotle attributes the discussion of the common axioms to metaphysics rather than physics because the investigation of the common axioms belongs to the philosopher who “investigates universally and about first substances” (1005a33-3b2). The connection between a universal investigation and one concerned with first substances was left unclear. We shall finish with several passages that seem to make this identification more intelligible. The first argument that is of interest for our purposes is the second supplementary argument in Meta. 4.4. If it is possible for contradictories to be predicated simultaneously of something, “all things will be one” (1007b18-20).106 A man will also be not a man, and a trireme, and not a trireme:

And then what results is the doctrine of Anaxagoras, “All things are together” and so no thing is truly one [ὅστε μὴ θεν ἀληθῶς ἐν ὑπάρξειν].107 Accordingly, they seem to be speaking of the indeterminate [τὸ ἄριστον], and although they think they are speaking of being, they speak of not-being [οἰόμενοι τὸ ὁν λέγειν περὶ τοῦ μὴ ὅντος λέγουσιν]; for the indeterminate is potential being and not actual being. (1007b25-9)

105 Lear (1988: 251-2) argues that the argument is meant to show us that “we really do believe the principle of noncontradiction” whether we assert it or not. Lear perhaps underestimates the importance of Aristotle’s characterization of this sort of opponent.
106 Recall that this develops a point already made in the main argument at 1007a3-7.
107 Our reading follows Jaeger and Kirwan. Also possible is Ross, Apostle, and the ROT: . . . ἀληθῶς ὑπάρξειν (“nothing will truly exist”). Ross and Jaeger do not seem to be in agreement about the manuscript tradition: according to Jaeger ms. J and Alexander both follow his reading, whereas Ross attributes this reading only to William of Moerbecke and does not comment on Alexander at all. According to Ross his reading is that of J and Aβ; according to Jaeger it is only that of Aβ. Alexander’s summary of the passage (ὅς εἰλικρινῶς μηθεν ἐν εἰληπεν καὶ τὸδε τι, in Meta. 291.26-7) lends support to Jaeger’s reading though not conclusively. Ms. E reads ἐνοπάρξειν, almost certainly incorrect but perhaps additional evidence for Jaeger’s reading. The ms. evidence is strongly in Jaeger’s favour if he is right about J.
If one is to claim that something both is and is not, it is necessary that one be talking about beings. To be is to be something determinate and intelligible; so that names must signify distinct essences that preclude the thing's also having some other incompatible essence.\textsuperscript{108} The Anaxagorean "all things together" implies a lack of determination incompatible with claiming that something is a being. We are seeing hints of an identification between being, \( \nu\sigma\alpha \), and essence that will be made explicit in \textit{Meta}. 7.6.\textsuperscript{109} The only way that something can be is to be something, and this can be only if it either is an essence (if it is an instance of primary \( \nu\sigma\alpha \)) or has an essence that identifies it and makes it intelligible (in the case of sensible \( \nu\sigma\alpha \)).\textsuperscript{110} This argument is based not on the conditions for scientific knowledge or even on the conditions for intelligible communication, but on the conditions for something to be a being.

The second point of interest for our purposes is Aristotle's response to Heraclitean flux doctrine in \textit{Meta}. 4.5. Observing that all things are in motion, and thinking that truth is incompatible with constant change, some physicists "came to the belief that nothing indeed may be truly said of that which changes altogether and in every way" (1010a7-9). Aristotle points out that physicists overstate the implications of constant change for the possibility of truth: much change is merely quantitative and does not affect the \( \epsilon\delta\omega\varsigma \) by which things are known (1010a22-5). However, he does seem to allow that there is something to the claim that the fact that things are changing undermines their claims to be beings and hence to be the referents of true statement. "When the changing thing changes," Aristotle admits, "there is some reason for these thinkers to truly think that the changing thing is not" (1010a16-17).\textsuperscript{111} His response is that during a change there is always something that still or already exists (a18-22): the termini and \( \upiota\pi\omega\kappa\epsilon\imath\mu\varepsilon\nu\nu \) of the change, considered in themselves, are beings.

\textsuperscript{108} Essence (\( \tau\iota \ \hat{\eta}\nu \ \epsilon\iota\nu\varsigma\alpha \)) is not mentioned explicitly here, though it does figure prominently in the first supplementary argument and possibly in the main argument (see note 90 above).
\textsuperscript{109} As Lear recognizes in 1988: 257; cf. 279-80.
\textsuperscript{110} Many commentators (e.g., Irwin 1988, Scaltsas 1994) identify sensible substance with its essence. I will argue against this identification in chapter 8.
\textsuperscript{111} Thus Aristotle would not assert something to the effect that since the statement that "the thing is changing" remains true, the mutability of the sensible world makes no difference to its claim to be.
Just insofar as the thing is changing, however, it is not strictly true to say that it is.\footnote{Motion, coming-to-be and the like are beings in a secondary sense, however; \textit{Meta.} 4.2.1003b7-10.} At one point Aristotle goes as far as to say that “if all things are in motion, nothing will be true” (4.8.1012b26-7). In \textit{Meta.} 4.5 he appeals to the existence of immovable substances to show that the PNC applies to at least some things: “it is only in the place of sensible things around us that generations and destructions constantly occur, but this place is, in a manner of speaking, not even a part of the whole universe; so that it would be more just to reject the sensible things in this place for the sake of things in the rest of the universe than to condemn the latter for the sake of the former” (1010a28-32).\footnote{Aristotle makes the same appeal at 1009a36-8 when discussing Parmenidean problems about generation and destruction.} Even if we cannot provide an account that allows sensible things to both be and be changeable, there remain the immaterial, unmoved substances.

It is perhaps not surprising that Aristotle should sound most like a Platonist in his approach to the problem that (on Aristotle’s account) led Plato to deny being and intelligibility to the sensible world in the first place.\footnote{Cf. \textit{Meta.} 1.6.987a29-b10, 13.4.1078b12-17.} Certainly Aristotle is not prepared to reject the claims of sensible things to be beings. Nevertheless, he does seem to genuinely accept the view that the mutability of the sensible world renders problematic its claim to beingness, and hence also its conformity to the axioms that belong to being qua being.\footnote{The relevant axiom is probably the law of the excluded middle rather than the PNC: cf. 4.5.1010a35-b1 with 4.7.1012a24-8 and 4.8.1012b22-31. The second of these passages attributes the denial of the PNC to Heraclitus, but the first and third suggest that on Aristotle’s view it is the denial of the LEM that is more consistent with Heraclitean flux.} \textit{Meta.} 4.4 suggested that being requires essence; now it seems that being and essence require at least a qualified permanence. The fact that a world that is in constant change has some claim to being and intelligibility is something that requires explanation: against a Platonic and Heraclitean background, it cannot be accepted as a given.\footnote{ Cf. Owens 1978\textsuperscript{3}: 295-6.}

These arguments put us in a better position to understand Aristotle’s statement in \textit{Meta.} 4.3 that the science of primary substance also studies the common axioms. To say that something is is to say that it is something actual and determinate, something with an essence. Furthermore, Aristotle suggests that PNC applies more strongly the more a thing
is permanent. Both these characteristics are found to the highest degree in Aristotle's god. Aristotle's god is "primary η ἓν ἐίνακε" (12.8.1074a35-6) and mind identified with its own intelligibility (12.9.1074b34-5). It is also the substance that is unqualifiedly separate, unmoved, and eternal (1073a3-5). The PNC is necessary for any scientific knowledge, but is itself a reflection of the fact that there are determinate essences in the world which are what they are and not something else. Likewise, the PNC and LEM are a reflection of the fact that the world is not in constant flux: the world is made up of relatively stable things about which there may be true statements. The qualities that are found to the highest degree in divine substance are also those that make the sensible world intelligible and thus subject to the common axioms.

If first substance turns out to be divine substance, and the qualities of intelligibility and permanence belong to the highest degree to divine substance, the identification of the science of the axioms with the science of first substance is not as surprising as first appeared in Meta. 4.3. In later chapters, we shall attempt to understand how the conclusions drawn in the first instance of first substance can also be applied to entities other than first substance. As of yet, it is not wholly clear what first substance is, never mind why the science that studies it should also be a universal science of being qua being. Nevertheless Aristotle's arguments provide useful tentative indications of the nature of first substance and hence of the nature qua which metaphysics studies being.

IX

In considering the role of dialectic in the Metaphysics we have addressed disparate texts and issues, focusing primarily on the place of Aristotle's discussions of the aporias and the common axioms. The interpretations we have been considering approach the use of dialectic in the Metaphysics in very different ways. The approach first advocated by Owen saw Aristotle's use of received opinion and aporetic discussion as evidence that the philosophical works are using a dialectical methodology similar to that in the Topics; we

saw this approach applied to the *Metaphysics* in particular by Berti. Recognizing that this "pure" dialectic is inadequate for establishing scientific conclusions, Irwin attributes to Aristotle a "strong dialectic." Like Kant's arguments in the *Transcendental Analytic of the first Critique*, strong dialectic establishes scientific principles on the basis of their being required for the possibility of scientific knowledge and objectivity. We have argued that neither of these approaches is correct. Although Aristotle does use dialectic both in *Meta.* 3 and *Meta.* 4.4–6, in both cases he uses it critically or peirastically, and in neither case does Aristotle claim to establish a conclusion scientifically based on dialectical reasoning. That said, Aristotle is extremely vague about what methodology he is using to arrive at the principles of being and of demonstration. We are left to assume that Aristotle is using some version of induction and intuition, but Aristotle does not state this explicitly. In this respect the conclusions of this chapter are mainly negative.
Chapter 5
The Attributes of Being

In chapter 3, we argued that metaphysics fulfills one of the basic requirements of a Posterior Analytics-based science in being the study of a specific nature or phenomenon. In that chapter we suggested that metaphysics would study on the one hand the principles and causes, and on the other hand the attributes, that are καθ’ αὐτό and ἂν αὐτό to being and substance. In this chapter we shall argue that the bulk of Meta. 4.2—that is, everything that follows the πρὸς Ἐν reduction of being to substance—is Aristotle’s attempt to show how metaphysics follows the APo. in being a study of the per se attributes of being. Additionally, we shall introduce evidence that suggests that the methodology intended for this investigation is the APo. methodology of demonstration. We saw in our last chapter that one of the tasks of the science of being is a nondemonstrative grasp of the common axioms that belong to all beings qua beings. We shall argue in the present chapter that the nondemonstrative methodology of one of metaphysics’ tasks does not prevent Aristotle from assigning to the same science a task with a demonstrative methodology. The chapter will conclude with an investigation of the extent to which Aristotle follows his own methodological preaching in his substantive treatments of the attributes of being.

I

As was the case with our treatment of Aristotle’s account of the common axioms, the best starting point for our discussion is the relevant methodological aporia. The fifth aporia raises two questions. One must inquire

(1) whether our investigation is concerned only with substances or also with the per se attributes [καθ’ αὐτὰ συμβεβηκτα] of substances. In addition, (2) concerning sameness and otherness and likeness and unlikeness and contrariety, and with regard to priority and posteriority and all other such, about which the dialecticians are trying to inquire, conducting their inquiry from accepted opinions
[ἐκ τῶν ἐνδοξων] only—to what science does it belong to investigate all these? To these we must add their own per se attributes, for we must inquire not only what each of these [sameness, etc.] is [τι ἄστι], but also [e.g.] whether there is only one contrary to a contrary. (3.1.995b18-27)

The aporia appears to be asking two questions, without clearly indicating the relation between them. We shall see how the two questions are related when we investigate Meta. 4.2 in detail; the preliminary arguments pro and contra are concerned only with the first question.

The aporia's argument against assigning the study of per se attributes to science of substance is that this would appear to make the science of substance demonstrative, but there is no demonstration of τι ἄστι (Meta. 3.2.997a30-2). The objection is presented rather cryptically: it is not immediately clear why the impossibility of demonstrating τι ἄστι should have any implications for including the attributes of substances in the science of substance. The argument in favour of assigning the study of substance's attributes to the science of substance is much clearer: if there are demonstrable attributes that are per se to substance—attributes that belong to being and substance ὁ ωςότι—it is difficult to see what science other than the science of substance would study them (b32-4). We shall be in a better position to understand what Aristotle means by the impossibility of a demonstration of τι ἄστι, and the implications of this impossibility for the use of demonstration in metaphysics, when we consider his account of the methodology for a study of the principles and causes of being in Meta. 6.1.¹ What we can infer from the aporia itself is that it seems that part of the science of substance, that is, the investigation of τι ἄστι, cannot be demonstrative. If this is the problem, the solution may be to recognize that the various tasks assigned to the science of being will not all have the same methodology.

¹ See chapter 6, pp. 157-61; cf. chapter 8, pp. 260-2. Irwin (1988: 172-3) regards Meta. 6.1.1025b10-16 as evidence that metaphysics cannot be demonstrative. This follows only if one maintains that the science of being must have only one methodology.
The treatment of the per se attributes of being in *Meta*. 4.2 divides roughly into three parts. The first part (1003b19-1004a2 and 1004a9-31) introduces sameness, difference, and so forth as "forms" (εἰδη) of being and unity. Aristotle then explicitly raises the fifth aporia and argues that its solution is to regard these εἰδη as per se attributes of being qua being and unity qua unity (1004a31-b26). The scientific approach to this study is contrasted with dialectical and sophistic attempts to deal with the same material. Finally, Aristotle attempts to show how his approach is continuous with his predecessors' accounts of the contraries as principles of all things: all things are reduced to contraries and these ultimately to the one and the many (1004b27-1005a13). The chapter ends with a brief conclusion: it belongs to the same science to study both being qua being and its per se attributes (1005a13-18).

The discussion begins abruptly with the statement that it belongs to generically one science to investigate all the "forms" of being (εἰδη τοῦ δεός):

For each genus of things there is both one power of sensation and one science; grammar, for instance, which is one science, investigates all spoken sounds [πάσας θεωρεῖ τὰς φωνὰς]. Accordingly, it belongs to one generic science to investigate all the forms [εἰδη] of being, and the forms of the forms. (1003b19-22)²

The role of this text is initially unclear. We shall argue that it is Aristotle's introduction to his treatment of sameness, otherness, and so forth, which are the εἰδη and per se attributes of being.³ The passage has been given at least two other interpretations, however, as referring either to the various kinds of substance or to the various categories. These difficulties arise partly because of uncertainties about the interpretation of certain key

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² Our translation differs significantly from Apostle's; on the difficulties of translation see this paragraph and the next in the main text. Notice that Aristotle does not use εἰδη here in connection with the way grammar studies spoken sounds, so Apostle's translation "all kinds of speech" is misleading in its implied parallelism with the εἰδη of being.

³ Cf. *Meta*. 3.1.995b23-4. This interpretation is supported by, among others, Ross 1924: i.256-7, Owens 1978²: 275-9 and n. 55; and Mansion 1958. However, Jaeger (1957: apparatus ad 1004a2) and Kirwan (1993²: 82) follow Alexander (in *Meta*. 250.32-251.6) in associating 1003b19-22 with 1004a2-9 rather than 1003b22-1004a1. All are agreed that 1004a2-9 is out of place in its current position; the disagreement is rather whether 1004a2-9 interrupts 1003a19-1004a1 and 1004a9ff., or 1003a22-1004a1 interrupts 1003b19-1004a9ff. For references to the various other interpretations see Leszl 1975: 241 nn. 25-7; see also chapter 3, n. 82 above.
words and phrases. The notion of \( \varepsilon \varepsilon \delta \eta \) of being is unusual and has no parallel outside this text and its immediate context (cf. 1003b33-4). It is unclear whether \( \varepsilon \varepsilon \delta \eta \) should be translated as “species” or “forms”; since the translation “species” has certain definite and problematic connotations, let us tentatively use the less interpretive “forms.” Furthermore, the cryptic phrase \( \tau \alpha \tau \varepsilon \varepsilon \delta \eta \tau \omega \nu \varepsilon \delta \delta \nu \) has two possible translations: either the one we have given or a more expansive reading like Apostle’s “... and it belongs to one specific science to investigate each \( \varepsilon \delta \delta \zeta \) of being.”

Of these issues the one that can be resolved with the most confidence is that of the intended referents of \( \varepsilon \varepsilon \delta \eta \). At 1003b33-6 Aristotle refers to sameness and likeness as \( \varepsilon \varepsilon \delta \eta \) of unity and hence of being. This in turn links 1003b19-22 to the treatment of these things in the texts that immediately follow it (1003b22-1004a1 and 1004a9-b32). We shall have a better idea of what kinds of things are \( \varepsilon \varepsilon \delta \eta \) of being after having examined these passages.

Aristotle makes his way into an investigation of the forms of being via a limited identification of being and unity. The motivation for making this identification is that many of the forms of being are strictly speaking forms of unity. “Being” and “one,” while not having the same connotation, correspond to each other just as “principle” (\( \alpha \rho \chi \eta \)) and “cause” (\( \alpha \xi \tau \iota \iota \nu \)) do (1003b22-9). If something is a being, it is also one (and vice-versa); and the \( \circ \omega \sigma \iota \alpha \) of each thing is both essentially a being and essentially one (b32-3; cf. 8.6.1045a36-b7). Hence there will be as many forms of being as there are of unity (b33-4).

The investigation of the forms of being and unity will thus belong to the same science as the science which investigates being and unity (1003b33-1004a1). In particular, the science of being will also study sameness, likeness, and equality.

Aristotle moves on to show that the science of being will also study the opposites of sameness, likeness, and equality.

Since it belongs to one science to investigate opposites [\( \alpha \nu \tau \iota \kappa \varepsilon \iota \mu \varepsilon \nu \alpha \)], and plurality is opposed [\( \alpha \nu \tau \iota \kappa \varepsilon \iota \tau \iota \alpha \)] to unity, and since it belongs to one science to

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4 Owens (1978: 275 and n. 55) and Kirwan favour the translation we adopt; in addition to Apostle, Ross (1924) marginally favours the expansive translation, as does the ROT. Kirwan believes both are possible; see his note ad loc.
5 Cf. \( \tau \alpha \tau \omicron \delta \) καὶ \( \omicron \omicron \omicron \omicron \) “and others of this sort” at 1003b36; that equality is among these others is indicated by 1004a17-20, 5.15.1021a10-14, and 10.3.1054a29-32.
6 Meta. 4.2.1004a2-9 is almost certainly out of place, but commentators differ on where it belongs. See note 3 above.
investigate also denial and privation because unity is investigated in both ways, with respect to its denial as well as to its privation . . .; it belongs to the same science to know also the opposites of the kind of unity we mentioned, for example, otherness [τὸ ἐτερὸν] and unlikeness [τὸ ἀνόμοιον] and inequality [τὸ ἄνισον] and all the others which are named either according to these or according to plurality and unity [κατὰ τοὺς ἰ ἑκατὰ πλῆθος καὶ τὸ ἐν]. (1004a9-20)

Additionally, contrariety itself is investigated by this science, being an instance of difference and hence of otherness (a20-2). These things are either named “according to” (κατά) plurality or unity or, as in the case of contrariety, are named according to something else that is in turn named according to plurality or unity (in the case of contrariety, according to difference). The sense is which something is named according to something else is made clear in Meta. 5.15:

[Equality, likeness, and sameness] are all named according to unity [κατὰ τὸ ἐν λέγεται]. For those things are called the same whose οὐσία is one, those are called “like” whose quality is one, and those are called “equal” whose quantity is one. (1021a10-12)

These things are defined in terms of unity and will thus share in its properties. It should be pointed out that Aristotle’s definitions of these things elsewhere are not in the same terms, and are not always as restrictive as they are here. For instance, in addition to the sense of sameness given here, there is also the derivative sense of accidental sameness.7

Since “unity,” like “being,” has many senses, and sameness, otherness, and so forth are ultimately reducible to unity, these too will have many senses. Nevertheless it belongs to one science to know all of them, since they are πρὸς ἐν equivocals (1004a22-5).

Now since all things are referred to that which is primary, as for example all things which are called “one” are referred to what is primarily one, we must say that the case is similar with sameness and otherness and the contraries; so that after distinguishing the various sense of each, we must give a similar account of how all the others are related to that which is primary in the case of each predicate [ἐν ἐκάστῃ κατηγορίᾳ]. . . (1004a25-30)8

7 Meta. 5.9.1017b27-1018a4. The definition of “likeness” in 5.9 (1018a15-19) appears to be compatible with those in 5.15 (1018a15-19) and in 10.3.1054b4-13, although these latter definitions are not explicitly restrictive to affections. The senses of sameness in 10.3 (1054a32-b4) all refer to various ways in which something can possess unity in substance.

8 Following Ross (1924: i.206 ad 1004a29) instead of Apostle on the translation of κατηγορίᾳ. (It is not clear what Aristotle could mean by what is primary in each “category.”) Aristotle phrases the same point
The univocity required for a science of the forms of being and unity is generated by the fact that unity and its forms are studied in their primary instances.

The προς ἔν relation between the primary and secondary instances of unity and its forms is analogous to the προς ἔν relation in the case of being.⁹ What is one in the highest degree is that thing whose ὁμοιότης is one; other unities are so-called for their relations to things that are primarily one:

Most things are called “one” in view of the fact that they act on, or are affected by, or have, or are related to, some other thing which is one, but things which are primarily called “one” are those whose ὁμοιότης is one, either by continuity, or in kind, or in formula; for we count as many either things which are not continuous, or things which are not one in kind, or things whose formula is not one.

(5.6.1016b6-11)

Similar relations hold for sameness, likeness, and equality: “since ‘one’ and ‘being’ have many meanings, all the other objects which are called according to these must also follow, so sameness and otherness and contrariety must be distinct in each category” (5.10.1018a35-8). At Meta. 5.10.1018a31-5 and 10.4.1055a35-8 Aristotle explains the προς ἔν relation for contrariety in the same terms as he does for unity. A primary instance is identified (and in this case, defined), and the derivative instances are defined in terms of the primary instance. Just as the secondary instances of being are intelligible only in relation to the substance to which they are related, the secondary instances of contrariety are intelligible as contrary only in light of the contraries that they have, produce, or are acquiring or losing.

Having introduced the forms of being and shown how they are themselves προς ἔν equivocals, Aristotle proceeds to make the connection between the forms of being and the issues raised in the fifth aporia.

It is evident, then, that it belongs to one science to discuss these things [i.e., sameness, otherness, etc.] as well as substance (this was one of the problems we listed); and so, it is the philosopher’s task to be able to investigate all of them. For if it is not the philosopher, then who will examine whether Socrates and sitting Socrates are the same, or if a given contrary has only one contrary to it, or what is

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⁹ On being as a προς ἔν equivocal see section III of chapter 3, above.
a contrary, or the various senses of the term "contrary"? And similarly with all other such questions. (1004a31-b4)

The study of these objects belongs to the science of being and more specifically, to the science of substance. More precisely, they are investigated as per se attributes (καθ’ αὐτά πάθη) of substance in its capacity as the nature and primary instance of being:

Since, then, these are the per se attributes [καθ’ αὐτά . . . πάθη] of unity qua unity and of being qua being, but not qua numbers or qua lines or qua fire, clearly it belongs to this science also to know both the whatness of these and their attributes [συμβεβηκότα]. And those who inquire into these matters err not in the sense that they do not philosophize, but in not considering οὐσία, of which they comprehend nothing, as prior. For just as there are ἰδια πάθη of number qua number (e.g., oddness and evenness, commensurability and equality, excess and deficiency), and these belong to numbers per se and in relation to one another (and likewise other ἰδια belonging to solids . . . ), so there are certain things ἰδια to being qua being, and it is the task of the philosopher to examine the truth about these. (1004b5-17)\(^{10}\)

In the first passage, Aristotle gives two examples of the sorts of question that the philosopher will ask: it is the philosopher's job to investigate whether Socrates is the same as Socrates sitting, and whether any given contrary has only one contrary. We know from the fifth aporia (995b25-7) that Aristotle considers the investigation into whether a contrary has only one contrary to be an investigation into a per se attribute, presumably an attribute of contrariety. The beginning of the second passage indicates how we should take the other example: to ask whether Socrates and sitting Socrates are the same or different is to inquire into a per se attribute of Socrates qua being and one, that is, qua substance.\(^{11}\)

The science of substance will thus be able to establish truths about two kinds of things. First, it will be able to establish that certain attributes—for instance, sameness or lack of sameness—belong to substances qua substances (1004b5-6). Second, it will know

\(^{10}\) In the context "attributes" should be read as shorthand for "per se attributes"; cf. 3.2.997a25-34.

\(^{11}\) Ross 1924: i.224 ad 995b20-7 (rejecting his distinction between πάθη and συμβεβηκότα; see note 28 below); Owens 1978\(^{3}\): 287; Reale 1980: 121; Berti 1996: 125. Kirwan (1993\(^{5}\)) is curiously silent on this issue; see pp. 78, 84 ad 1004a31. Irwin (1988: 169) and Leszl (1975: 274-5) cite 1004b5-6 but do not seem to appreciate its significance for the relation between the Meta. and the APo. Leszl takes the καθ’ αὐτά ὑπάρχοντα of being to be the "properties constitutive of what-it-is" (p. 149): this seems to ignore the role of type (2) per se for demonstrating properties that are defined are terms of, but are not parts of the definition of, their subjects. On the other hand, Leszl does raise genuine problems for Aristotle's attempt to understand the forms of being as per se attributes; see note 41 below.
the τί ἐστιν of these attributes and be able to establish that certain other attributes belong to these attributes, for instance, that each contrary has only one contrary (b6-8).\footnote{I take \(α\)ντό to refer to the πάθη of being and unity rather than to being and unity themselves, although this does not significantly affect the overall interpretation.}

Aristotle emphasizes the parallelism between this investigation and his paradigm demonstrative sciences of arithmetic and geometry: just as there are attributes that belong \(α\)ντό to number and solid, so there are \(α\)ντό attributes of being and unity in their primary instance, substance. Metaphysics studies the same objects studied by the Academic dialecticians, but as per se attributes of being qua being and unity qua unity, and hence of substance qua substance.

Aristotle distinguishes his treatment of these objects from that of dialecticians in two ways. First, the dialecticians do not recognize the priority of substance (1004b8-10). It is easy to see the significance of their failure to recognize this priority if, as we have suggested, substance is to serve as the subject genus to which these attributes are \(καθ\) \(α\)ντό and \(α\)ντό.\footnote{Leszl (1975: 275-6) and Kirwan (1993: 84) downplay the priority of substance. Irwin (1988: 171, 176) recognizes that that these things must be studied in their “connection” with substance but ignores the importance of substance’s \textit{priority} to them. Evans (1977: 11-17) recognizes that it is the absence of a specific subject matter (i.e., \(ο\)σία) that makes dialectic unscientific, but does not see the implications of the priority of \(ο\)σία.} The dialecticians were arguing merely from “reputable opinions” (ἐνδοξα, 995b23-5). If, however, there is a subject genus to which the attributes of being belong \(α\)ντό, the existence and nature of substance may serve as premises of the sort required by Aristotle’s account of demonstration in \textit{APo. 1.2} (71b19-72a7). As \textit{Topics 1.1} puts it, dialectic argues from reputable opinions, demonstration from premises that are “primary and true” (100a26-30). If substance is prior to these attributes as a subject genus, it may be possible to reach conclusions about the ways in which Socrates is the same and not the same as Socrates sitting by relying not only on reputable opinions but on the sorts of premises required in a scientific demonstration.

Aristotle goes on to draw a different contrast between metaphysics and dialectic, this time emphasizing the difference in their powers:

Dialecticians and sophists put on the same appearance as the philosopher. Sophistry only appears to be wisdom. Dialecticians discuss all things, and being is common to everything; but clearly dialectic embraces these things because they are
proper to philosophy. Sophistry and dialectic busy themselves with the same genus of things as philosophy, but philosophy differs from dialectic in the manner of its capacity, and from sophistry in the kind of life chosen. Dialectic is such as to probe [πειραστικὴ] concerning things that philosophy knows [γνωριστική], sophistry makes the appearing of knowing without knowing. (1004b17-26)\(^\text{14}\)

The distinction between philosophy and sophistry is clear enough; the philosopher aims at wisdom whereas the sophist does not. The methodological implications of the distinction between dialectic and philosophy are not as clear. It seems clear that Aristotle means to attribute to philosophy the capacity of knowing truths in a way that dialectic does not: philosophy is γνωριστική. What does Aristotle mean by calling dialectic πειραστική? On one account, Aristotle’s remark refers only to Platonic dialectic: Platonic dialectic is “peirastic” and subscientific whereas Aristotelian dialectic can be properly scientific.\(^\text{15}\) This interpretation seems unlikely. As we have seen in chapter 4, the application of the label “peirastic” to dialectic is not so much a pejorative as an indication of both the uses and the limits of dialectic in philosophy. Dialectic does have a genuine function within philosophy in the examination and refutation of alternative philosophical positions. It is possible to use dialectic to refute an opponent’s position by showing either that it is self-contradictory or that it is incompatible with what is commonly accepted as scientifically true.\(^\text{16}\) As we have seen, however, these arguments do not establish anything except in relation to the views they are criticizing; they do not have the capacity (δύναμις, 1004b24) for establishing philosophical truths.

What kind of arguments do have this capacity? Irwin suggests that with this passage Aristotle is introducing a distinction between “pure” dialectic and “strong” dialectic; the former is reliant on generally-accepted beliefs for its premises, whereas the latter operates from a more restricted, more epistemologically reliable set of premises.\(^\text{17}\) Irwin argues that it is strong dialectic that is used to establish the principle of noncontradiction in Meta. 4.4, and that this argument provides the model for metaphysical

\(^{14}\) Kirwan makes the most sense of the obscure sentence at b17-22, and my translation reflects his.


\(^{17}\) Irwin 1988: 174-5, 185-7. Neither Kirwan (1993\(^2\): 84-5) or Lesl (1975: 300-1) can account for Aristotle’s distinction between dialectic and metaphysics in terms of each science’s δύναμις.
argument in general.\textsuperscript{18} We have argued in chapter 4 that Aristotle’s arguments in \textit{Meta}. 4.4-6 cannot plausibly be construed as examples of strong dialectic. Furthermore, there is no explicit evidence anywhere in the corpus that Aristotle means to distinguish between two kinds of dialectic, one of which is subscientific and the other capable of establishing scientific truths.\textsuperscript{19} By contrast, Aristotle does contrast the epistemic reliability of dialectic and \textit{demonstration}: it is this, and not some other kind of dialectic, that is the natural candidate for the methodology with which he intends to replace that of the dialecticians.\textsuperscript{20}

Aristotle never explicitly states that the treatment of the per se attributes of being introduced in \textit{Meta}. 4.2 is to be demonstrative.\textsuperscript{21} As we have seen, however, the \textit{Metaphysics} is aware of demonstrative methodology and assumes throughout that a treatment of per se attributes will be demonstrative.\textsuperscript{22} In \textit{Meta}. 4.2 Aristotle carefully sets up this study so as to allow it to meet the requirements of a demonstrative science: there is a subject genus of being and unity and attributes in the “forms” of being and unity, all of which have univocal definitions in their primary instances. As we have seen, he goes so far as to draw an explicit parallel between this discipline and his paradigms of demonstrative disciplines in the mathematical sciences. The available evidence throughout \textit{Meta}. 4.2 thus suggests that Aristotle intends the treatment of the per se attributes of being to be a demonstrative discipline.\textsuperscript{23} We shall examine to what extent Aristotle’s practice follows this methodology later in the chapter.

Aristotle finishes \textit{Meta}. 4.2 with a brief discussion of the relation of the contraries to the science of being qua being. The principles of all things are contraries, and the

\textsuperscript{18} Ibid., 179-80. See generally section II of our Introduction.
\textsuperscript{19} As Irwin seems to recognize (1988: 470).
\textsuperscript{20} See \textit{APo}. 1.6.74b21-6 with 1.19.81b18-23.
\textsuperscript{21} Evans (1977: 16) takes the absence of any mention of demonstration in \textit{Meta}. 4.2 to indicate that “Aristotle is here implicitly rejecting the idea that it is a condition of any activity’s being scientific that it is conform to the model of demonstration.” Evans does notice both the emphasis on the priority of \textit{σωφτικός} and the parallel to mathematics (pp. 16-17).
\textsuperscript{22} An electronic search of the \textit{TLG} yields a total of 69 instances for \textit{ἀποδείκτικος} and \textit{ἀποδείκτικος}. The most relevant of these occur at 992b30-3, 996b19-20 (cf. \textit{APo}. 2.9.93b25-8), 996b26-9, 997a3-11, a17-22, a30-3, 1006a5-11, 1013a16, 1014a35-b3, 1025b7-13, 1039b31-1040a5, 1077b20-2, 1086b34, and 1087a23. (I omit parallel passages in book 11.)
\textsuperscript{23} This implication is recognized by the Greek commentators: Alexander assumes a demonstrative methodology in commenting on 4.1.1003a21-2 (\textit{in Meta}. 239.6-9), 4.2.1004b1-8 (258.8-10), and 4.2.1004b17-26 (260.2-5, cf. 25-6). Cf. also Syrianus \textit{in Meta}. 63.6-8, 24-6; Asclepius \textit{in Meta}. 246.6-9.
principles of the contraries are unity and plurality (1004b27-1005a5). Hence, since the science of being qua being is also the science of unity, this science will also be the science of the contraries (1005a2-5). The passage seems to be developed mainly out of the Platonic and pre-Socratic background.\(^{24}\) Aristotle's emphasis on the contraries as principles is somewhat worrying, since in a few places Aristotle seems to be on the verge of suggesting that the contraries are principles even of (and thus are prior to) \(\omega\sigma\iota\alpha\).\(^{25}\) At one point Aristotle attributes the view that all being and \(\omega\sigma\iota\alpha\) are composed of contraries to "nearly all thinkers" (1004b28-9); at another point Aristotle himself writes that "all things" are either contraries or composed of contraries (\(\varepsilon\varepsilon\nu\alpha\nu\tau\iota\omega\nu\), 1005a3-4). Aristotle is clearly concerned to express the continuity of his science of being qua being with the investigations of his predecessors, which may account for the appearance of being willing to reduce even substance to the contraries.\(^{26}\) His indication that being and one are probably not \(\kappa\alpha\theta\varepsilon\) (1005a5-11), however, suggests that here too Aristotle ultimately intends a \(\pi\rho\varsigma\varepsilon\nu\) reduction of the basic contraries (being and not-being, unity and plurality) to substance.\(^{27}\) Being and not-being are not treated as equals, nor are they principles of \(\omega\sigma\iota\alpha\): in the \(\pi\rho\varsigma\varepsilon\nu\) reduction being in its primary instance simply is \(\omega\sigma\iota\alpha\), and not-being is nothing more than a privation of \(\omega\sigma\iota\alpha\), called a "being" only derivatively and, it seems, in the weakest possible sense (4.2.1003b10). Aristotle's tone in making this reduction is rather tentative, which suggests that this treatment may be earlier than the more definite statements that introduce the chapter (1003a33-b19). The gist of this passage does not contradict the rest of the chapter, however.

\(^{24}\) Cf. Aristotle's explicit references at 1004b31-3. The doctrine that unity and plurality are the principles of motion and rest (b28-9) is also not strictly Aristotelian. Merlan (1960\(^2\): 164) emphasizes the similarity of this passage and Aristotle's descriptions of the views of the Pythagoreans (\textit{Meta}. 1.5.986a15-b8).

\(^{25}\) This apparent contradiction has led some commentators to think that this passage, or even the whole of \textit{Meta}. 4.2, represents an earlier stage of Aristotle's thought incompatible with the conception of metaphysics as a study of primary \(\omega\sigma\iota\alpha\). See, e.g., Elders 1962: 174-5; Merlan 1960\(^3\): 163-72. These accounts are criticized by Leszl (1975: 282-93), who however also rejects our reduction of these contraries to \(\omega\sigma\iota\alpha\).

\(^{26}\) Apostle (1969: commentary 38 \textit{ad loc.}) suggests that this passage is dialectical. Likewise, Kirwan (1993\(^2\): 85) suggests that the argument is \textit{ad hominem} against his predecessors. It is clear from \textit{Phys}. 1.7-9 that motion requires not only contraries but also a \(\omega\sigma\iota\alpha\) that is not itself a contrary; see also \textit{Meta}. 12.10.1075a28-34 which explicitly denies that the contraries are the principles of all things.

\(^{27}\) Cf. Owens 1978\(^3\): 278. Aristotle actually leaves open two possibilities, either a \(\pi\rho\varsigma\varepsilon\nu\) relation or a relation by succession (\(\tau\delta\ \varepsilon\varphi\varepsilon\xi\varsigma\varsigma\)). Cf. also Aristotle's reduction of the contraries to substance at \textit{Meta}. 12.7.1072a30-2.
The chapter concludes with an unqualifiedly affirmative answer to the fifth aporia. The science of being is a science both of substance and its per se attributes.

It is clear, then, that it belongs to one science to investigate being qua being and whatever belongs to it qua being, and that the same science investigates not only substances, but also whatever belongs to substances \([οὐ \ μόνον τῶν \ οὐσίων \ ἀλλὰ καὶ τῶν \ ύπαρχόντων]\), both the [attributes] mentioned and also priority and posteriority, genus and species, whole and part, and the others of this sort.\(^{28}\)

The introduction of priority, posteriority, and so forth in addition to the topics already mentioned is unexpected, though Aristotle has already mentioned priority and posteriority "and all other such" in the first exposition of the fifth aporia in Meta 3.1 (995b22-3). Although it is \textit{prima facie} plausible that such things are also considered per se attributes of being qua being, it is impossible to determine this just from Aristotle's text.\(^{29}\)

III

Having examined the progression of the argument in Meta 4.2, it is now possible to clarify some details in light of our exposition of the argument as a whole. Let us return to the difficult passage at the beginning of text.

For each genus of things there is both one power of sensation and one science; grammar, for instance, which is one science, investigates all spoken sounds \(\tauὰς \ φωνὰς\). Accordingly, it belongs to one generic science to investigate all the forms \(\epsilonἰδη\) of being, and the forms of the forms. (1003b19-22)

One of the issues raised by the text was the translation of \(\epsilonἰδη \ τοῦ \ \ οὐντος\). Many translators render this as "species" of being. Given Aristotle's ultimate identification of the \(\epsilonἰδη\) with per se \textit{attributes} of being and unity, it seems clear that these cannot be "species" in any traditional Aristotelian sense. This suggests that Owens and Kirwan are right to

\(^{28}\) \textit{Meta}. 4.2. 1005b13-18. Ross (1924: i.224) maintains that the \(\kappaαθ' \ αὐτὰ \ ύπάρχοντα\) and \(καθ' \ αὐτὸ \ πάθη\) of being are to be distinguished from the \(καθ' \ αὐτὰ \ συμβεβηκότα\) mentioned in the fifth aporia. I see no basis for this distinction: Aristotle uses \(\υπάρχοντα, \ πάθη\) and \(\sigmaυμβεβηκότα\) interchangeably in the \textit{APo}. (75b1 and 76b13) and does not alert us to any change of meaning in the \textit{Meta}. Moreover, the tone of 1005b13-18 suggests an unreservedly affirmative answer to the aporia; the passage would be seriously misleading if the solution to the aporia depended on a distinction between a distinction among these terms.

\(^{29}\) With the exception of "species" these all receive discussion in \textit{Meta}. 5. The form as the basis for speciation receives extended treatment in \textit{Meta}. 7.
translate εἶδη as "forms" rather than as "species." For the same reason, it seems best to follow Owens and Kirwan on their reading of τὰ τε εἶδη τῶν εἰδῶν, rather than the expansive reading that attributes to Aristotle the view that being and metaphysics have species. Our reading is also supported by several features of the text itself. The analogy to grammar is meant to emphasize that there is one science of all letters; to suggest that Aristotle means to introduce a multiplicity of sciences contradicts the point of the analogy. Furthermore, the expansive reading requires that both metaphysics and its species study the "species" of being: in Apostle's translation, "it belongs to one generic science to investigate all the kinds of being, and it belongs to one specific science to investigate each kind." It is not clear, however, what the distinction should be between the generic science that investigates the "kinds" and the specific sciences that also investigate the "kinds." The phrase is thus better read as referring to things such as contrariety, which are defined not directly in terms of being and unity but rather in terms of something itself defined in terms of being and unity, in this case difference.

Why would Aristotle introduce the per se attributes as "forms" of being and unity? Owens and Berti see a reference to the Forms discussed in Plato's Parmenides and Sophist. Although this is dependent on controversial interpretations of these dialogues, these scholars must be right in seeing some sort of reference to Platonic dialectic. As we have seen, the fifth aporia is introduced in Meta. 3.1 as raising two different questions: Does the science of substance also study the per se attributes of substance? and, Does the science of substance study certain topics now addressed by the dialecticians using arguments from ἐνδοξα? The objects of investigation introduced in Meta. 4.2 are not new: they are already objects for dialectical study in the Academy. The Analytics makes it clear that Aristotle believes that no merely dialectical treatment of these issues can be

30 See note 4 above. The Greek text from "Accordingly..." is: διὸ καὶ τοῦ ὑμνοῦ ἢ ὑμνὸν ὑμνὸν εἶδη θεωρήσαι μιᾶς ἐστίν ἐπιστήμης τῷ γένει, τὰ τε εἰδὴ τῶν εἰδῶν.

31 For these arguments cf. also Mansion 1958: 185-9.

32 See p. 137 above.

33 Owens 1978: 275-7 and notes, Berti 1996: 124-8; cf. de Strycker 1979: 53-7. This would explain the absence of any other Aristotelian uses of the phrase εἰδὴ τοῦ ὑμνοῦ.

Notice that of the five μεγίστα γένη in the Sophist (254b ff.) motion and rest are excluded from Aristotle's list of the "forms," presumably because they are objects of physics. At 4.2.1004b28-9 motion and rest are understood in terms of plurality and unity, though it is clear from Phys. 3.1-3 that even if relevant, unity and plurality are not sufficient to explain motion.
scientific. Aristotle's position against the dialecticians is greatly strengthened if he can show that a treatment of these traditional topics is possible using his methodology. If this is possible, they must themselves be subjects with demonstrable attributes or demonstrable attributes of some other subject. Aristotle makes them directly or indirectly attributes of substance as the primary instance of being, and thereby underlines the priority of substance in his metaphysics.

Aristotle's treatment of the attributes of being in *Meta. 4.2* allows us to fill in some details that are missing from *APo. 1.4*. In the *APo.*, Aristotle mentions statements predicing oddness and evenness of numbers among his examples of type (2) καθ' αὐτῷ predications (73a39). These are among Aristotle's examples of the ἵδια πάθη of number at 1004b11, a fact that tends to confirm our view that objects that have type (2) καθ' αὐτῷ relations to their subjects are among the attributes that are demonstrated to belong to that subject. Furthermore, as various commentators have pointed out, it is not clear what Aristotle means in *APo. 1.4* when he says that the contraries oddness and evenness belong to number. In *Meta. 4.2*, however, Aristotle presents us with an example of a demonstrable truth involving contraries: the metaphysician will ask whether a man (i.e., Socrates, in Aristotle's example) is the same as a man sitting (1004b1-3)—more generally, whether a substance is the same as a substance with a given accident. What we should expect as an answer to this, is a demonstration showing that, given what substances, attributes, and sameness are, they are the same in one sense and not the same in another. In other words, the demonstrations are not intended to show just, for instance, that oddness and evenness belong to number or that sameness and difference belong to substance: as Barnes points out in his discussion of this problem, this procedure would seem to generate such "obvious falsehoods" as "all numbers are even" and "all numbers are odd." Rather, demonstration is intended to show, for instance, that numbers are odd under certain circumstances and even under others, and likewise that certain kinds of

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34 See note 20 above.
35 Cf. *APo. 1.6.74b5-12*, and our discussion in chapter 1, pp. 27-8 above.
36 Barnes 1994: 113-4; Ferejohn 1991: 101-6. Recall that type (2) *per se* predications characteristically involve contraries (*APo. 1.4.73b19*, *1.6.74b9-10*).
37 That is, they will be the same accidentally but not essentially; cf. *Meta. 5.9*. On the demonstration of *per se* attributes cf. also Apostle's commentary 2 on *APo. 1.6* (1981: 108).
sameness obtain between a substance and its accidents and other kinds not. It is strictly speaking conclusions such as these, rather than oddness and evenness or sameness and difference themselves, that are the per se attributes (respectively) of number and unity. Demonstrations involving the contraries are more subtle and flexible than APo. 1.4-6 tends to suggest.

One may nevertheless raise a serious doubt about the compatibility of the investigation envisaged in Meta. 4.2 with the model presented in the Posterior Analytics. In 1003b19-1004a2, Aristotle moves smoothly from a science of the forms of being to that of the forms of unity, and seems to think that all the contraries can somehow be reduced to unity as a principle (1003b36-1004a2). Thus, according to 1004a9-22, the science of being qua being will also study the contraries of unity and its forms, i.e., plurality, otherness, difference, and inequality. These are presumably related to unity and its forms as privations (b27; cf. 10.4.1055a33-5). One would therefore expect unity, its forms, and their privations to be studied as contrary attributes belonging to a subject genus different from them, just as oddness and evenness are attributes of number qua number (cf. 1004b1-12) and male and female are attributes of animals (cf. 7.5.1030b21-3).

When these are considered as per se attributes, however, it turns out that the subject genus is not something different from the contraries but rather the primary instance of being and unity. Thus the privation of unity, for instance, will not be something that can belong to a substance (as oddness and evenness can equally belong to number even if one is the privation of the other), but rather somehow entails the privation of substance. Otherwise put, to say that something is a plurality is to deny that it is a substance, if to be a unity is in the primary instance to be a substance.

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38 McKirahan (1992: 89-90) criticizes the view that per se attributes must be contraries. Aristotle's examples here at least make his view more intelligible, especially if one also allows intermediates, which consist of contraries (Meta. 10.7), among the per se attributes.

39 We might have a much clearer account of this reduction if the ἐκλογή τῶν ἐναντίων mentioned at 1004a2 (cf. 1054a30) were extant.

40 It is interesting that not-being does not appear as one of the contraries here, though it does appear at 1004b28.

41 Leszl (1975: 275, 312-3) points out another difficulty: it is difficult to take the definition of sameness in terms of unity as a definition of a per se attribute. The definition has rather the appearance of an analysis of sameness into its genus (oneness) and differentia (i.e., substantial oneness). In the absence of the other evidence we have presented, this would tend to support "species" as a translation of έσοδη at 1003b21.
At least in sensible substances, the problem does not arise for all the forms of unity; for instance, similarity and equality refer to the qualitative and quantitative accidents of substance, as opposed to substance itself, so that one can attribute inequality to two substances without imputing a lack of substantiality to either. On the other hand, if we were correct to suggest in chapter 3 that substance is not a genus but rather a προς ἐν equivocal with its primary instance in immaterial substance, it seems none of the privative contraries will belong to the nature of substance. Immaterial substance is wholly a unity and in no way a plurality: Aristotle's god is not only one but simple (ἀπλη, 12.7.1072a32, cf. 12.9.1075a3-10). Thus it should in no way possess plurality or the contraries that are defined in terms of plurality. By contrast, one would expect the subject to which contraries are ἵ αὐτό to be able to receive both contraries.

This does not necessarily undermine immaterial substance's claim to be the nature of substance. As we have seen, the privative contrary of an attribute of substance seems to be a privation not only of the positive contrary (as cold is of heat) but also, it seems, a privation of substance. If this is so, we should not expect the nature of ὤσία to be able to receive both contraries; the ability to be subject to these privations, on the contrary, seems to indicate that the thing that is subject to them is not the nature of ὤσία. This line of thought is also suggested by a rather cryptic passage in Meta. 12.7:

Now the intellect is moved by the intelligible, and one of the two columns of opposites is intelligible per se [νοητὴ δὲ ἡ ἑτέρα συστοιχία καθ' αὐτὴν]; and in this [column], substances are primary, and of substances, that which is simple and in actuality is primary.43

There are two columns of opposites, only one of which is intelligible per se. Substance, unity, being and so forth are in the column that is intelligible per se, and of these substance is primary, particularly that which is simple and in actuality (i.e., in this context, immaterial substance).44 The contraries of these are intelligible as privations of them.45

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42 Thus it is also one in a different sense than sensible substance is one: immaterial substances are unqualified unities, whereas sensible substances a unified pluralities. See section VI of chapter 8, below.
43 1072a30-2, with modifications to Apostle (cf. ROT).
44 Cf. Meta. 10.3.1054a29-32.
45 Cf. DA 3.6.430b21-3.
This may seem to conflict with Aristotle’s own statements that unity is made known through its contrary, i.e., the indivisible through the divisible (10.3.1054a26-7). The logical priority of plurality to unity, however, seems to be entirely from the point of view of sensation: divisibility is prior because it “is more sensible than the indivisible, so that plurality is prior in λόγος to the indivisible because of sensation” (a27-9). Strictly from the point of view of intellection, unity is prior: “if . . . there is among causes a thing in which there can be no contrary, then [this thing] knows itself and exists in actuality and is separate” (DA 3.6.430b24-6). The mind that knows itself as a simple unity will not arrive at this knowledge through sensation, and hence will know this unity without any appeal to plurality. The implication is that our understanding of unity, necessarily having been arrived at through sensation, is not how unity is to be understood by nature. In the order of priority in λόγος according to nature, so to speak, unity is prior to plurality.

If the privative attributes of being qua being are to be understood as privations of substance, intelligible only terms of the positive attributes, then they do not present obstacles to locating the nature of substance in immaterial substance. On the other hand, it does become all the more difficult to see how the treatment of the attributes of substance can follow the model of the Posterior Analytics. These obstacles may not be insuperable, but there is no evidence in Meta. 4.2 that Aristotle is aware of these problems. More generally, there is little evidence that Aristotle has thought through the relation between substance in general and immaterial substance in particular anywhere in Meta. 4.1-2. Although we shall argue that these chapters are meant to be part of the same project as the investigation described in Meta. 6.1, each text largely ignores the problem of its compatibility with the other.47

46 Aristotle’s account of priority and posteriority in Meta. 5.11 does not seem to account for this eventuality: something is either prior in sensation or prior in λόγος, but not prior in λόγος due to sensation (1018b31-4).
47 On the relation between Meta. 4.1-2 and Meta. 6.1 see chapter 6, pp. 154-7, and chapter 7, pp. 219-25.
Our last task in this chapter is to attempt to determine to what extent Aristotle follows the methodology he advocates in *Meta. 4.2* in his substantive treatments of the topics he introduces there. Aristotle's sustained treatment of unity and its attributes is found in book 10 of the *Metaphysics*.\(^4^8\) There is at least one proof that appears to be explicitly presented so as conform substantially to the model of demonstration in the *APo.*, Aristotle’s argument in *Meta. 10.4* that each contrary has only one contrary. Aristotle begins *Meta. 10.4* with a statement of the δτι and τι ἐστι of contrariety:

Since things which differ from one another may do so to a greater or less degree, there exists also a greatest difference, and this I call “contrariety.” That contrariety is the greatest difference is clear by induction [ἐκ τῆς ἐπαγωγῆς]. (1055a3-6)\(^4^9\)

Aristotle goes on to show this by appeal to the extremes from which generations take place. From his discussion he also concludes that contrariety is “complete difference” (1055a16). Aristotle establishes both the existence and definition of a subject genus, making use of the *APo.* methodology of induction to establish the definition.\(^5^0\) Having set down the ει ἐστι and τι ἐστι of the subject genus, Aristotle goes on to prove a fact (δτι) that is true of it:

This being so, it is evident that each contrary cannot have more than one contrary; for (1) neither can there be anything more extreme than the extreme, nor can there be more than two extremes for one interval. And (2) in general, if contrariety is a difference, and difference is between two things, then complete difference will also be between two things. (1055a19-23)

The two proofs are rather loosely stated. Both, however, start from an element of the definition of a contrary to establish a conclusion about it. Moreover, the definition is the cause of the fact that is proved to hold of it. The fact that there can be only one contrary to a contrary seems to follow from the definitions of “extreme” (which carries the

\(^4^8\) *Meta. 5* also contains a number of relevant definitions.

\(^4^9\) With the ROT I take δτι δ᾿ ἡ μεγίστη ἐστι διαφορὰ to mean “that <contrariety> is the greatest difference” rather than “that there is a greatest difference” (Apostle).

\(^5^0\) Cf. *APo.* 1.10.76a31-6, b3-22; and our discussions in chapter 1, pp. 30-2, and later in this chapter, pp. 151-2 below.
implication of superlativeness and thus singularity) and "difference" (which carries the implication of duality rather than plurality).

This is the only argument in Meta. 10 that appears to have been set up explicitly as a demonstration: perhaps the reason is that Aristotle used this particular proof as the paradigm of the kind of demonstration that it is metaphysics' business to provide.52 Presumably an extensive treatment of theorems about unity, plurality, and so forth would attempt to prove other properties of them in the same way. Another possible example, the argument in Meta. 10.7 that intermediates are composed of contraries, would require a significant amount of reworking to be expressed formally as a demonstration.53 Nevertheless, the treatment is not dialectical: the starting points for the proofs are definitions and principles relevant to the subject genus, and do not depend on ἐνδοξα or the agreement of an interlocutor.54 In this respect Aristotle's proof that each contrary has only one contrary may usefully be contrasted with Plato's dialectical treatment of the same issue in the Protagoras (332a ff.). Furthermore, much of book 10 is concerned with establishing the definitions and hypotheses that are preconditions for demonstration.55 In order to prove that the per se attributes belong to their subjects the philosopher must know their τι ἐστι (cf. 1004b7). Thus Meta. 10.2 defines unity and 10.3-4 those things that are defined in terms of unity. Chapter 8 defines difference in species.

How does Aristotle arrive at these definitions? The definition of contrariety appears to be reached by induction (ἐπαγωγή), which is the APo. method for reaching first principles.56 Induction is mentioned explicitly several times in connection with first principles: at 1054b33 (contrariety is a kind of difference), 1055b17 (every privation is a

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51 The καθ' αὐτό relations seem to be type (1) rather than type (2): the conclusion is wholly implicit in the definition of contrariety.
52 It is his example both at 3.1.995b25-7 (explicitly as a καθ' αὐτό συμβεβηκός) and 4.2.1004b3.
53 So also chapter 5 on the relation between being greater than, being less than, and being equal. The APo. does allow for less strict senses of demonstration than the propter quid, e.g., the demonstration through the ἐν (APo. 1.13), the negative demonstration (1.25) and the demonstration through impossibility (1.26).
54 See section I of chapter 4, above.
55 Cf. APo. 1.2.72a14-24, 1.10.76a37-b22. This "preparatory work" for demonstration (Ross 1924: i.252) is a genuine part of the science, as the second book of the APo. (esp. chapters 13-19) show.
56 On the use of induction to establish definitions and principles see Aristotle's discussions of induction and intuition (νοης) in APo. 2.19. Intuition (νοης) is never mentioned in the Metaphysics, although this does not mean that Aristotle no longer accepts the doctrine of νοης; see chapter 4, pp. 119-21 above.
contrary), and 1058a9 (the differentia is a contrast). One also finds several examples of division (APo. 2.13-14): thus opposition (τὰ ἀντικείμενα) is divided into contradiction, privation, contrariety, and relatives (Meta. 10.4.1055a38-b1); and otherness is divided into otherness in species and otherness in genus (10.8). Aristotle never explicitly indicates how the definitions and other principles relevant to the subject matter of book 10 are reached; nor does he say anything about the role of νοητός. Often the discussions leading up to his definitions seem rather peremptory. The task of showing that these definitions are in fact correct, perhaps from a wider-ranging induction using a greater number of examples, may be assigned to oral discussion rather than the written λόγοι on which discussion might be based.

Aristotle’s procedure for establishing definitions tends to confirm our fourth chapter’s conclusion that dialectic is not meant to establish principles of this sort. There are no straightforwardly dialectical arguments in Meta. 10: nothing depends on an appeal to the opinion of an interlocutor or of one of Aristotle’s predecessors, nor does Aristotle seek to refute any position dialectically. Nevertheless, whatever the role of dialectic in establishing these definitions, the definitions that it may be thought to establish are principles in a science already granted to be demonstrative in its methodology for proceeding from these principles to prove per se attributes. We have seen that there are reasons to think that part of metaphysics is demonstrative, whether or not dialectic is used to reach the principles of these demonstrations.

IV

We have seen, then, that at least part of Aristotle’s Metaphysics seems to be modeled after the account of demonstrative science in the Posterior Analytics. Aristotle’s procedure is to take unity, sameness, contrariety, and the like—already the objects of dialectical study in the Academy—and treat them as per se attributes of being qua being. One of the implications of this is that while metaphysics is rightly called a science of

57 Cf. also Meta. 9.6.1048a36: actuality is known by analogy and induction.
58 As Frede points out in 1987: 93-5.
principles, it is not *exclusively* a science of principles.\textsuperscript{59} What gives unity to the science of being is not the fact that it is a science of principles rather than a demonstrative science of attributes, but rather the nature to which these principles and attributes belong καθ' αὑτό and Ἰὑτό. The transformation of the “forms of being” into per se attributes is by no means a smooth one. Nevertheless certain important *APo.* themes remain firmly in place. The forms are defined in terms of and thus posterior to a subject, i.e., substance as the primary instance of being. They can be studied only as modifications belonging essentially to ὀὐσία, not as though they had being independently of ὀὐσία. Furthermore, their treatment is not dialectical: it attempts to start from principles proper to the subject matter, in particular the definitions of the various forms. The *APo.* influence on this part of the *Metaphysics* seems to lie in these two features rather than in strict conformity to the *APo.* model of demonstration.

\textsuperscript{59} Irwin (1988: 172-3) appeals to Aristotle's characterization of the science of being as a science of principles to argue for its nondemonstrative character.
Chapter 6

The Principles of Being qua Being

In our last two chapters, we examined Aristotle’s accounts of two of the tasks he assigns to metaphysics: the study of the per se attributes of being and that of the common axioms. The remainder of the thesis, like most of the remainder of the *Metaphysics*, is devoted to the last of the tasks that Aristotle assigns to metaphysics, the study of the principles and causes of being qua being. Just as Aristotle devotes methodological chapters to the attributes and axioms in *Meta*. 4.2-3, he outlines the investigation he proposes for the principles in *Meta*. 6.1.

In *Meta*. 4.1-3, as we have seen, Aristotle develops a science of being using a model familiar from the *Posterior Analytics*. Aristotle identifies a nature, namely, being, and posits a science of that nature. In *Meta*. 4.2 Aristotle indicates that being must be a πρὸς ἐν equivocal, with a primary instance in οὐσία. The science of being qua being, then, will in the first instance be a science of substance qua substance; and the principles sought in the science will be the principles of substantiality. These chapters of book 4 do not, however, provide a very clear characterization of substantiality as a phenomenon to be explained. Unlike such phenomena as motion and triangularity, it is not clear what substances have in common that make them substances, still less why this common feature should be the object of causal investigation. Faced with such difficulties, more than one interpreter has concluded that the inquiry into the principles and causes of being and substance cannot be an inquiry into the causes of a specific phenomenon but must rather be something else, for instance, a second-order inquiry into the nature of causality.¹

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¹ So Leszl 1975: 124, 224; Irwin 1988: 541 n. 23. See section II of our Introduction, and chapter 2, p. 59 above. It is difficult to reconcile this with Aristotle’s statement in *Meta* 4.1 that metaphysics seeks the per se causes of a certain nature: the point is not that metaphysics studies the nature of causes or of causality in general but rather that it seeks the causes of a specific nature in things, i.e., being.

2 On the evidence in *Meta*. 4.1-3 that suggests that it is the latter conception that is correct see chapter 3, pp. 91-4 above.
Aristotle begins Meta. 6.1 with the statement that he is seeking the principles and causes of beings, qua beings (1025b3-4). He has already introduced a science of the causes of being qua being in Meta. 4.1: the search for the principles and the highest causes is a search for the principles and causes that belong καθ' αὐτὸ καὶ ἕνα to being (1003a26-32). In Meta. 4.2, however, Aristotle is principally concerned with the πρὸς ἐν reduction of being to substance and the investigation of the per se attributes of being as attributes of substance. Aristotle's concern with causes of being is limited to the statement that, since substance is the primary instance of being, the inquiry into the principles and causes of being will be an inquiry into the principles and causes of substance (4.2.1003b17-19). From 1003b19 on, Meta. 4.2 focuses exclusively on the per se attributes of being.

With respect to the principles and causes of being, Meta. 6.1 picks up where 4.1-2 leaves off. Every investigation involving διάνοια to any extent is concerned with principles of some sort (1025b4-7). The science of being qua being differs from other such investigations in three important respects:

[1] All [the other sciences], marking off some being or some genus, conduct their investigations into this part of being, although not into being ἀπλῶς nor into their part of being qua being, and [2] they do not give an account [λόγον] of τί ἐστι; but starting from the τί ἐστι, which in some sciences is made clear by sensation but in others is laid down by hypothesis, they thus proceed to demonstrate more or less rigorously the per se attributes [καθ' αὐτὰ ὑπάρχοντα] of their genus. Consequently, it is evident that there is no demonstration of οὐσία or of τί ἐστι from such induction but that these are made known in some other way. Similarly, [3] they say nothing as to the existence or nonexistence of the genus they investigate, and this is because it belongs to the same power of thought to make known both τί ἐστι and εἴ ἐστι. (1025b7-18)

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3 See chapter 3, p. 77 above.
4 Thus while Meta. 4.1-2 and 6.1 are both expositions of the science of being qua being, they are not simply two different and incompatible approaches to the same material. Meta. 4.1 serves as a general introduction, Meta. 4.2 effects the reduction of being to substance and goes on to introduce the science of the attributes of being, and Meta. 6.1 introduces the investigation of the principles and causes of being. This is not necessarily to say that they are the products of exactly the same thinking or that their contents are wholly consistent with one another. But both texts are necessary for a complete introduction to the tasks that Aristotle assigns to the science of being in Meta. 4.1.
5 Trans. Apostle with modifications. In particular, I follow Ross (1924: i.352) in taking ἐκ τοιαύτης τῆς ἐπιγονηγῆς with οὐκ ἐστιν... τί ἐστιν rather than with δὴλον. See note 15 below. Also, Apostle's "say
This passage is difficult and presents a number of problems. Let us work our way through them one by one.

Aristotle’s first criterion for distinguishing the science of being from other sciences is straightforward and recalls points already made in *Meta.* 4.1: no other science investigates its objects qua being, but each “cuts off” some part of being and “investigates the attributes of that part” (1003a24-5). In *Meta.* 6.1 Aristotle emphasizes both the negative and positive analogies between the science of being and the special sciences. Like the special sciences, metaphysics investigates the causes of some subject-matter. Unlike that of the special sciences, the subject matter of metaphysics belongs πρὸς ἐν to all beings.

An *Analytics*-style science, we have argued, assumes the τί ἐστι of the subject and attributes, and the εἰ ἐστι of the subject, in order to demonstrate the ὅτι of the καθ’ αὐτὰ ὑπάρχουντα. Aristote’s second and third distinguishing marks imply that the science of the principles and causes of being is to be distinguished from the special sciences precisely in undertaking the scientific explanation of things that must be assumed as principles by the special sciences. The special sciences do not explain τί ἐστι: rather, they arrive at it either by hypothesis or by induction from sensation, and use it as a principle for demonstrating καθ’ αὐτὰ ὑπάρχουντα (1025b10-13). Likewise, they do not show the εἰ ἐστι of the genus they are investigating (b16-18). The implication is that the science of the causes of being will have the task of explaining both τί ἐστι and the εἰ ἐστι of subjects. Since the only entities that are unqualifiedly subjects are substances, this implies that the

nothing about τί ἐστι" is too strong as a translation of τοῦ τί ἐστιν οὐθένα λόγον ποιοῦντα: the next clause indicates that the special sciences do have the task of arriving at τί ἐστι from sensation or hypothesis. See note 7 below.

6 See *APo.* 1.7.75a39-b2, 1.10.76b2-22 (cf. 1.1.71a11-17), discussed in chapter 1, pp. 30-2 above.

7 I take this to be the force of τοῦ τί ἐστιν οὐθένα λόγον ποιοῦντα. Part of the investigative procedure of every special science is the establishment of definitions to serve as principles for demonstrations. As Aristotle emphasizes in *APo.* 2.3-10, however, this procedure is not itself demonstrative and so does not give an explanatory proof of each thing’s definition from prior principles. Rather, the special sciences either hypothesize the definitions or start from sensation (1025b11-12). I take Aristotle’s reference to sensation to refer to its capacity as the starting point for ἐπαγωγή: induction starting in sensation is the method for arriving at principles using a power that is not "more honourable in accuracy" (*APo.* 2.19.99b32-4).
science of being will explain the being of substances. This recalls the point made more briefly in *Meta.* 4.2: the science of being qua being will study the principles and causes of substance (1003b17-19).

This account of the objects of metaphysics calls for clarification on several counts. One of the implications of the foregoing is that the explanation of the being of attributes does not belong to the science of being. This is a subtle point. We argued in chapter 5 that there do exist attributes that are κοσμεῖνα to being and unity, and that the demonstration of these attributes does belong to the science of being. If so, Aristotle cannot mean to say that the science of being is in no way a science of attributes. His point would rather be that the mere fact that an attribute exists—i.e., belongs to a subject—does not require explanation in the science of being. In other words, the science of being and unity investigates the attributes of being and unity because they are κοσμεῖνα to these natures, not because the being of attributes qua attributes requires metaphysical explanation. The ἐστι of attributes is adequately explained in the sciences of their genera: there is no additional science devoted to the explanation of attributes qua attributes. By contrast, whatever the sciences of particular kinds of substance may have to say about genera and species of substance, there is a science that explains the ἐστι of all substances precisely insofar as they are substances.

Also fraught with difficulty is Aristotle's statement that the special sciences do not give an account of τι ἐστι. Used as technical terminology, τι ἐστι is equivocal. It may refer either (1) to an object of definition or (2) to the first category (i.e., substance) as

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8 The subject genus studied in a particular science is not necessarily itself a substance: this is true, for instance in mathematics. But the subjects investigated in mathematics are strictly speaking abstractable accidents of substances; *Meta.* 13.3.1077b34-1078a9. It seems that not all subjects for attributes will be objects of metaphysics, if they are not unqualifiedly subjects but subjects only from the point of view of a specific science. Nevertheless, the only entities that are unqualifiedly subjects rather than attributes are substances.

9 *Meta.* 6.1.1025b12-13. This appears to be a direct consequence of the πρὸς ἐν conception of being: if the attributes are called being by πρὸς ἐν equivocity without actually sharing in the nature of being, then to explain the being of an attribute is simply to explain why it belongs to its subject, and this is the business of the science of that subject. Only the being of the ultimate subject, i.e., the being of ὁσιά, requires explanation in metaphysics: *Meta.* 4.2.1003b16-19. Insofar as attributes depend on substances for their being, a science of the principles of substance—Aristotle implies—will also indirectly study the principles and causes of attributes (*Meta.* 12.5.1071a34-5).
distinct from the nonsubstantial categories. In the former case, Aristotle’s indication that metaphysics studies τι ἔστι, is not in itself a statement that metaphysics studies substances rather than attributes. In the latter case, the mention of τι ἔστι will indicate that Aristotle is specifically contrasting a study of substance with a study of its attributes. Our account of the second distinguishing mark has assumed the first interpretation.

The weight of the evidence is in favour of this interpretation for several reasons. First, we saw in chapter 3 that metaphysics is not the only science that is in some way a study of substances: the study of sensible substance is in a significant way the business of physics. It does not seem to be the case that metaphysics studies giraffes, whereas some special science such as zoology studies the attributes of giraffes. It is insufficient, then, to distinguish metaphysics from the special sciences simply by indicating that it studies entities in the first category. Second, we have argued that in Meta. 4.2 Aristotle indicates that it belongs to metaphysics to study both substance and its attributes qua being (1005a13-18). The distinction between metaphysics and the other sciences thus lies not in the subject-attribute distinction but rather in the level of universality at which the science studies both subjects and attributes. That is, it will study the causes and attributes that are ἐαυτό to being and substance. Finally, Meta. 6.1 implies that metaphysics will study principles assumed by the special sciences. The Posterior Analytics suggests that the special sciences assume the τι ἔστι not only of their subjects but also of their attributes. Thus, τι ἔστι in this context should not refer specifically to substance as opposed to its attributes. In referring to the εἰ ἔστι of the subject genus, the third distinguishing mark

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10 For the first use see APo. 2.3.90b30-3; for the second use see, e.g., Meta. 7.1.1028a10-13. The two characteristics come together to the highest extent in primary οὐσία and τι ἔστι.

11 So Ross (1924: 351), and by implication Kirwan (1993: 183). Apostie goes as far as to translate “... starting from the whiteness of their subject...”; which although a reasonable interpretation is not exactly what Aristotle writes. This interpretation seems to receive further support from Aristotle’s use of οὐσίας ὀδὴ τοῦ τι ἔστιν at 1025b14; we shall consider this passage shortly.

12 See chapter 3, pp. 76, 90-7 above; also chapter 7 below. The relevant texts in the Meta. are 6.1.1025b18-28, 7.11.1037a13-17.

13 Kirwan (1993: 183), for instance, takes this passage to indicate that it is the business of the metaphysician rather than the zoologist to define animals, but rightly finds this statement puzzling. Neither Ross nor Aristotle comments on this statement at any length.

14 See chapter 1, pp. 30-2 above.

15 Aristotle’s remark that οὐκ ἔστιν ἀπόδειξις οὐσίας οὐδὲ τοῦ τι ἔστιν (1025b14) may seem to imply that τι ἔστι should refer specifically to the category of substance. For the same phrase used to refer to
does refer specifically to subjects as opposed to their attributes; the second distinguishing mark, however, does not.\textsuperscript{16}

Finally, this passage raises questions about the conformity of a science of being to the restrictions on demonstrating $\tau\iota \varepsilon \sigma \tau \iota$ imposed by the \textit{Posterior Analytics}. In \textit{APo}. 1.7-9, Aristotle maintains that the proper principles of a science cannot themselves be demonstrated in another science, because the $\kappa \alpha \theta \acute{\alpha} \omega \tau \omicron \omicron$ connections required for such a demonstration do not obtain.\textsuperscript{17} The definitions of animals and their attributes, for instance, are proper principles within zoology; therefore, they should not be conclusions of demonstrations in the science of being.\textsuperscript{18} The special sciences arrive at $\tau\iota \varepsilon \sigma \tau \iota$ using induction from starting points in sensation, but there is no demonstration of $\tau\iota \varepsilon \sigma \tau \iota$ from principles that are more known than it. In \textit{Meta}. 6.1, however, Aristotle implies that the science of being will treat of $\tau\iota \varepsilon \sigma \tau \iota$ in a way in which the special sciences do not. Aristotle continues to deny that there can be a demonstration of $\tau\iota \varepsilon \sigma \tau \iota$ (1025b14-16), but it is difficult to read the contrast between the way metaphysics and the special sciences treat $\tau\iota \varepsilon \sigma \tau \iota$ (b10-13) as implying anything other than that the science of the causes of being is also a science of the causes of $\tau\iota \varepsilon \sigma \tau \iota$. If so, it appears that proper principles in the special sciences will be explained in a higher science. Prima facie, it is difficult to see how this is compatible with the position argued for in \textit{APo}. 1.7-9.

The second and third distinguishing marks thus express more concretely what it means for metaphysics to be the kind of science described by the first distinguishing mark.

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\textsuperscript{16} In the event, in \textit{Meta}. 7.4 Aristotle seems to restrict this study to substantial $\tau\iota \varepsilon \sigma \tau \iota$ by reducing accidental $\tau\iota \varepsilon \sigma \tau \iota$ and $\tau \hbar \varepsilon \iota \nu \alpha \iota \iota$, to substantial $\tau\iota \varepsilon \sigma \tau \iota$ and $\tau \hbar \varepsilon \iota \nu \alpha \iota \iota$ using $\pi \rho \omicron \acute{o}z \acute{\varepsilon} \nu$ equivocity (1030a17-b7).

\textsuperscript{17} See chapter 1, pp. 40-2 above.

\textsuperscript{18} Nor can there be a demonstration of $\tau\iota \varepsilon \sigma \tau \iota$ from within a science, although the $\tau\iota \varepsilon \sigma \tau \iota$ of an entity may be revealed in the demonstration of its $\delta \tau \iota$. See \textit{APo}. 2.3-10, and esp. Landor 1985. This is not to say that the special sciences have nothing to say about $\tau\iota \varepsilon \sigma \tau \iota$; but they establish it by induction from sensation rather than from principles more known than it. Cf. note 5 above.
For a science to study being ἀπλῶς or qua being is for it to seek the causes not of the demonstrable attributes of specific genera of being, but rather to seek the causes of τί ἔστι in general and of the ei ἔστι of the ultimate subjects of per se attributes, substance. The study of the causes of being and substance will be universal in the sense that it investigates the sorts of thing that must be assumed as premises in the demonstrations of the special sciences. On the other hand, it remains unclear what exactly should be understood by a science of τί ἔστι and ei ἔστι. It seems to be a flagrant violation of Aristotle's strictures against a universal science for metaphysics to be science of the τί ἔστι of the objects of all the other sciences. We have suggested that Aristotle thinks that at least part of what it means for something to be is for it to be something intelligible. If something is scientifically intelligible, it will have a τί ἔστι: it will be an object of scientific definition. If there are entities that are scientifically intelligible, but whose scientific intelligibility is dependent on something else, it seems that it should be the business of metaphysics to seek the causes of the intelligibility, the causes of their τί ἔστι.

The introduction to Meta. 6.1 characterizes the investigation into the causes of being in three ways. The first is familiar from Meta. 4.1: metaphysics studies not a specific part of being but being at precisely that level of generality. Metaphysics seeks the principles and causes of beings qua beings, that is, the principles and causes of the nature of being in things that have it. The implications of the other two criteria are less clear: Aristotle describes the procedures of the special sciences presumably with the purpose of contrasting the procedures of a science of being, but we must infer Aristotle's views on the latter from what he says about the former. The implication of these discussions, however, is that the investigation into the causes of being will investigate the causes of τί ἔστι in general and of the ei ἔστι of substances in particular.

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19 See chapter 3, pp. 96-7 above.
20 We shall argue that Aristotle intends to offer such an explanation in Meta. 7.17; see sections V and VI of chapter 8, below.
The first section of *Meta*. 6.1 indicates that there will be a science of the principles and causes of being, and provides a sketch of what such an investigation might be expected to look like. The science of being will explain τί ἐστι in general and the εἰ ἐστι of substances in particular. This is not the only place in the corpus where Aristotle proposes a science of the εἰ ἐστι of substances. In *APO*. 2.1, one of the four questions relevant for scientific investigation is precisely the εἰ ἐστι question for substances (89b31-5). In the *Posterior Analytics*, however, Aristotle does not pursue the causal investigation of substances past *APO*. 2.2: in the later chapters of book 2 he is concerned exclusively with the scientific treatment of the ὅτι and διότι of per se attributes. In this section and the next two we shall attempt to explain why Aristotle did not attempt to complete this initial foray into substantial explanation.

Of the four questions introduced in *APO*. 2.1 two, τὸ ὅτι and τὸ διότι, are relevant for the study of nonsubstantial attributes; and two, εἰ ἐστι and τί ἐστι, are relevant for the study of substances. The ὅτι question is to the εἰ ἐστι question as the διότι is to the τί ἐστι. First one inquires into the ὅτι or εἰ ἐστι; having established this, one goes on to inquire into the τί ἐστι and διότι. The distinction between the investigation into τί ἐστι and the investigation into the διότι does not survive into the second chapter, however. In *APO*. 2.2, Aristotle identifies the τί ἐστι, διότι (or διὰ τί), and the middle term both for substances and nonsubstantial attributes:

... the reason that a substance simply exists but not that it is this or that, or that a substance has something which is essential or accidental to it but not that it simply exists, is the middle term. ... For it is evident that in all these the τί ἐστι is the same as διὰ τί ἐστιν. (90a9-15)²¹

As is confirmed by the examples that immediately follow (a15-23), to seek the definition of an entity—whether a substance or an attribute—is to seek its causes. The definition, which expresses the causes of an entity, serves as the middle term for its demonstration. With this language Aristotle implies that just as the causal definition of an attribute serves

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²¹ It is not clear what distinction Aristotle is making with "whether essential or accidental" (καθ' αὐτό ἢ κατὰ συμβεβηκός, 90a11). Presumably only καθ' αὐτό predications are demonstrable (*APO*. 1.6).
as the middle term for the demonstration of its ότι, so the causal definition of a substance will serve as a middle term for a demonstration of its εἰ ἕστη.

This implication is problematic for at least one obvious reason. The paradigms of demonstration in the APo. prove that per se attributes exist by proving them to belong to their subjects. It is difficult to see how this structure could be applied to demonstration of the being of substances. Part of what it means to be a substance is not to be an attribute of some other subject. Nor can existence itself be a demonstrable attribute of substances. If it were, the existence of a substance would be causally dependent on the substance as an attribute, but then the demonstration of a substance’s existence would be possible only if the existence of the substance as a subject for the attribute were already granted. The existence of the substance would be dependent on the substance, but the substance must already exist if something else is dependent on it. It is thus very difficult to imagine what a demonstration of the existence of a substance would look like. At any rate, while Aristotle extensively develops his examples of demonstrations using the definitions of attributes as middle terms, nowhere in the Analytics does Aristotle further develop the suggestion that there is a demonstration of the existence of substances.

Of equal interest for our purposes is the conception of the principles of substance implied by APo. 2.1-2. In the Analytics, as in the Organon as a whole, substances are defined in terms of their genus and differentia. The genus is one thing predicated univocally of many, that is, in Aristotelian terminology, a universal. If the causes of substances are found in the elements of their definitions, then presumably universal genera

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22 Primary substances are those that are neither said of other substances as genera and species nor present in substances as attributes (Catg. 5.2a11-14). Only genera and species, not per se attributes, can be secondary substances (2b29-37). Aristotle’s statement in APo. 2.2 that a middle term can express the cause of a substances is perhaps inconsistent with the view that a demonstrative science must assume the being of the subject, since substances cannot be attributes of anything else and thus must be subjects.


24 Cf. Ross 1949: 611-12. For examples of demonstrations using the definitions of eclipses and thunder as middle terms, see APo. 2.8.93a29-b12. On Aristotle’s procedure in this chapter see again Landor 1985.

25 The APo. substantially adopts the Categories methodology of genus-differentia definition for substances: APo. 2.13-14; cf. APo. 1.22.83a39-b1, McKirahan 1992: 111-115.

26 APo. 1.4.73b25-74a3, 1.11.77a5-9, 1.24.85b4-22; Meta. 7.13.1038b9-12.
will be among the principles and causes of substances.²⁷ The genera, which are univocally predicable of the substances whose genera they are, will be the causes of the being (ἐναντίον, 90a9) of these substances.

Notably absent from this account of the scientific explanation of substances is any mention of either matter or motion.²⁸ Aristotle writes as though the only relevant explanandum for sensible substances is their being, and the only principles relevant for its explanation their genera and differentiae. It seems unlikely that Aristotle means to indicate that all scientific explanation of substance belongs to a science of being: there is no indication that the Analytics is aware of such a science.²⁹ The impression given by APo. 2.1-2 is rather that Aristotle, having developed a satisfactory account of the explanation of per se attributes through demonstration, has simply transferred this model rather mechanically to the explanation of substances. Talk of explanation of the being of substances in the APo. no more implies a properly metaphysical investigation than talk of demonstrating the being of attributes.³⁰ The suggestion is rather of a global investigation into all the causes of substances. We have already seen that there are reasons to doubt that the demonstrative model can be applied to the explanation of substances, at least not without significant modification. We shall see that in the aporias, Aristotle presents several additional reasons to reject the account of the principles of substance implied by APo. 2.1-2.

²⁷ Cf. Meta. 3.3.998b3-8, 3.4.999a26-b4, 3.6.1003a12-17; discussed below. The genus is also the cause of the presence of its attributes in the individuals that it is said of, e.g., the attributes of animality in human beings: APo. 1.24.85b23-86a3. Cf. note 44 below.
²⁸ Both points are emphasized by Graham (1987: 103-10), who points to a tension between a "static" form of explanation in what he calls S₁ (based on the Organon), and a dynamic form of explanation in S₂ (based on the Physics). Graham perhaps goes too far in seeing a Kuhnian "paradigm shift" between the Organon and later works: it seems to be rather a question of adding principles and explanatory structures to the APo. account of scientific explanation rather than a wholesale replacement of one system with another.
²⁹ APo. 2.1-2 never distinguishes between physical and metaphysical investigations into substance.
³⁰ Recall that for Aristotle the "being" (ὁμοίωμα) of attributes does not require explanation in the science of being; pp. 158f above.
III

For the rest of the chapter, our concern will be with the nine aporias about the principles that occupy chapters 3-6 of book 3 of the *Metaphysics*. Although we shall discuss all nine aporias, we shall begin with and focus extensively on the first three aporias about the principles, aporias 6 through 8 in the numbering we are using. We shall argue that the sixth and seventh aporias are concerned to reject the account of the principles implied by what Aristotle writes in *APo.* 2.1-2: the genera of a substance cannot be genuine principles of that substance. Furthermore, we shall argue, the eighth aporia suggests the appropriate direction for a solution to the problems raised by the sixth and seventh aporias.

Of the nine aporias discussed in *Meta.* 3.3-6, seven are explicitly about principles (ἀρχαί), and another two are about ὄσια in the sense according to which ὄσια is a principle. It is thus convenient to refer to all nine as the aporias about the principles. The role of these aporias and their importance for interpreting the *Metaphysics* as a whole is disputed. Many interpreters seek to minimize their importance. Leszl, for instance, maintains that *Meta.* 3 “does not represent a very advanced stage in Aristotle’s metaphysical reflection,” and thus should not be used as evidence for Aristotle’s mature conception of metaphysics. Irwin points to the fact that the aporias “seem to emphasize Platonic questions and questions about the super-sensible,” whereas (Irwin thinks) this emphasis in not to be found in the later books. Both Irwin and Leszl argue that the role

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31 On questions of enumeration see chapter 2, note 2 above.
32 Cf. Mansion 1955: 146. The discussions of the sixth, seventh, ninth, tenth, twelfth, and thirteenth aporias explicitly refer to ἀρχαί; the eighth asks about an αἰτία; and the eleventh and fourteenth refer to ὄσια. We argued in chapter 2 (pp. 64-5) that the fourth aporia about the existence of suprasensible ὄσια could plausibly be seen as either methodological or substantive; so that it too might be added to this list.
33 Leszl 1975: 142-3.
34 Irwin 1988: 166. The influence of Plato is noted by almost all commentators, although the nature and extent of this influence is disputed. We shall argue that Irwin both overemphasizes the “Platonic” aspects of the aporias and underestimates Aristotle’s own interest in Platonic questions. Mansion’s comments (1955: 162) on Aristotle’s attitude toward Plato in the aporias are to the point: “Cette attitude ne s’explique pas non plus totalement par une intention polémique à l’égard de l’académie, Aristote prenant plaisir à accumuler les objections contre la conception platonicienne des principes. Car bien qu’une telle intention existe et soit bien manifeste, on sent bien qu’Aristote est lui-même embarrassé par les difficultés qu’il soulève. . . . L’abandon pur et simple des théories académiciennes . . . ne les fait pas disparaître,
of the aporias is to provide material for second-order reflection. Irwin thinks that the point of the aporias is similar to that of the Kantian antinomies: they indicate that current approach to the principles leads to dead ends and that a new *kind* of investigation—as opposed simply to a better account of the principles—is necessary.\(^{35}\)

In what follows we shall argue that the aporias in *Meta.* 3.3-6 are intended not to suggest the necessity of a second-order investigation, but rather to serve as important preliminary steps in a causal investigation of the being and substantiality of substances. The principles discussed in the aporias are not yet explicitly conceived as principles of being: in *Meta.* 3 issues surrounding the character and explanatory structure of the science of substance are still unresolved.\(^{36}\) Nor, for that matter, do all the principles puzzled over here turn out to be principles specifically of being. Nevertheless, it is difficult to see how a general discussion of principles could avoid having something of significance to contribute to the study of principles specifically of being. The aporias about the principles are, to a very large extent, aporias about the principles and causes of intelligibility in things.\(^{37}\) An explanation of this lies close at hand if we are right in thinking that one of the primary explananda of a science of being is intelligibility and *τί ἐστι.* If one of the explananda of the science of being is scientific intelligibility, many of the aporias about the principles will constitute preliminary discussions of principles and causes of being.

**IV**

The sixth and seventh aporias ask respectively, (6) whether the elements and principles (στοιχεῖα καὶ ἀρχές, 998a22) of things are their genera or their material constituents (ἐνυπαρχόντων); and (7), if the principles are the genera, whether they are the first (i.e., widest) genera or those predicated immediately of individuals (ἀτόμων,

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\(^{35}\) Irwin 1988: 166-7.

\(^{36}\) See our discussion of the methodological aporias in section II of chapter 2, below.

\(^{37}\) Note in particular 998b4-11, 999a26-b4, 999b26-7, 1003a13-17.
Let us take the sixth aporia first. The pre-Socratic physicists characteristically maintain that the principles are material constituents, whereas the Platonists and Pythagoreans maintain that they are the genera. It seems impossible that both accounts of the principles should be correct: each thing has only one definition, which analyzes it into its principles and causes, but a definition stating the thing’s genera will be different from one stating its material constituents (998b12-14).

Aristotle’s explicit argument for seeing the principles as material components is brief and not particularly interesting, depending on two examples and an appeal to the views of the physicists (998a23-b3). We know from the Physics, however, that Aristotle too believes that matter is a principle and that sensible substances cannot be defined without it. In Phys. 2.2, for instance, Aristotle criticizes those who posit Forms of sensible substances for overlooking the fact that such entities and their attributes cannot be defined without matter (193b35-194a7). An account of the principles of substances solely in terms of their genera would seem to be rule out the possibility of a science of physics.

The explicit case for the genera is more interesting. If we know each thing through a definition, and the genera are principles of definitions, then the genera will be the principles also of the things defined (b3-6). Thus the intelligibility of a triangle, for instance, will come from its genus (“plane figure”) and differentia (“three-sided”); a triangle is what it is because it belongs to the genus of plane figures. Likewise, beingness would exist in things, and things would have the properties of beings, because the genus of being can be predicated of them. The argument for the view that the genera are principles thus bases itself explicitly on the grounds for scientific intelligibility: the principles by which a thing is scientifically intelligible must also be the principles of that thing.

A good extended treatment of these two aporias can be found in Mansion 1955: 161-8. On genera as στοιχεῖα see Meta. 5.3.1014b6-15, where the highest genera, as μάλλον καθόλου, are said to be elements in a sense.

The eleventh aporia (Meta. 3.4.1001a3-b25, discussed in section VII below) closely parallels the sixth and seventh aporias in some ways; cf. esp. 1001a8-19.

See chapter 3, p. 71 above.

Cf. Mansion 1955: 175-6. "Aristote pense, d’accord ici avec son maître, que les principes des êtres ont pour tâche de fonder à la fois le réel et la science qu’on en a, sans qu’il soit possible de dissocier ces deux fonctions. C’est seulement dans la mesure où ils n’y réussissent pas que les principes platoniciens sont à rejeter et à remplacer par d’autres."
The view that the genera are principles likely owes something to the μέγιστα γένη of Plato's *Sophist* (254d4-5): things are beings, for instance, by participating in the genus of being (διὰ τὸ μετέχειν τὸν ὄντος, 256a1). As we have seen, however, it is possible to find a more proximate precursor to this view in the account of the causes of substance implied by *APo.* 2.1-2. Substances are defined in terms of their causes; and so the causes of substances will be the genus and differentia that appear in their definitions. The *Organon* has no developed concept of matter, and so matter figures neither among the principles and elements of the substance nor among the elements of its definition.

The sixth aporia thus points to lines of tension both between the *Organon* and the *Physics* and within the *Organon* itself. The *Organon* implies that all explanation is either of an εἰ ἔστι or a δὴ, and thus seems to leave out both motion as an explanandum and matter as the principle that explains it. The suggestion made by the sixth aporia is that there is not one but two basic kinds of principle relevant in explanations involving substances, with the implication that there is more than one science of substance. The groundwork is set for recognizing on the one hand that the scientific explanation of sensible substances is not simply a matter of explaining their intelligibility as kinds of thing, and on the other hand that explanation of the scientific intelligibility of substances may belong to a science distinct from the science of specifically sensible substance.

The aporia points to the tension within the *Organon* itself between the implication that genera are causes of individuals, and the view, expressed explicitly in the *Categories* and implicit in several important statements in the *Analytics*, that individuals are prior to universals or "secondary" substances. If genera are causes, it seems that universals will be prior to particulars. This train of thought is perhaps reflected in a highly uncharacteristic passage in *Catg.* 13, where Aristotle writes that the genera are prior by nature to their

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42 This at any rate appears to be Aristotle's interpretation of Plato, both here (998b9-11) and at 3.4.1001a9-12: the γένη of being and unity are the principles and (in the causal sense) ωςίαι of things. Aristotle's account of Plato, as usual with his account of the views of his predecessors, is in rather broad brushstrokes.
43 Although entities are defined in terms of both genus and differentia, we (like Aristotle) are interested only in the problem of whether the genera are principles. The reason for this, we shall argue, is that Aristotle rejects the claim of the genera to be principles, but includes the differentia among the principles by associating it with form and actuality (*Meta.* 7.12, 8.2).
species, since the genus can exist without the species but not vice-versa (15a3-7). In Catg. 5, however, Aristotle unequivocally asserts that everything said of or present in an individual is dependent on and thus posterior to that individual (1a35-2b10). The aporia points to the paradoxes that are generated by three Organon doctrines: (1) entities are defined in terms of their causes, (2) entities are defined in terms of their genus and differentia, and (3) individuals are causally prior to universals (and so genera cannot be principles of individuals).

Aristotle does not attempt a solution to the sixth aporia. The seventh aporia, however, does present an explicit argument that the genera cannot be principles. Since our reason for positing something existing apart from things is the fact of universal predication, if the genera are principles these must be the widest or most universal genera (999a19-23). Once you posit a “human” apart from individual human beings on the ground that something must be predicated universally of the individual human beings in order for them to be human beings, you are already on your way to the conclusion that “animal,” “substance,” and “being,” being wider universals, are higher principles.

If the genera are principles, then, it must be the highest genera (τὰ ἀνωτάτω τῶν γενών), and there will be as many first principles as highest genera (998b17-20). If this is the case, “Being” and “One” will be genera and principles. We have already examined Aristotle’s argument that being and unity cannot be genera (998b22-7), which is echoed in his argument in the eleventh aporia that they cannot be the ὕσσιαν of things (3.4.1001a29-b1). It seems that Aristotle’s arguments leave open the possibility that the highest genera are indeed principles, only being and unity are not genera. At the beginning of the eighth aporia, however, Aristotle seems to think that he has shown the impossibility not only of this but also of any generic account of the principles, whether one takes the highest or the

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44 See Cleary 1988: 25-6, 31-2. This suggestion is dropped in the parallel discussion of priority and posteriority in Meta. 5.11.

In APo. 1.24 Aristotle takes universals (i.e., the genera to which given attributes belong ἃνωτό) to be the causes of these attributes’ belonging to particulars. He is careful, however, to avoid any explicit statement that universals are causes of the subjects themselves. There is no necessary obstacle to the genus’s being the cause of the presence of its attributes (and thus prior to them), provided that it is not also prior to the substance whose genus it is. See chapter 7, pp. 215-16 below.

45 Cf. APo., 1.11.77a5-9, 1.24.85b18-22.

46 See chapter 3, pp. 82 above; and our discussion of the eleventh aporia, section VII below.

47 Aristotle argues against the view that genera are principles on different grounds in Meta. 7.14.
lowest (i.e., species-level) genera to be principles (3.4.999a29-32). Once one agrees that universality implies causal priority, one is immediately drawn to maintain that the most universal genera must be the highest principles, but it turns out that these cannot be genera in the first place.

We have accumulated several strong arguments against the account of the principles of substance implied by APo. 2.1-2. Our examination of this account reveals at least four serious weaknesses. First, it implies that a causal treatment of substances will be demonstrative, but it is difficult to see how any demonstration of the $\varepsilon \iota \varepsilon \sigma \tau \iota$ of substances could follow the APo. paradigms of demonstration. Second, it implies that universals will be causes of and hence prior to individuals, a position that is almost uniformly rejected throughout the corpus. Third, it does not seem to allow for the fact that any account of sensible world must recognize motion as a phenomenon and matter as a principle. Thus it neither allows for a science of physics nor recognizes the need for a science specifically of being and substantiality. Finally, the generic account of the principles appears to imply that being and unity must be univocal genera, which it seems that they cannot be. It seems clear that a different account of the principles is required. This alternative account of the principles of being and substance, we shall argue, is first hinted at in the eighth aporia.

V

The eighth aporia follows immediately upon Aristotle's discussion of problems about the genera. The aporia is introduced in Meta. 3.1 as follows:

We must inquire and discuss most of all [$\mu \alpha \lambda \lambda \iota \sigma \tau \alpha$] whether there is something besides the matter which is a cause in virtue of itself or not [$\pi \omicron \tau \omicron \rho \omicron \nu \varepsilon \sigma \tau \iota \tau \iota \pi \alpha \rho \alpha \tau \iota \nu \omicron \omicron \iota \omicron \nu \alpha \iota \tau \omicron \nu \kappa \alpha \theta' \alpha \upsilon \tau \omicron \omicron \eta \omicron \omicron$, and whether this is separate [$\chi \omega \rho \iota \sigma \tau \omicron \omicron$] or not, and whether it is one in number or more than one [$\varepsilon \nu \eta \pi \lambda \epsilon \iota \omicron \omega \tau \omicron \omicron \omicron$ $\omicron \omicron \theta \omicron \mu \omicron$, and whether there is something besides [$\pi \alpha \rho \alpha$] the composite or not . . . or in some cases there is but not in others, and in sort of things there is. (995b31-6)
Together with the eleventh aporia Aristotle seems to regard this as the most important of the aporias about the principles. It touches on several issues raised explicitly by other aporias: the role of the genera, whether there is something apart from sensible substance, whether the principles are one or many. Let us briefly list the various questions raised in this passage before moving to Aristotle’s discussion in Meta. 3.4.

The aporia inquires into the possible existence of something that is (1) an αἴτιον and (2) “besides” (παρά) the matter and the composite. It is not clear why Aristotle is asking the question separately for the matter and the composite, and whether he means something different by each question. The reason for positing separation seems to be that a cause must somehow be distinct from the entity whose cause it is. As Aristotle writes in Meta. 3.3, “the principle or cause should exist apart from the things of which it is the principle, and be capable of existing separately from them” (999a17-19). The same point is made in passing as part of Aristotle’s criticism of Parmenides’ monism: if Parmenides were right there would be no principles, for a principle must be a “principle of some thing or things” (Phys. 1.2.185a3-4). To be a cause is to be the cause of some thing or effect that is not simply identical to the cause. This recalls both Plato’s separation of the Forms and Aristotle’s criticisms of this separation, while at the same time presenting an Aristotelian reason why form should somehow be separate. If there is such a cause, it makes sense to ask whether it is one or many, since this is one of the principal difficulties facing the theory of Forms—Plato wants something that is numerically one to be the ύστερα of a multitude of individuals. To solve the eighth aporia is to solve the problems

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48 He calls the eleventh aporia πάντων ... χαλεπώτατον καὶ πρὸς τὸ γνώναι τάληθες ἀναγκαιότατον (1001a4-5).
49 Aristotle does not repeat the statement of the question in 3.4.
50 Or “apart” from; cf. Apostle’s translation of παρά at 999a18.
51 Slight modifications to Apostle: τὴν μὲν γὰρ ἀρχὴν δὲ τὴν αἰτίαν εἶναι παρά τὰ πράγματα ὑπὸ ἀρχῆς, καὶ δύνασθαι εἶναι χωριζομένην αὐτῶν. The use of παρὰ seems to imply separation. Compare 3.4.999b18-20, 8.3.1043b18-23, 12.3.1070a13-20.
52 Aristotle explicitly makes the argument that explanation requires complexity in Meta. 7.17 (1041a10-27, a32-b4). We discuss these passages in section V of chapter 8, below. The problem is not as acute in the case of per se attributes because the causes of the attributes are causes of their belonging to a subject, and so even if the attribute is simply identical to the cause of its belonging to the subject, the fact that the attribute belongs to the subject is something different from the attribute itself.
that led Plato to postulate the Forms in the first place. It is therefore unsurprising that Aristotle should call this aporia μάλιστα ζητητέον (995b31-2).

In *Meta.* 3.4 Aristotle presents two reasons to posit the existence of something existing apart from individuals. The first reason draws on considerations that Aristotle has raised in *Meta.* 3.3: there must exist something apart from individuals in order to explain the possibility of scientific knowledge.

If nothing exists apart from individual things [παρά τὰ καθ’ ἐκάστα], and these are infinite, how is it possible to get ἐπιστήμη of an infinite number of individuals? For insofar as something is one and the same [ἐν τι καὶ τάντόν] and belongs to things universally, to this extent we must know them all. (999a26-9)

This appears to imply the existence of genera existing παρὰ τὰ καθ’ ἐκάστα, but Aristotle has already rejected this solution in 3.3 ("we have just discussed the impossibility of this," a31-2) and will reject it decisively in 7.12-16. He goes on to ask the question in a different way. If there is something apart from (παρά) the composite when we predicate something of matter, must it be so in all cases, some cases or none? (999a32-b1). If in none, Aristotle goes on, there will be nothing νοητόν and hence no ἐπιστήμη. Knowledge seems to require something existing apart from individual sensible substances, and the most obvious candidate for such things are the genera to which the individual substances belong and (at least in the *Organon*) though which they are defined.

The second reason for positing an αἰτίαν apart from sensible individuals is that generation appears to require an unmoved principle:

Further [if only sensible substances existed] nothing would be eternal or immovable, for all sensible things are destructible and in motion. But if there is nothing eternal, neither is generation possible; for [1] there must be something which is in the process of becoming and from which something else is generated, and the last of these must be ungenerable, if indeed there is a stop and generation out of nonbeing is impossible. Further, if generation and motion exist, [2] there must be a limit [πέρας]; for no motion is infinite but every motion has an end [τέλος], and nothing is being generated if the generation cannot be completed, and that which is generated must exist [ἀνάγκη εἶναι] when it has first been generated. (999b4-12)

Generation requires both a ὑποκείμενον and a τέλος, neither of which can themselves be generated. For our purposes it is the second requirement that is of interest. The process of
generation is a process toward being and oûσία. On pain of regress, the τέλος cannot itself be generated. This ungenerated principle, which must be παρά τὸ σύνολον (b16), is the form of the substance that is being generated (τὴν μορφὴν καὶ τὸ εἴδος).

This is the closest Aristotle comes in the aporias to providing a solution in his own philosophical vocabulary and in terms he will later endorse in the central books. It is the only mention of Aristotelian form in the aporias about the principles, and the only substantive mention of form anywhere in book 3. Aristotle even implies that oûσία in its causal sense—the oûσία that is mentioned as one of the causes sought in Meta. 1 and in the first aporia—is nothing other than Aristotelian form (b14). Why do we suddenly find a solution here to a problem that neither the sixth and seventh aporias nor the first half of the eighth aporia was able to solve?

It should be noted that form is introduced directly only as a τέλος of generation, and not as principle of scientific intelligibility or—if our account of the nature of being is correct—a principle of being. When Aristotle considered the eighth aporia from the point of view of scientific knowledge, he left off no further ahead than he started. Nor is the introduction of form in this role anything new: the necessity of an unmoved τέλος is already well-established in physics. In the Physics Aristotle assigns the study of this principle to first philosophy:

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53 This implies a critique of the Platonic dichotomy between the world of γένεσις and the world of oûσία: there cannot simply be a world of γένεσις, because γένεσις implies the existence of some oûσία for the sake of which the γένεσις is occurring. Frede (1988: 39) uses this fact to argue that γένεσις cannot literally mean “becoming” for Plato; but Code’s reply (1988) points out that it is not clear to what extent Plato appreciated this point. On generation being for the sake of oûσία see also PA 1.1.640a18-19; cf. Meta. 7.8.1050a4-10.

54 This argument anticipates Meta. 7.8.

55 The role of a τέλος and πέρας (999b9) for individual generations cannot plausibly be served by Aristotle’s god. Cf. MA 700b29-32: “It is clear that the movement of the eternally moved by the eternal mover is in one respect similar to that of any animal, but in another respect dissimilar; hence the first is moved eternally, but the movement of the second has a πέρας” (trans. Nussbaum 1978).

56 It is not completely clear that Aristotle is using oûσία to refer to the principle here, though Aristotle’s identification of this principle with oûσία when he asks whether it is one or many (b20-3) suggests that he is.

57 See p. 166 above.

58 This admittedly makes certain assumptions about the relation between the two sciences: it suggests that the Metaphysics is taking over a principle already established in physics, and thus that in the progression from what is more known to us to what is more in itself physics is prior to metaphysics. We argued in our Introduction (p. 11-13) that the Physics is likely earlier than the Metaphysics.
A mover that is not movable is not a cause within physics, for it moves without having in itself motion or a principle of motion but is immovable [ἀκίνητα]. Accordingly there are three disciplines: one concerning immovable things [ἀνκίνητων], a second concerning things which are in motion but are indestructible, and a third concerning destructible things. . . . Now the principles that cause physical motion are two: One of these is not physical, for it has no principle of motion in itself, and such is that which moves another without itself being moved, as in the case of that which is completely immovable and primary among all; and such is also the whiteness or the form [τὸ τί ἐστιν καὶ ἡ μορφὴ], for this is the end [τέλος] or final cause. (198a28-b4)

Motion requires unmoved principles, which are in turn studied in first philosophy. In this capacity, both the unmoved mover and the forms of sensible substances are objects of first philosophy (198a30). As in the eighth aporia, the forms of sensible substances are unmoved τέλη of these substances' generations.

How might all of this be relevant for a science of being? If Aristotle can explain how the unmoved principles in physics are also principles of being and intelligibility, then he will have found a replacement for the generic account of the principles that he has just rejected in Meta. 3.3. Form would serve as a principle for scientific intelligibility and universality without itself being a genus or a universal. He will also have made a step toward achieving what he clearly intends to do in Meta. 6.1, that is, to identify the science of being qua being with first philosophy. There is no sign in the eighth aporia that Aristotle is contemplating this identification, but the aporia both defines the problem and suggests a possible solution that makes use of principles already available in another science.

Although Aristotle seems to look favourably on this solution, it nevertheless presents difficulties. First, it is not clear in which cases such a principle needs to be posited. Aristotle appears to think it obvious that there is no such thing as a house apart

59 Cf. 1.9.192a34-b2 and 2.2.194b9-15, which are ambiguous but seem to indicate that it is the business of first philosophy to study the formal principle considered in abstraction from its role as cause of motion. These passages, and the relation between first and second philosophy in general, will be discussed at greater length in chapter 7.

60 On the development of this solution see Owens 1978: 386-95.

61 At this point it is much easier to see how the forms of sensible substances might be principles of being than Aristotle's god: it is difficult to see how god could replace the genera as principles of intelligibility. In Meta. 6.1, by contrast, the emphasis is strongly (perhaps exclusively) on Aristotle's god.
from individual houses (τινὰ οἰκίαν παρὰ τὰς τινὰς οἰκίας, 999b19-20), though he does not indicate in which cases it is more reasonable to suppose there might be something of this sort. Later treatments of this question make it clear that Aristotle is not trying to make the general point that for any sensible substance there should be nothing apart from individual members of the species. In Meta. 8.3, for instance, Aristotle argues that there must be something παρά τὴν ὅλην in sensible substances (1043b4-14). Going on to ask whether this is separate, he writes again that it is clear that it is not so in houses and tools (i.e., in artifacts) but implies that there might be a separate principle in substances existing by nature (b18-23). The same point is made again in Meta. 12.3: the form of a house is not παρά τὴν συνθετὴν οὐσία, but there might be principles of this sort in natural substances (1070a13-18).

The second difficulty concerns the question whether this separate principle is one or many. Is there one universal οὐσία of all members a species, for instance, one form of all men? Aristotle rules out this possibility with a principle that will recur later in the Metaphysics: that of which the οὐσία is one is itself one. If there were numerically only one form of human being, and it were the οὐσία of humans, all human beings would be numerically one. This is impossible. One the other hand, Aristotle thinks it is absurd for the principles to be πολλὰ καὶ διάφορα (b22), presumably because in this case there might be nothing in common between two members of purportedly the same species. The principle can be neither a universal nor a multiplicity of causes with nothing in common. Finally, Aristotle raises (but does not discuss) the problem of how the matter can be generated into the composite and how the composite can be both form and matter (b23-4).

Despite these difficulties, Aristotle’s treatment of the aporia suggests an affirmative solution. It is necessary to posit form as a τέλος for generation, and thus as a

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62 This last text suggests a reason why it is unnecessary to postulate separation in the case of artifacts: the form of the house is already in something separate from the house, the τέλος possessed by the builder. In natural substances the form exists in members of the species and nowhere else, thus suggesting the need for some degree of separation between the thing and its form if the form is to be a cause (cf. Meta. 3.3.999a17-19).

63 ἐν γὰρ πάντα ὁ ὅλη μία, 999b21-2. Cf. Meta. 7.13.1038b14-15, 7.16.1040b17—both appearing as part of arguments that universals cannot be οὐσία. See note 106 below. Despite its usefulness as an anti-Platonic argument, the argument does not appear among Aristotle’s arguments against Platonic Forms.
cause that is somehow apart from (πορά) matter and the sensible composite. We shall argue in chapter 8 that, in the central books, Aristotle develops this line of thought in the way already hinted at in the aporia. Form is not only a τέλος of generation but the οὐσία and cause of being (αἴτιον τοῦ εἶναι) for sensible substances.64

This line of thought must be set against several facts that make it difficult to see how form can be a principle in metaphysics. Aristotle repeatedly insists that forms cannot be separate from the composites of which they are the forms. He clearly does not mean to deny all separation between the form and the composite—there is separation in λόγος or εἴδος—but it is not clear whether separation in λόγος is sufficient for something to be considered an object of metaphysics.65 Furthermore, Aristotle's identification of first philosophy with theology in Meta. 6.1, and his treatment of the separation of intellect at De anima 1.1.403a3-19 and 3.4-5, seem to imply that the forms of sensibles are not properly objects of metaphysics. Finally, to recall the themes developed in our third chapter, it is difficult to see how an irreducible multiplicity of forms could constitute the first genus of οὐσία and the nature of being. What seems to lead to the conclusion that they must somehow be objects of metaphysics is that it is difficult to see what else could perform the task demanded by Aristotle's arguments in the sixth through eighth aporias.66

We need an account of form that will explain both its causal role in sensible substance and its relation to god and the nature of being.

VI

The eighth aporia suggested that it is necessary to introduce a principle that is in some way separate from the sensible composite. The ninth, tenth, twelfth, and thirteenth

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64 Meta. 7.17 passim; 8.3.1043b4-23; cf. DA 2.4.415b12-14.
65 According to Meta. 6.1 one of the characteristic features of objects of first philosophy is separation; 1026a10-23; cf. DA 1.1.403b15-16. On form as separate in λόγος see Meta. 8.1.1042a29, 5.8.1017b25; Phys. 2.1193b4-5, 2.2.194b12-13). Separation in λόγος is to be distinguished from the separation in thought (νόησις or διάνοια) characteristic of mathematical entities; cf. Meta. 10.1.1052b17.

Gerson (1994: 88) raises a problem related to the fact that there can be only one actuality in a substance, suggesting that this actuality is not the form but the composite. See our discussion in section VIII of chapter 8, below.
66 Aristotle may be implying in Meta. 12.10 that the prime mover is the solution to the eighth aporia (1075b24-7), though how this mover could be a πέρας of generation of physical substances (999b9-10) is at best unclear. See note 55 above.
Aporias deal with the questions that arise when one accepts the view that there must in fact be a principle of this sort: is it one or many, eternal or destructible, universal or particular, potential or actual? The questions raised in these aporias are not simply generated by the eighth aporia—they belong to a general discussion of principles and would be raised whether or not Aristotle had also explicitly raised the eighth aporia—but they do seem to assume that this aporia is to be answered affirmatively. If there is no cause apart from individual sensible substances, there is no point in asking about its characteristics. Interspersed with these are the eleventh and fourteenth aporias: (11) whether being and unity are οὐσία of things, and (14) whether mathematical and Forms are οὐσία.

As with the eighth, Aristotle does not repeat the question raised in the ninth aporia when he discusses it in Meta. 3.4. In 3.1 Aristotle phrases the question as follows: “We must inquire whether the principles are definite in number or in kind [πότερον ἀριθμῷ ή εἴδει ὁμοιόμορφῷ] both in the λóγοι and in the ὑποκείμενον” (996a1-2). The question is asked of two kinds of principles, implying that Aristotle is assuming some kind of a form/λόγος versus matter/subject distinction. On the other hand, the λόγος is not explicitly called a form: this half of the question is not whether form is one numerically or in kind but rather whether the principle in virtue of which the thing is defined is one or many. The various possibilities are canvassed in 3.4.

If the principles are one in kind (εἴδει), then nothing will be numerically one, not even being itself and unity itself. But it is difficult to see how there can be scientific knowledge if there is not something ἐν ἐπὶ πάντων (999b24-7).67 Aristotle does not explain here why knowledge requires something numerically one; perhaps he is repeating a Platonic assumption. Aristotle argues that no less difficult problems arise if one does attempt to make the principles numerically one (999b27-1000a4). If the principles are one in number, nothing will exist apart from the elements. That is, each element will be not only specifically but also numerically one, so that the same element could not be found in different things. Aristotle does not specify what kind of elements he is referring to: his

67 I follow Ross (1924: i.242) and Owens (1978: 245-6) in taking these lines to be a single argument. One might infer from Aristotle’s statement that “nothing will be numerically one” if the principles are not one in number that he is also arguing that the existence of things that are numerically one (individual plants, animals, etc.) requires principles that are numerically one.
examples, drawn from linguistics, suggest that he has material components in mind but the argument works equally well for the forms of physical substances. The argument thus suggests very strongly that the principles of specifically the same entities can be only specifically and not numerically one.

In fact one might wonder why any sort of numerical unity is thought to be necessary for scientific intelligibility: scientific knowledge is possible as long as the same definition can be predicated univocally of many instances of the same thing, and in order for this to be possible all that is necessary is that whatever it is that makes instances of the same kind of thing intelligible be specifically one. This appears to be Aristotle's position in APo. 1.11 and 1.24.68 What motivates the desire for numerical unity is perhaps the question why this multiplicity of specifically identical principles should exist in the first place. What is it that causes specific unity in principles that are numerically many? The temptation is to search for a prior \( \Delta \varphi \chi \) that is numerically one and is the cause of the specific unity of the \( \Delta \varphi \chi \) that lack numeric unity.69 If the unmoved mover has an intelligible causal role in metaphysics, we might expect it to be this. We shall examine the extent to which this is so in our last chapter.

The tenth aporia inquires whether the principles of destructible and indestructible things are the same or different (1000a5-7). On Aristotle's view this topic has been largely ignored by his predecessors. Empedocles at least mentions two principles (Friendship and Strife), which might be taken to be respectively principles of generation and destruction, but Empedocles does not maintain a consistent distinction between them, sometimes using Strife to explain generation and Friendship to explain destruction (1000a24-b17).70 Aristotle does credit Empedocles with consistency in not positing any indestructible things

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68 APo. 1.11.77a5-9, 1.24.85b18-86a3.
69 Aristotle does use the notion of an \( \Delta \varphi \chi \) of an \( \Delta \varphi \chi \) in dialectical contexts; cf. Meta. 3.6.1002b34-1003a2, 12.10.1075b25-7. An \( \Delta \varphi \chi \) that itself had an \( \Delta \varphi \chi \) would presumably be an \( \Delta \varphi \chi \) only in a qualified sense. Aristotle is willing to call form an \( \Delta \varphi \chi \) in Meta. 7.17 (1041a6-7, b31), even though it is presumably not unqualifiedly primary.

On the appropriateness of "one in number" to describe Aristotle's god see Meta. 12.8.1074a36-7. To call something one in number is not necessarily to imply that there may be other things of the same kind.
in the first place (b17-20); but Aristotle clearly believes not only that not all things are destructible but that there are also indestructible things that have principles.\(^7\)

Aristotle appears to take for granted the fact that the principles of destructible and indestructible things are not the same: otherwise, there would no explanation of why some things are destructible and others not (1000b20-2). The more difficult question concerns whether the principles of destructible things are themselves destructible. Clearly the principles of indestructible things are not themselves destructible: otherwise the things that depend on them would also be destructible. If the principles of destructible things are themselves destructible, they would have to be destroyed into something else; but if so the destructible "principles" would not really be principles in the first place since they would be composed of something else. Aristotle does not explicitly raise the problem of an infinite regress here, though he is presumably keeping in mind the arguments for indestructible material principles in Phys. 1.9 (192a25-34) and the eighth aporia (999b12-14). Furthermore, to make the principles of material things destructible is to imply the possibility of the annihilation of the physical world, since its principles are themselves destructible (1000b28-9). This suggests the necessity of at least one unqualifiedly eternal principle.

The task is therefore to explain how there can be both destructible and indestructible things if the principles of both kinds of thing are themselves indestructible (b29-32). Aristotle remarks that this difficulty has generally been overlooked by his predecessors in their eagerness to reduce everything to one principle (b32-1001a1). Aristotle’s criticisms of his predecessors on this count have implications for his own account of the division of labour between physics and metaphysics. Although there must be a sense in which the principles studied in metaphysics are universal, they cannot be universal in the sense of being sufficient to explain all phenomena. Otherwise, there would be a single set of principles that explained all phenomena, but it seems impossible that the same principles should explain both corruptibility and incorruptibility. We may therefore

\(^7\) Aristotle is perhaps assuming the Phys. proof for the eternity of motion, as well as the eternity of the species (GC 2.9-11). Clearly Aristotle's god is eternal, but it is not the sort of thing to have principles. Mansion (1955: 175) points out that both this and the thirteenth aporia will appear particularly insoluble on the pre-Socratic view that the principles are the material constituents.
expect that motion will require additional principles not studied in metaphysics. The aporia echoes the sixth aporia in suggesting that a single science is insufficient for explaining all the phenomena associated with sensible substance.

VII

Aristotle opens his discussion of the eleventh aporia in 3.4 by calling it the most difficult and “most necessary for knowing the truth” (πρὸς τὸ γνῶναι τάλθες ἀναγκαστατον, 1001a4-5). It is necessary to inquire

whether (a) being and unity are ὀὐσίαι of things or not, and whether each of them, without being something else, is being and unity respectively, or whether (b) we should inquire what being and unity are as if there were some other nature underlying them.72

The aporia is traditionally understood to present two alternatives: either being and unity are substances or they are attributes of other substances.73 Aristotle’s mention of an “underlying nature” seems to confirm this interpretation: if being and unity are not ὀὐσίαι and there is a nature underlying them, then it would be reasonable to conclude that they are attributes of the underlying nature. Doubts as to accuracy of this rendering arise when one considers the way in which Aristotle explains the two alternatives. Aristotle contrasts the case where being and unity are just what they are “without being something else” with that where we should “inquire what [τί ποτ' ἐστι] being and unity are.” The implication is

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72 Meta. 3.4.1001a5-8: πότερον ποτε τὸ δὲ καὶ τὸ ἐν ὀὐσίαι τῶν διὸν εἰσί, καὶ ἐκάτερον αὐτῶν οὐχ ἔτερον τι δὲ τὸ μὲν ἐν τὸ δὲ ἐν ἕστιν, ἢ ἐπι ζητεῖν τι ποτ' ἐστι τὸ δὲ καὶ τὸ ἐν ἃς ὑποκειμένης ἄλλης φύσεως. Cf. 3.1.996a4-9. I follow the ROT rather than Apostle in translating τί ποτ' ἐστι τὸ δὲ καὶ τὸ ἐν. Apostle’s translation, “what is that which is a being or one,” is not the most natural rendering of the Greek and seems to be dictated rather by his interpretation of the passage. The aporia receives a negative answer at Meta. 7.16.1040b16-27 and 10.2.1053b9-21.

73 See Owens 1978: 248, Mansion 1955: 170-1, Berti 1979: 89, Apostle 1966: 279 n. 24, and Ross 1924: i.239. Although their use “attribute” or “attribut” tends to suggest something in a category other than substance, most interpreters do not make this precision. (It is, however, made by Apostle [1966: 279 n. 24]). Most commentaries implicitly leave open the possibility of a relation like that between primary and secondary substances in the Categories.

Reale (1980: 78) and Hager (1970: 228) avoid implying that the distinction is between substances and attributes but do not develop the issue further. The interpretation closest to our own is that of Bärthlein (1972: 298-9), who recognizes that the sense of ὀὐσία in which Aristotle is interested is that according to which ὀὐσία is a kind of principle.
that the "underlying nature" will be the answer to the τι ἐστι question, that is, that the underlying nature will define being and unity.74

It is difficult to construe this contrast as a distinction between substances and attributes. Although it is true that attributes must have a subject underlying them, the subject does not define the attribute.75 Furthermore, as Aristotle makes clear in APo. 2.2, the τι ἐστι question can be asked both of subjects and of attributes:

As we say, then, to understand what something is [τι ἐστι] is the same as to understand why it is [διὰ τι ἐστιν]; and this is either of a thing simply taken [ἀπλῶς] and not of something belonging to it, or of something belonging to it, e.g., of the equality of the angles of a triangle to two right angles or that they are greater or less [than two right angles].76

By something taken ἀπλῶς Aristotle is referring to a subject; by something that belongs to it he is referring to an attribute.77 In both cases it is possible to inquire into the thing's whatness or τι ἐστι, which is the same as to inquire into its cause. Thus the question, "What is a human being?" will receive as its answer not just "human being" but rather an account of human beings in terms of their causes.78 Whatever Aristotle is referring to when he writes of something that is just itself without being something else, he is not referring to substances as distinct from attributes. Nor does Aristotle's terminology suggest such a distinction: in his treatment of these issues Aristotle does not describe being and unity as συμβεβηκότα, πάθη, or ὑπάρχοντα.79

74 Definitions are λόγοι of a τι ἐστι; APo. 2.10.93b29.
75 Meta. 7.4-5 suggests that attributes are logically posterior to their subjects so that the subject must enter into the definition of the attribute (cf. type [2] καθ' αὐτό, APo. 1.4.73a36-b3). Nevertheless even if oddness and evenness must be defined as attributes of number, "number" is not their definition.
76 APo. 2.2.90a31-4. We have suggested that there is doctrinal development between the APo. and the Meta.; nevertheless, in Meta. 3.4 Aristotle is using APo. terminology in a way consistent with its use in the APo. See our account of Aristotelian definition in section VI of chapter 1, above.
77 Cf. APo. 2.1.89b33, 2.2.89b35-90a5.
78 This is complicated by the fact that Aristotle frequently uses "two-footed animal" as the definition of human beings, a definition which is certainly not in terms of the causes of humanity. The definition of the soul in De anima 2.2 suggests that the best definition may be "rationality (and the other faculties needed for its exercise) in a body in potency to it"; cf. Aristotle's advice on defining objects of physics at DA 1.1.403a3-b19.
79 To anticipate, Aristotle's description of "one" as a κατητήρημα at 10.2.1053b18 has no implications for whether it is a substantial or nonsubstantial predicate. See p. 188 below. It has been suggested that unity is a per se attribute of being. I am not convinced of this (passages such as 1003b19-1004a2 and 1004b5-6 tell rather strongly against it), but for present purposes it is sufficient to make the limited point
The issue is not whether being and unity are substances or attributes, but rather whether or not they are to be defined in terms of principles and causes distinct from them. In *Meta.* 3.4 Aristotle attributes the view that they are so defined to the "natural philosophers":

... the natural philosophers believe that [being and unity are not ὄσικα of things]. Empedocles, for instance, as if reducing unity to something more known, states *what unity is,* for it would seem that he says that this is Friendship; it is this, at any rate, which for him is the cause of unity in all things. Others say that this unity and being, of which things consist or from which they have been generated, is fire, and others say that it is air. (1001 a12-17)

Empedocles posits Friendship as the cause of unity. Consistently with his identification of the τι ἐστι and the cause in the *APo.*, Aristotle construes this statement as an account of the τι ἐστι of unity in terms of something causally prior to and "more known" (γνωριμώτερον) than it. The relation of unity to Friendship is not that of an attribute to a subject but rather that of something that has a principle to its principle. For the other natural philosophers the causes of being and unity are to be found in the elements: water, air, fire, and so forth. Being and unity are not principles but rather things that have principles, primarily in the material constituents that "underlie" them. If this is what Aristotle means by saying that being and unity are not ὄσικα of things, there is no reason to suppose that in this case they must be attributes.

Let us examine the other alternative. Aristotle attributes the view that being and unity are ὄσικα of things to the Platonists and Pythagoreans:

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that Aristotle does not characterize either being or unity in these terms in his treatment of the aporia and its solution.

80 . . . ὁς εἰς γνωριμώτερον ἀναγων λέγει τι τὸ ἐν ἐστιν . . . (departing slightly from Apostle's translation and adding emphasis).

81 As the *cause* of unity Friendship will be more known by nature; on the various ways in which something can be more known cf. *APo.* 1.2.71b33-72a5, *Phys.* 1.1.184a16-18, *Meta.* 7.3.1029b3-12, *DA* 2.2.413a1-1. That the τι ἐστι question is used in its causal sense in the *Meta.* is appreciated by Bolton (1995), though he does not discuss this passage in particular.

82 This seems to be the best explanation of Aristotle's mention of an "underlying nature" (1001a8), i.e., a ὑποκείμενον in the sense of the material cause. Aristotle is thus using a word that implies a predominantly materialistic conception of the causes to refer to principles and causes generally. Something similar can be seen at *Meta.* 4.1.1003a29-30, where Aristotle refers to the "elements" (στοιχεῖα) of being qua being. On the other hand, it does seem odd to refer to Friendship as an "underlying nature," especially when *Meta.* 1.4 makes it clear that Aristotle conceives it as a moving cause. One gets the impression that Aristotle is not being particularly careful here.
Plato and the Pythagoreans believe that neither being nor unity is some other thing \( \varepsilon \varepsilon \tau \varepsilon \rho \varepsilon \varepsilon \nu \tau \), but that such is their very nature, that is, the \( \omega \varsigma \iota \alpha \) of Unity is to be Unity and that of Being is to be Being. (1001a9-12)

The meaning of this is obscure, and the sentence is plagued by textual difficulties. It is possible however to draw certain inferences. If the Platonic and Pythagorean view that being and unity are not “some other thing” is meant to contrast with the Empedoclean view that they are definable in terms of something else, then we should expect the Platonists and Pythagoreans to be treating being and unity as definitional primitives. They should thus have no causes in terms of which they are to be understood. Being and Unity would themselves be principles.84

This is in fact how Aristotle describes these positions in the first book of the Metaphysics:

The Pythagoreans . . . spoke of two principles in the same manner but added this much (which is peculiar to them), that they did not think the Finite and the Infinite [and the One]85 were other natures [\( \omega \varsigma \chi \varepsilon \tau \varepsilon \rho \varepsilon \varepsilon \nu \tau \varsigma \varsigma \varsigma \varsigma \varepsilon \varsigma \varsigm
For both Plato and the Pythagoreans the One is a principle of other things, and a principle in its capacity as their ὀὐσία. The One is the One without also being some other nature (ἐτέρας . . . φόσεις, ἕτερον τι): it is not defined in terms of anything else. Although Aristotle does not mention it here, the same might be said of the genus of Being in Plato's *Sophist*. Things exist because they partake in Being, but being is neither dependent on nor understood in terms of anything else.\(^8\)

Being and unity for Plato and the Pythagoreans are ὀὐσία, and ὀὐσία in the sense of principles. We have seen that Aristotle introduces ὀὐσία as one of the causes in *Meta.* 1.3. It takes the role of the formal cause in Aristotle's enumeration of the four Aristotelian causes, and Aristotle refers to this cause in these terms throughout *Meta.* 1 and 3.\(^9\) We have also suggested in our account of *Meta.* 4.1-2 that ὀὐσία in its causal sense should be identified with the first genus of ὀὐσία and serve as the cause of being and substantiality in secondary instances of ὀὐσία.\(^10\) To say that Being and Unity are the ὀὐσίαι of things would thus be to say that they are the causes of being and substantiality in the things of which they are ὀὐσίαι. Notice to say that something is ὀὐσία in the causal sense is not necessarily to say that it is an individual substance: this will be true of the Platonic Forms but not, Aristotle implies, of the Pythagorean One.\(^11\) In asking whether Being and Unity are ὀὐσίαι of things the aporia initially abstracts from the question of whether and how these principles are themselves separate and substances.\(^12\)

The question asked in the eleventh aporia is thus very similar to that already discussed in *Meta.* 3.3. In his discussion of the seventh aporia, Aristotle argues that if the highest genera are the principles (ἀρχαί), then being and unity will be ἀρχαί καὶ ὀὐσίαι (998b20-1). This leads directly into the argument that being cannot be a genus.

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\(^8\) Motion (and presumably everything else) exists διὰ τὸ μετέχειν τοῦ δντος (*Soph.* 256a1). Aristotle is not careful to distinguish different accounts of the principles in different Platonic dialogues (not to mention the unwritten teachings), so we are leaving such questions aside.

\(^9\) We discuss these passages in section 1 of chapter 2, above.

\(^10\) See chapter 3, pp. 94-7 above.

\(^11\) "Plato, unlike the Pythagoreans, posited the One and Numbers as existing apart from things [παρὰ τὰ πράγματα]..." (*1.6.987b29-31*). Likewise, it appears that Aristotelian form is ὀὐσία in some causally relevant sense but not unqualifiedly separate; see *Meta.* 7.17 (*passim*), 8.3.1043b4-14.

\(^12\) On this point Bàrthlein (1972: 298-302) seems closer to the truth than Berti (1979: 92 n. 11).
Significantly, Aristotle uses the same kind of argument in the eleventh aporia to show that being and unity cannot be ὁ��ίαοι:

But if being itself and unity itself were something, there is much difficulty as to how there can be something else besides these, that is, how things can be more than one. For what is distinct from being does not exist, so the statement of Parmenides must follow, namely, that all things are one and this is Being.

(3.4.1001a29-b1)

Aristotle explicitly points to the Parmenidean implications of the impossibility of differentiating a genus of being. In order to differentiate a genus, a differentia must somehow be distinct from that genus: otherwise it would not differentiate. If being is a genus, however, to the extent that the differentia is distinct from being it will simply not exist, and will not be able to differentiate because it does not exist. A genus of being would impose mutually incompatible requirements on its differentiae.

Aristotle presents several additional arguments against this position, although these seem more technical and dependent on the details of the positions that Aristotle is criticizing (1001b2-25). The only point in favour of maintaining that being and unity and the ὁ��ίαοι of things is that these are the highest universals, and so if we do not posit these to be ὁ��ίαοι, no other universal will be ὁ��ίαοι, with the apparent consequence that only individuals will exist (1001a19-24). This recalls the difficulty raised in the eighth aporia: if there are only individuals, how is there to be scientific knowledge?

If our account of these passages is correct, it becomes easier to see why Aristotle calls the eleventh aporia “most necessary for knowing the truth.” In asking whether being and unity are the ὁ��ίαοι of things, Aristotle is asking whether the beingness of things is to be understood and explained in terms of entities that are just Being Itself and Unity Itself, or whether being and unity must be understood and explained in terms of something else. In chapter 3 we saw Aristotle reduce being to ὁ��ίαοι through πρὸς ἐν equivocity, and we made the suggestion that the nature of being and ὁ��ίαοι is ultimately to be found in the

93 Aristotle actually rejects one of these arguments, an argument based on Zeno’s principle.

94 Here Berti’s reference to the Thomistic account of God as ipsum esse seems to the point (1979: 90, 94-5, 113-15): there is some nature that is intelligible just as being. Berti’s account differs from ours in proposing that Aristotle’s refusal to make being the ὁ��ίαοι of things entails the rejection of a nature of being (e.g., p. 114). On our account there is a nature of being, but this nature is in turn to be understood in terms of ὁ��ίαοι and τι ἐν ἐνεφαλ. 
first genus of ὄσια, which is also the cause of being in other instances to the extent that they share in this nature. We should thus expect Aristotle's solution to the aporia to confirm that there are no principles that are just being-itself and unity-itself: both are to be understood and explained in terms of primary ὄσια. Thus being-itself and unity-itself are not the principles and ὄσια of things, but are themselves to be understood in terms of something causally prior to them.

Without going as far as to identify the nature of being in primary ὄσια, Aristotle does reject the view that being and unity are ὄσια when he solves the aporia in Meta. 7.16 and 10.2.

Since the term "unity" is used like the term "being," and the ὄσια of what is one is one, and things whose ὄσια are numerically one are numerically one, it is evident that neither unity nor being can be the ὄσια of things, just as neither the essence of an element nor that of a principle can be ὄσια; but we ask "What is the principle [ὁμοιοῦ]?" in order to reduce <them> to something more known [ίνα εἰς γνωριμώτερον ἀναγάγομεν]. (1040b18-21)

Aristotle’s answer thus is a partial vindication of the methodology of the natural scientists. As Empedocles did in reducing unity to Friendship, it is necessary to understand being and unity in terms of some other principle or principles “more known” than them and to which they may be “reduced.” It is also clear from Meta. 7.16 that this explanation will not lie in the material components of things: if Aristotle adopts the methodology of the natural scientists, he does not also adopt their conclusions. Aristotle’s approach differs from the natural scientists’ precisely in recognizing that there is such a principle as ὄσια and τί ἴν εἶναι, the principle that he criticizes the natural scientists for overlooking. Aristotle will

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95 Cf. 3.4.1001a12-14; Frede and Patzig (1988: ii.303-4); Bärthlein (1972: 318). Bostock (1994: 229) does not recognize the reference to the eleventh aporia. It is not made explicit in the passage that it is being and unity whose principles Aristotle is seeking, although it is clear that he is seeking the principles of those things of which Being Itself and Unity Itself cannot be ὄσια and principles. Recall, however, that the context is an investigation into the principles and causes of these things qua beings (Meta. 4.1, 6.1), and that (if our interpretation is correct) the phenomenon that ὄσια is supposed to explain is precisely the being and unity of things.

96 Meta. 1.7.988a34-5; cf. Meta. 1.10. By contrast, Aristotle gives Plato credit for coming closest to an adequate account of ὄσια (988a35-6).
understand being and unity not in terms of their material or moving causes but rather in terms of ousia in its causal sense.97

The solution to the eleventh aporia in Meta. 7.16 thus indicates that Aristotle’s project in the Metaphysics is an investigation into the causes of a phenomenon. In particular, our text rules out the interpretation according to which metaphysics is not itself a causal investigation but rather a second-order investigation into the nature of causality.98 In Meta. 10.1 Aristotle carefully distinguishes between inquiring what the elements and causes of things actually are and inquiring into the definition or essence of a cause and an element, between what we would call first-order and second-order questions.99 In Meta. 7.16 he indicates that it is the first-order investigation that he has in mind: we are not looking for the essence of an element or a principle (to στοιχεῖον εἴναι ὁ ἀρχή), 1040b19 but we rather ask what the principles of being actually are, in order to reduce it to something “more known” (b19-21).100 Like the natural scientists, Aristotle is seeking a causal explanation of a phenomenon. The difference between Aristotle’s investigation and theirs is not that his is second-order, but rather that he has explicitly recognized being as a phenomenon and primary ousia as the nature in terms of which it is to be understood and explained.

What, then, of being and unity themselves? In Meta. 10.2 Aristotle indicates that they are mere predicates:

If indeed no universal can be ousia, as we have stated in our discussion of ousia and being, and if being itself cannot exist as ousia and something which is one apart from the many [ἐν τί παρὰ τὰ πόλλα] (for it is common to all) but only as an

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97 It is probably not coincidental that, having eliminated the other candidates in Meta. 7.13-16, Aristotle immediately introduces form and ousia as a principle and αἰτίαν τοῦ εἴναι in 7.17.
98 See Irwin and Leszl, note 1 above.
99 Meta. 10.1.1052b7-14. Aristotle refers only to giving the definition (ὅρον) of “cause” and “element,” but the wider context (1052b1-20) indicates that an inquiry into something’s definition is here also an inquiry into its essence.

The distinction between “first-order” and “second-order” inquiries is not Aristotle’s own, but an investigation into the definition of a cause is the closest thing in Aristotle to what we would think of as a second-order inquiry.
100 Aristotle does not frame the options quite in the same way that Leszl and Irwin do: he seems to be addressing the notion that one could find the ousiaic principle of things in the essences of “element” and “principle.” That Aristotle does not take this possibility very seriously is suggested by his comment at 1040b21-2 that, if anything of this sort, it is being and unity that are ousia.
predicate \( \kappa \alpha \tau \eta \gamma \omicron \rho \eta \mu \alpha \), then neither can unity be \( \omicron \sigma \iota \alpha \); for “being” and “unity” are predicated most universally and of all things. (1053b16-21)

No universal can be \( \omicron \sigma \iota \alpha \); therefore, being cannot be \( \omicron \sigma \iota \alpha \) but is only a predicate.

Since unity is coextensive with being, the same conclusion applies to unity. The “discussion of \( \omicron \sigma \iota \alpha \) and being” to which Aristotle refers is his rejection of the universal as a candidate for \( \omicron \sigma \iota \alpha \) in Meta. 7.13. Universals in general, and being and unity in particular, are not some “one apart from the many” but mere predicates, \( \kappa \alpha \tau \eta \gamma \omicron \rho \eta \mu \alpha \).\(^{101}\) With this statement Aristotle is not claiming that being and unity are nonsubstantial attributes: the word \( \kappa \alpha \tau \eta \gamma \omicron \rho \eta \mu \alpha \) is used to refer to any predicate, whether substantial or accidental.\(^{102}\) The universals “being” and “one” cannot be \( \omicron \sigma \iota \alpha \) for the same reason that the universals “man” and “animal” cannot be \( \omicron \sigma \iota \alpha \).

In Meta. 10.2 Aristotle is simply applying to unity a conclusion for anything predicated universally. Let us briefly go back to Meta. 7.13 to outline how Aristotle reaches this conclusion. The universal is a candidate for \( \omicron \sigma \iota \alpha \) because some think that the universal is a cause (\( \alpha \iota \tau \iota \iota \) and a principle (\( \delta \rho \chi \iota \)\) to the highest degree; in other words, the sense of \( \omicron \sigma \iota \alpha \) for which the universal is a possible candidate is \( \omicron \sigma \iota \alpha \) in its causal sense.\(^{103}\) Aristotle thinks this cannot be so. Resorting for a moment to extremely

\(^{101}\) Cf. APo. 1.11.77a5-7. It is not necessary that there be \( \delta \nu \ \tau \iota \ \pi \alpha \rho \alpha \ \tau \alpha \ \pi \omicron \lambda \lambda \alpha \) but only that it be true to say the same thing about many individuals. The question that seems to interest Aristotle in the Metaphysics, but not in the Posterior Analytics, is why “saying the same thing about many individuals” is possible.

\(^{102}\) According to an electronic search of the TLG, Aristotle uses forms of the word \( \kappa \alpha \tau \eta \gamma \omicron \rho \eta \mu \alpha \) only five times in the corpus (the other four uses are at Di 11.20b32, SE 7.169b5, Phys. 3.1.201a1, Meta. 7.1.1028a33—in the last two cases \( \kappa \alpha \tau \eta \gamma \omicron \rho \eta \mu \alpha \) seems to be synonymous with \( \kappa \alpha \tau \eta \gamma \omicron \rho \omicron \iota \alpha \iota \)). In its other four appearances the word is used to refer to anything that might be predicated of a subject, whether in the category of substance or one of the other nine categories. Thus Berti (1979: 89 and n. 2) is at least misleading in using this passage as evidence for the statement that “l'être et l'un ne sont pas des substances, mais des attributs” (emphasis added). Berti does not actually further develop the contrast in this way, but rather takes the nonsubstantiality of being to imply that being and unity refer to a plurality of genera, no one of which is more properly being than any other (p. 99).

\(^{103}\) “The universal, too, is thought by some to be a cause (\( \alpha \iota \tau \iota \iota \)) in the highest degree and to be a principle (\( \delta \rho \chi \iota \)), so let us discuss also the universal; for it seems impossible that anything predicated universally could be \( \omicron \sigma \iota \alpha \).” Meta. 7.13.1038b6-9 (cf. b3), reading “anything predicated universally” for \( \omicron \sigma \iota \alpha \) \( \tau \omicron \iota \) \( \kappa \alpha \theta \omicron \iota \omicron \chi \omicron \) \( \lambda \epsilon \gamma \omicron \mu \epsilon \omicron \nu \) rather than “any of the so-called ‘universals’.” In their commentary on this passage Frede and Patzig (1988: 243-4) recognize that it is in its capacity as a principle that Aristotle is interested in \( \omicron \sigma \iota \alpha \), though here they seem to conceive of \( \omicron \sigma \iota \alpha \) mainly as a principle for nonsubstantial being. Bostock (1994: 191) refers to Meta. 3 but otherwise does not comment on why the universal should be considered a cause.
broad brushstrokes, the crux of the matter appears to be the fact that nothing can both be universal and meet the criteria that Aristotle sets out for oσια in Meta. 7.3. In order to be oσια, something must at least in some sense be separate and a "this" (τοδέ τι). The universal cannot be oσια because it would have to be predicated of many things, but nothing common to many things can be a "this" (1038b34-1039a2). Aristotle's first argument in Meta. 7.13 uses the same principle that Aristotle uses in Meta. 7.16 to reject the view that being and unity are the oσια of things: that of which the oσια is one is itself one.

Aristotle's approach to the question whether being and unity are oσια in the central books is thus different from, though compatible with, his approach in the aporias. In both the seventh and eleventh aporias Aristotle argues ad hominem against his predecessors' accounts of being and unity, attempting to show that they have unacceptable Parmenidean implications. By contrast, the rejection of being and unity as oσια in Meta. 7.16 is based on the impossibility of any universal's being oσια. In Meta. 3.4 Aristotle argues dialectically, showing that the Platonic and Pythagorean positions (at least as Aristotle interprets them) have absurd implications; in Meta. 7.13 and 7.16 shows that universals cannot be oσια using his principles, namely, the criteria for something's being oσια.

104 Meta. 7.3.1029a27-30. The translation and meaning of τοδέ τι is contested; for a brief discussion of the issues see Graham (1987: 235-9).
105 Meta. 7.13.1038b34-1039a2; cf. 3.6.1003a7-9.
106 Meta. 7.13.1038a9-15, 7.16.1040b17 (quoted immediately above); cf. Meta. 3.4.999b20-1 quoted in our discussion of the eighth aporia. Notice that 3.4 and 7.16 seem to indicate that, pace Lear (1987: 164-6), Aristotle is referring not only to the unity of the species but also to numerical unity. Lear is right in thinking that Aristotle is rejecting the Platonic approach that maintains that the highest principles must be the widest universals, but does not recognize that Aristotle seems to think the Platonic position is inevitable once one admits that species-level universals are principles (cf. Meta. 3.3.999a19-23, discussed p. 169 above).
107 This is consistent with Aristotle's position while developing the eleventh aporia: Aristotle argues in Meta. 3.4 that if being and unity are not oσια no universal will be oσια (1001a19-27). Cf. Meta. 3.3.999a19-23: if any genera are principles it will be the widest genera, hence being and unity. Notice, however, that whereas the eleventh aporia abstracts from the question of whether the oσια of things must themselves be substances, Meta. 7.13 and 7.16 insist that they must meet the criteria for oσια at least in some sense.
The last three aporias (aporias 12 through 14) may be dealt with more summarily. They are discussed in *Meta* 3.5-6, in the reverse order to that in which they are raised in 3.1. We shall follow the ordering of *Meta* 3.1. The twelfth aporia (3.6.1003a5-17) asks whether the principles are universal or individual. If the principles are individual, there will be no scientific knowledge, but if they are universal they will be not be ὁσιαί since to be an ὁσιαί is to be a "this" (τόδε τι, 1003a9) and universals are only "suches." The necessity for scientific knowledge of something apart from individuals and common to all of them has already been raised in the eighth aporia (999a26-9), but Platonic conceptions of this kind of principle have been criticized throughout the aporias. As with the eighth and ninth aporias, the solution seems to require something that is neither simply universal nor simply particular.

The thirteenth aporia (3.6.1002b32-a5) asks whether the principles exist potentially or in some other way. The aporia is generated by the view that potency is prior to actuality, since something can be in potency without being actualized (1003a1-2). The aporia is solved in *Meta* 9.8 by rejecting the view that potency is unqualifiedly prior in any significant way. Finally the fourteenth aporia (*Meta* 3.5) asks whether mathematical should be considered the ὁσιαί of things, apparently appealing to the priority in λόγος of mathematical to the physical substances to which they belong. In *Meta* 13.2 Aristotle rejects this view on the grounds that logical priority does not entail real priority. In the discussion of the aporia Aristotle brings various arguments against this view without mentioning the eventual solution. The discussion of the Forms at the beginning of *Meta* 3.6 (1002b12-32) does not obviously belong to any of the aporias listed in 3.1. It may be an appendix to Aristotle's discussion of the fourteenth aporia, or perhaps a reconsideration of the fourth aporia in light of considerations raised in the discussion of the ninth.108

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108 The latter view is Apostle's (1966: comm. 1 ad *Meta* 3.6); Mansion (1955: 147) treats it as a separate aporia. What suggests a continuation of the fourteenth aporia is the fact that the question raised is whether Forms should be posited in addition to mathematical.
IX

The examination of the aporias in this chapter confirms our fourth chapter's conclusions about the role of dialectic in Meta. Aristotle's procedure in this book is dialectical, but he does not use dialectic to establish positive doctrine about the principles. Aristotle raises difficulties, often about the doctrines of his predecessors, and raises objections that seem fatal to at least some of them. On the other hand Aristotle never uses a dialectical argument to establish an account of the principles or solve a problem. This is well-illustrated by Aristotle's approach in the sixth and seventh aporias. The sixth aporia asks which of two possible candidates (the genera or the material constituents) are principles. The two candidates come from a variety of sources, including both Aristotle's Platonic and pre-Socratic predecessors and his own accounts of definition and motion. The apparent necessity of deciding between these candidates generates a dialectical problem. Unlike the dialectician described in the Topics, however, Aristotle does not proceed to amass ἐνδοξα to persuade an interlocutor to accept one or the other solution. If there is any definitive use of dialectic in the two aporias, it is in its peirastic capacity to refute the candidacy of the genus. This does not, however, establish the alternative account according to which the elements are the principles. The eventual solution to the problem is to recognize that a different account of the principles is necessary.

The refusal to use dialectic to establish solutions is in evidence throughout the aporias. Aristotle will leave a problem unresolved here even if its solution is evident from what he says in the central books. In cases where the aporias do point strongly to one solution (as in the case of the eighth and tenth aporias) Aristotle generally also raises problems for that solution. The fact that dialectic is not used to solve problems further means that characteristically Aristotelian principles—in particular, the unmoved mover and

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109 The material components receive less criticism, perhaps because (1) Aristotle does believe they are principles of a sort but (2) their prima facie case for being principles of being is not very compelling.

110 It is noteworthy that "principle" and "element" are used interchangeably in the sixth aporia, thereby suggesting an account where all principles are elements. (The elements are divided into genera and material constituents in Meta. 5.3.1014b6-15.) The solution to the aporia, we shall see, is the introduction of a principle that is not an element: Meta. 7.17.1041b25ff., 8.3.1043b10-14. However, there is no mention of this principle—separate and immanent form—in Meta. 3.3.

111 Meta. 3.4.999b17-24, 1000b31-2.
the Aristotelian conception of form as ὀόσια, ἐνέργεια, and σκοπον τοῦ εἶναι—are almost entirely absent from Meta. 3.3-6.\textsuperscript{112} Where form does appear—in the eighth aporia—it appears to be introduced on the basis of considerations in Aristotelian physics. Dialectic is used in its capacity as ἔξτασις and πειραστική: it is not used to establish truths about the principles.\textsuperscript{113}

X

In this chapter we have considered the methodological texts and preliminary aporetic discussions that belong to the study of the principles and causes of being. In Meta. 6.1, Aristotle proposes as one of the distinguishing marks of the science of being an investigation into the ἐι ἔστι of substances (Meta. 6.1.1025b16-18). Superficially, this may appear to be nothing very different from the investigation into ἐι ἔστι already implied by the mention of the ἐι ἔστι question among the four questions in APo. 2.1. As we have seen, however, the APo. investigation into the ἐι ἔστι of substances is not pursued past APo. 2.2: this suggests that although Aristotle recognized that there must be some kind of causal account of substances, he was unable to provide an account satisfactory to him using resources from the Posterior Analytics. The sixth and seventh aporias of Meta. 3 suggest several reasons why these resources proved insufficient for Aristotle’s purposes.

The role of the sixth and seventh aporias suggest an explanation for the presence of the aporias about the principles taken as a whole. The investigation into the being of substances is not nearly as straightforward as Aristotle’s treatment in APo. 2.1-2 might have suggested. The aporias indicate the various reasons why this is true. There are reasons to believe the principles of substances to be at once universal and particular, one in species and one in number. An adequate account of the principles of substance must satisfy these apparently contradictory demands. The presence of both eternal and perishable phenomena suggests that more than one kind of principle is necessary for the explanation of all things, and possibly a distinction between a science of being and a

\textsuperscript{112} The dialectical character of the discussion explains many characteristics that some (e.g., Leszl 1975: 141-3) take to be evidence for an early date for these books.
\textsuperscript{113} On the scientific use of dialectic in this capacity see sections III and IV of chapter 4, above.
science of motion. Finally, as the eleventh aporia shows, it is necessary to determine what one means by the being of something before giving an account of the principles of being.

As Ross’s and Apostle’s lists of the aporias indicate, the issues raised in each of the aporias about the principles receive treatment somewhere in the *Metaphysics*, many of them in the central books.114 Aristotle does not usually advertise the fact that a given discussion is the solution to an aporia: he mentions this explicitly only once, in his solution to the fifth aporia at *Meta.* 4.2.1004a33-4. In some cases Aristotle phrases his views in the same terms used to raise the aporia; in other cases it is possible to infer Aristotle’s position on the question from what he does say.115 There is no reason to deny that the *Metaphysics* concerns itself directly with the problems raised in these aporias.

The aporias thus serve to further characterize the investigation into the principles of being and substance that Aristotle announces in *Meta.* 6.1. Many of the aporias center around problems of the sort that led Plato to postulate the Forms: the sixth, seventh, eighth, ninth, eleventh, and twelfth aporias are all in one way or another concerned with principles of scientific intelligibility in things. This is consistent with the second criterion by which Aristotle distinguishes metaphysics from the special sciences in *Meta.* 6.1: the science of being will somehow investigate τι ἕστιν (1025b10-14).116 We should thus expect that immanent form should figure as a principle and cause of being in Aristotle’s

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114 Ross 1924: i.222-3; Apostle 1966: 272-3. Irwin seems to overlook this fact.
115 It is clear from 7.14 that the genera are not principles (aporias 6 and 7). *Meta.* 7.17 and 8.3 assert the necessity of something apart from the matter (aporia 8) and *Meta.* 12.7 asserts the existence of a wholly separate substance (aporias 4 and 8). *Meta.* 12.5 and 13.10 attempt to solve aporia 9. The tenth aporia does not receive an explicit treatment (though cf. 12.4-5), although it is clear that matter is a principle in destructible but not in indestructible things. The eleventh aporia is answered explicitly at 7.16. *Meta.* 7.13 shows that universals cannot be principles (aporia 12), though the solution to the problem of scientific knowledge is less clear (*Meta.* 12.5 and 13.10). The priority of potentiality is rejected in *Meta.* 9.8 and again at *Meta.* 12.6-7 (aporia 13). It is shown that the mathematical is neither ὁμοιότατον nor principles (aporia 14) in *Meta.* 13.
116 In being concerned primarily with principles of intelligibility book 3 has much more in common with the central books of the *Metaphysics* than is sometimes realized. Irwin, for instance, sees a progression from a concern with suprasensible reality in the aporias to a concern with sensible substance in the central books (1988: 166-8). In the aporias, however, Aristotle is concerned with suprasensible realities primarily in their capacity as principles, in particular principles of intelligibility, of sensible realities. Notice that on our account Irwin is right in seeing an emphasis on the conditions for scientific intelligibility; only not in the way and for the reasons Irwin thinks.

For the same reason, the aporias should not be used as evidence for an exclusively theological interpretation of the *Metaphysics*: the need for a principle of intelligibility raises problems that are explicitly addressed in *Meta.* 7-9 (and 12.1-5), and not in *Meta.* 12.6-10.
substantive treatments of these issues. The ninth and tenth aporias seem to be pointing to the necessity of introducing Aristotle's god as an unqualifiedly eternal principle that is one in number, although it is far from clear what role such a principle will play in a science of being.

In chapter 3, we saw Aristotle introduce metaphysics as a science of being. Metaphysics thus follows the demands of the Posterior Analytics in studying the principles and attributes of a specific nature. However, being is not the sort of phenomenon to be easily characterized, let alone explained. An attempt to identify the principles of being requires that one first identify what it is whose principles one is seeking. In Meta. 4.2, πρὸς ἐν equivocity is used to identify substance as the nature whose principles and causes are sought in the science of being (1003b16-19). Our texts in Meta. 6.1 and Meta. 3.3-6 appear to allow a further precision of this nature: the study of substantiality is at least in part of a study of τι ἐστι and scientific intelligibility. To explain the τι ἐστι of a substance, Aristotle implies, is (at least) to explain why it is something. The passages discussed in this chapter thus provide hints as to the nature of the explanandum in the science of being. We shall argue in our next chapter that in identifying the science of being with first philosophy Aristotle is indicating which entities will be primary beings and the principles and causes for this explanandum.
Chapter 7
The Science of Being and First Philosophy

In our last chapter we introduced the study of the principles and causes of being as a study of the principles and causes of the substantiality of substances. We saw that, concretely, this appears to amount at least in part to a study of the causes of intelligibility in substances, that is, the causes of τι ἐστι. We saw Aristotle reject one explanation of intelligibility in rejecting the generic account of the principles in Meta 3.3, and we saw tentative hints in Meta 3.4 that Aristotle is attempting to replace this account with one according to which the principles of being and substantiality are to be identified with the unmoved τέλη of motion and generation. Nevertheless, the texts we considered did not provide an explicit account of the nature and causes of substantiality.

At the end of Meta 6.1, Aristotle identifies the science of being qua being with the science of unmoved entities, first philosophy. While the identification promises to shed light on Aristotle’s conception of the nature and principles of being if the reasoning behind the identification is understood, Aristotle’s reasons for making the identification are hardly transparent. Our tasks in this chapter are thus to identify the objects of first philosophy and then to attempt to make intelligible Aristotle’s identification of first philosophy with the science of being.

In determining what objects Aristotle regards as belonging to first philosophy, we shall first attempt to do so independently of its identification with the science of being. Most of Aristotle’s references to first philosophy make no mention of a science of being: first philosophy is distinguished from physics in its capacity as the study of unmoved entities, without the additional suggestion that the study of unmoved entities is also somehow the study of the nature and principles of being.¹ It is clear from the outset that

¹ As Irwin points out (1988: 538 n. 2). Some commentators (e.g., Rist 1989) treat “metaphysics” and “first philosophy” as simply two words referring to the same discipline. This is confusing, in that “metaphysics” is a post-Aristotelian coinage and is ambiguous between the science of being and first philosophy. There is
Aristotle's god, being unqualifiedly eternal and unmoved, will be included among the objects of first philosophy. In what follows we shall be concerned to determine whether anything apart from unqualifiedly separate form is an object of first philosophy. We shall argue that Aristotle also regards something that is only qualifiedly separate and unmoved, immanent form, as an object of first philosophy. Having established this, we shall attempt to make intelligible the identification of first philosophy and the science of being by appealing to the hypothesis that it is in the objects of first philosophy that the nature and principles of being are to be found. The implication of this identification is thus that the nature and principles of being are found in both immanent and separate form.

I

For Aristotle himself as for the later Aristotelian tradition, the task of characterizing first philosophy is first and foremost a matter of distinguishing it from physics. In the tradition, the question has often taken the form of an inquiry into the relation between Aristotle's two mature proofs for the existence of an unmoved mover, those in Phys. 8 and Meta. 12. As early as Alexander, the appearance of two proofs for the existence of god in two different disciplines, physics and "metaphysics," provided a source for controversies about the relation between the two arguments and the sciences to which they belong. Averroes vigorously takes up these controversies in his commentary, where he goes to some length to reject Alexander's and Avicenna's accounts of this.
relation. These controversies are both aggravated and made less useful for our purposes by the commentators' common assumption that Meta. 12 is intended to be part of a science of being qua being. It is thus most useful to start our discussion elsewhere.

As Anton Pegis points out, one of the most helpful passages for understanding the distinction between physics and first philosophy is the Phys. 2.7 passage we quoted in our treatment of the eighth aporia.

Movers that are not movable are not causes within physics, for they move without having in themselves motion or a principle of motion but are immovable [ἀκίνητα]. Accordingly there are three disciplines: one concerning immovable things [ἀκίνητον], a second concerning things which are in motion but are indestructible, and a third concerning destructible things. . . . Now the principles that cause physical motion are two: One of these is not physical, for it has no principle of motion in itself, and such is that which moves another without itself being moved, as in the case of that which is completely immovable and primary among all; and such is also the whatness or the form [τὸ τί ἐστιν καὶ ἡ μορφή], for this is the end [τέλος] or final cause. (198a28-b4)

This passage occurs as part of Aristotle's account of the relation between the four causes. The physicist must know all four causes and be able to use them in physical explanation (φυσικός, 198a23), that is, the explanation of motion and generation (cf. 2.3.194b20-2).

Three of the causes, Aristotle writes, "often amount to one," though this happens in different ways. The form or whatness (τί ἐστι) and the final cause are wholly identical, whereas the efficient cause is the same in kind (τῷ εἰδέει) as these (198a24-7). The efficient cause cannot be wholly identical to the other two because it moves by being itself moved (a27). This remark is somewhat puzzling, and is in fact often taken to mean rather

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5 See Genequand 1984: 12-23. It is believed that Averroes cites from a non-extant genuine commentary by Alexander. The extant commentary once attributed to Alexander is possibly the work of Michael of Ephesus (Genequand, p. 7 n. 7). Recent contributions to the debate include Paulus 1933, Pegis 1973, Gerson 1990, and Lang 1992 and 1993.

6 Pegis 1973: 98. Rist (1989: 129, 231) overlooks this passage and Phys. 2.2.194b13-14 (quoted below) in maintaining that Phys. 2-7 shows no evidence of acquaintance with "metaphysics" (i.e., in context, first philosophy). The latter passage is the last sentence of 2.2 and might easily be a later addition, but it is more difficult to make this case for 2.7 (pace Solmsen 1960: 113 n. 83). On the other hand, Phys. 2.7 as a whole may be later than the rest of book 2: it interrupts a logical progression from 2.4-6 to 2.8-9 and much of it repeats material from 2.3. Furthermore, the suggestion that efficient causes are necessarily moved movers (198a27) does not seem to be reflected in Phys. 8.
that the efficient cause is identical to its effect only in kind. 7 But it is more consistent with what Aristotle actually writes here and in the immediate context to read him as making a different point. Since an efficient cause is a moved mover and thus must have matter, it cannot be wholly identical to the final cause, which is (as Aristotle has just said) the thing’s form. 8 The form and the efficient cause are the same in kind, in the sense that the efficient cause is a human being and the form is the form of a human being. Nevertheless a form taken in itself does not have matter and is thus not identical to the composite. Not themselves having motion or a principle of motion, Aristotle goes on, the formal and final causes in themselves are studied in another science (a28-9 with b1-4, both quoted above). He implies without positively stating that the science in question is first philosophy.

Aristotle has thus identified three kinds of physical cause. Matter is the substrate for motion, the form is the final cause, and another form-matter composite of the same kind serves as the efficient cause (a31-3). 9 Of these the final and efficient causes are both movers, and both move ϕυσικῶς (a35-b1). Only the latter, however, is a moved mover, and so of the movers only the efficient cause is itself explained in physics. A mover that is not moved is a principle in physics but is not itself explained in physics: such principles include both the unqualifiedly unmoved mover (Aristotle’s god) and the immanent forms which serve as final causes in the generation of sensible substances (b2-4). 10 Immanent form in itself is unmoved and thus not itself studied in physics: the implication is that both immanent and separate form are objects of first philosophy.

7 So Ross (1935: 526), following Themistius in seeing the passage as making the same point as Meta. 9.8.1049b27-9.
8 On our interpretation, Aristotle’s recalling the point that “man generates man” (a26-7) indicates not precisely that the parent and child are the same in kind but rather that the parent is the same in kind as the form of the child that also serves as the final cause. Note that this passage also implies that the form of the parent is not the efficient cause of the generation of the offspring, though it may be the efficient cause of the actions of the parent considered as a matter-form composite. This is consistent with what Aristotle writes in DA 2.4: the form is the ὑπεράνων of the body, and the efficient cause of various kinds of motion but not of generation (415b15-28).
9 Notice the implication that the form is a cause only in its capacity as a τέλος. This may help to explain Aristotle’s puzzling remark at the beginning of 2.7 that appears to restrict formal causality to immovable things (198a16-17). When it comes to explaining motion and generation, the form acts only as a final cause.
10 This is recognized both by Ross (1935: 527) and by Charlton (1970: 112-13), although the latter legitimately finds the passage puzzling. Mansion (1958: 166-7) fails to account for this passage when he writes that the physics assigns to first philosophy only the study of the unmoved mover.
The *Phys.* 2.7 passage is helpful for the interpretation of several other *Physics* passages where Aristotle explicitly makes a distinction between physics and first philosophy. The first of these comes at the end of *Phys.* 1.9. Aristotle has just distinguished the ways in which the substrate for generation and destruction is and is not destroyed, and moves on to consider the question for the formal cause. The passage is rife with technical terminology and is worth quoting in Greek:

> περὶ δὲ τῆς κατὰ τὸ εἴδος ἀρχῆς, πότερον μία ἡ πολλαὶ καὶ τίς ἡ τίνες εἰσίν, δι’ ἀκριβείας τῆς πρώτης φιλοσοφίας ἐργον διορίσαι, ὡστ’ εἰς ἑκείνον τὸν καὶ ἄποκείσθω. περὶ δὲ τῶν φυσικῶν καὶ φθαρτῶν εἰδῶν ἐν τοῖς ὅστερον δείκνυμένοις ἐροῦμεν. (192a34-b2)

The passage is somewhat ambiguous. The first sentence leads us to expect that Aristotle is handing over the treatment of the formal principle (ἡ κατὰ τὸ εἴδος ἀρχῆ) in sensible substances to first philosophy, which is what we should expect from *Phys.* 2.7.\(^\text{11}\) Moreover, the questions that Aristotle is deferring here are precisely those that Aristotle raises in *Meta.* 3 and addresses in *Meta.* 7-8: what kind of thing is the formal principle and is it one or many?\(^\text{12}\) Notice also Aristotle’s mention of accuracy (ἀκριβεία): it is characteristic for Aristotle to use principles in one investigation whose “accurate” treatment belongs to a different investigation.\(^\text{13}\) The implication of the first sentence is that form is used in physics in its capacity as a τέλος of motion, but that the treatment of form in itself belongs to another discipline.

The second sentence, however, gives reason for doubt: “natural and destructible εἰδῆ,” it says, are properly the subject matter of physics. At least one commentator has taken this to refer to the forms of sensible substances, with the implication that the ἀρχὴ κατὰ τὸ εἴδος must refer only to Aristotle’s god.\(^\text{14}\) This is inconsistent with the context, however. Aristotle is concerned with whether the principles of change in sensible things

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\(^{11}\) Though it should be noted that “form” is used in *Phys.* 1.7-9 not only for substantial form but in general for the terminus of any change. Aristotle’s usage in 2.7 is more restrictive. The *Meta.* does not really give an adequate account of the extent to which nonsubstantial instances of being have form-like or essence-like qualities. See chapter 3, pp. 87-9 above, for a brief discussion.

\(^{12}\) The τῆς ἐστί question is explicitly raised and to some extent answered in *Meta.* 8.2 (1042b10-11: it is necessary to determine the τῆς ἐστί of the actuality (=form) of sensible substances).

\(^{13}\) On this use of ἀκριβεία see Anagnostopoulos 1994: 136-9.

are destructible or indestructible, and has just considered two of the principles, matter and privation. In context the ἄρχη κατὰ τὸ εἴδος can refer only to the third principle. Aristotle’s announcement that he will defer the treatment of this principle is matched by what he actually does: like the other questions that Aristotle defers here, discussion of the destructibility of immanent form takes place not in the Physics but in the Metaphysics.¹⁵ If so, “natural and destructible εἴδη” cannot refer specifically to the forms of sensible substances. The context rather seems to demand a nontechnical rendering of εἴδος as “species” or “kind.”¹⁶ Taken in itself rather than as a τέλος of motion and generation, immanent form is studied in first philosophy.

The last important Physics passage is Aristotle’s account in Phys. 2.2 of the objects of the physicist’s science. The structure of the chapter is not always entirely clear: it is perhaps best seen as presenting two different arguments, the one defining Aristotle’s position against Platonism (193b22-194a15) and the other against pre-Socratic materialism (194a15-b15). It is the second argument that is of interest for us. Here Aristotle considers the question to what extent the physicist should be concerned with the form and to what extent with the matter, since these are both φύσεις. Aristotle argues by analogy with the arts (which “imitate” nature, a21-2) that the physicist must know both form and matter up to a point (μέχρι τού, 194a23). The physicist must know the form in its capacity as a τέλος and the matter to the extent that it exists for the sake of that τέλος (a27-30).

Aristotle reiterates this point in the chapter’s conclusion:

To what extent [μέχρι δὴ πόσου] should the physicist understand the form [εἴδος] and whatness [τί ἐστιν]? Up to a point, just as the doctor understands sinews and the smith understands bronze, for each of them is for the sake of something, and the physicist is concerned with what is separate in kind [χωρίστα εἴδει] but exists

¹⁵ See especially Meta. 7.7-9 and 8.2-3. If Aristotle is referring specifically to the principles discussed in 1.7-9, the unmoved mover will not be an instance of the ἄρχῃ κατὰ τὸ εἴδος. This is consistent with Aristotle’s approach in Meta. 12.3-4, where he distinguishes between the εἴδος and the unmoved mover as principles of motion (1070b30-5). Notice that according to the Meta. discussion (7.8.1033a24-b19, 8.3.1043b14-18) the forms of sensibles are destructible only in a qualified sense, which provides additional evidence against the view that φιλοσοφῶν εἴδων (192b1) refers to these forms.

¹⁶ Charlton (1970: 97-8) thinks that Aristotle is rather suggesting that we should treat individual sensible substances as themselves in some sense forms. In Phys. 2, however, the form and the composite are kept clearly distinguished; see, e.g., 193b5-6, 194a15-17. According to the first of these passages, things such as individual human beings are composites, not forms.
whether the correction is that of the original and interpretation (in Phys. 1.7 [190a16-17] shows that εἰδεῖ and λόγῳ can be used with the same meaning.) There is a possible parallel for χωριστά εἰδεῖ at Meta. 10.1.1052b17, although the text of that passage is disputed.

Some important mss. (JS) read χωριστά εἰδη ("separate forms") instead of χωριστά εἰδεῖ. Walker tells me that ms. E contains a correction from εἰδεῖ to εἰδη, though it is not clear from the microfilm whether the correction is that of the original scribe. The apparatus for εἰδη should thus read at least E'JS and possibly E'JS rather than JS (Ross). According to the principles stated in Ross's introduction (1935: 115), the agreement of E'JS would be strong evidence for the correctness of this reading. The reading is possible, although difficult, from a philosophical point of view: there is a sense in which the forms of sensible substances are separate, but it seems odd for Aristotle to be emphasizing separation at this point. If the reading is correct, it might be Aristotle's way of distinguishing these from the "natural and destructible εἰδη" mentioned at 1.9.192b1-2. If so, the distinction in these terms is peculiar to the Physics. (Note that Aristotle himself does not use εἴδος—hence neither "separate εἴδος"—to refer to god.)

Mansion 1958: 167-8 and n. 3; Apostle 1969: 209 n. 19. This also seems to have been Simplicius's interpretation (in Phys. 308.33-7).

Charlton (1970: 98) endorses a form of this thesis.
Aristotle's own words, the physicist is interested in form "up to a point." This implies that there are properties of form that physics does not concern itself with. Specifically, it is not physics' business to inquire into the τι ἐστί of things to the extent that they are separate either in λόγος or unqualifiedly: the physicist's interest in form—whether immanent or separate—ends with its role as the final cause of motion and generation. If the Phys. 2.7 and 1.9 passages are to be our guide for interpreting this one, it is clearly the second interpretation that we should prefer.21 This is also the interpretation that makes the most sense of the fact that the sentence is where it is. If the sentence is meant to refer specifically to Aristotle's god, it appears to be an abrupt and pointless changing of the subject. If, on the other hand, Aristotle is referring to separate things generally and (in context) τὰ χωρὶς τὰ εἰδεῖ in particular, the connection with what comes before is evident.22 Having just indicated up to what point the physicist is interested in the form of a sensible substance, Aristotle indicates that the study of form apart from its role in motion and generation belongs to first philosophy.

The Physics passages we have examined suggest that the objects of first philosophy should not be restricted to unqualifiedly separate form.23 The implication of these passages—especially Phys. 2.7 and 1.9—is that the forms of sensible substances have properties just as forms, and that the study of these properties at the appropriate level of accuracy belongs to first philosophy rather than to physics. Questions such as whether the formal principle of sensible substances is one or many, destructible or indestructible (or in what sense it is and in what sense it is not), are not properly physical questions, and so are deferred for consideration by another science. Passages elsewhere in the corpus that indicate that physics studies the forms of sensibles are compatible with this interpretation of the physics–first philosophy distinction: these passages never suggest that it is precisely as forms (or as separate) that physics studies them. Thus Meta. 7.11 indicates that substance in the sense of form is "in a sense" (τρόπον τινάκ) the subject of physics, but it is easy to understand this as implying exactly what Aristotle maintains in

21 Thus Phys. 2.2 defers the τι ἐστι and πῶς ἔχει questions to first philosophy, Phys. 1.9 the τι ἐστι question and questions concerning the unity or plurality of this principle. See p. 199 above.
22 On "separate in λόγος" and "separate in εἴδος," see chapter 8, pp. 284-5 and note 137 below.
23 We discuss the passage that does seem to demand this restriction (Meta. 6.1.1026a10-23), p. 206 below.
Phys. 2.2. Physics is interested in form in its capacity as a τέλος of motion and generation. A similar passage in Meta. 6.1 (1025b27-8) may be read in the same way, especially if one follows Ross's text: physics studies immanent form (i.e., οὕσιάν κατὰ τὸν λόγον) for the most part only insofar as it is not separate (ὅς οὐ χωριστὴν μόνον).\(^{24}\) Physics interests itself in form in its capacity as a principle of motion in sensible substances, that is, insofar as it is not separate from sensibles; but there are properties that belong to immanent form just in itself that are not the business of physics.

II

We have suggested that it is possible to characterize first philosophy apart from its identification with the science of being. This suggestion tends to be confirmed by the passages we have examined. Aristotle's account of the physics–first philosophy relation in these passages suggests that the role of first philosophy is nothing more or less than investigating the unmoved entities that are posited as part of the causal explanation of motion. We have concentrated up to this point on the role of immanent form in this capacity, but Phys. 2.7 indicates that the same applies in the case of separate form. We

\(^{24}\) ἡ φυσικὴ θεωρητικὴ ... καὶ περὶ οὕσιαν τὴν κατὰ τὸν λόγον ὡς ἐπὶ τὸ πολὺ ἢ ὡς οὐ χωριστὴν μόνον. With Ross and mss. ET, I read περὶ οὕσιαν τὴν κατὰ τὸν λόγον ὡς ἐπὶ τὸ πολὺ ἢ ὡς οὐ χωριστὴν μόνον (227-8), against other mss. that omit the second ὡς. This gives the following contrast: physics is concerned with things that are moved, and with things that are unmoved (i.e., οὕσια κατὰ τὸν λόγον) for the most part only to the extent that they are inseparable from (i.e., final causes of) things that are material and moved (cf. esp. Phys. 2.2 discussed pp. 200-202 above). Jaeger's reading (following Alexander), περὶ οὕσιαν τὴν κατὰ τὸν λόγον ὡς ἐπὶ τὸ πολὺ, οὐ χωριστὴν μόνον (= πλὴν οὐ χωριστὸν), has several disadvantages from a philosophical point of view. The statement that physics is for the most part concerned with οὕσιαν κατὰ τὸν λόγον (i.e., immanent form) is inconsistent with the statement that it is concerned with things that are moved (1025b26-7), since form in itself is not moved (Phys. 2.7.198a24-31, a35-4). Likewise, an unqualified assignment of immanent form to physics is inconsistent with its assignment to a different science in these Phys. 2.7 passages (cf. also 1.9 and 2.2, discussed pp. 199-202 above, where the science is explicitly identified as first philosophy). Ross points out that Alexander's reading of οὐ χωριστὴν μόνον as πλὴν οὐ χωριστὸν is grammatically "difficult," whereas Ross's reading is only stylistically awkward—which may account for the loss of the second ὡς. Ross's reading both yields a grammatically less difficult reading and makes this passage consistent with other treatments of immanent form as an object of first philosophy. (Apostle translates οὕσιαν τὴν κατὰ τὸν λόγον as not referring to form in the first place, so the issue does not arise on his translation. We have followed the more usual translation where the phrase does refer to immanent form.)

The reason for ὡς ἐπὶ τὸ πολὺ is not entirely clear. Perhaps the point is that while physics studies immanent form insofar as it is not separate, it must also study separate form as a principle of motion, and the latter cannot be studied qua not separate.
shall argue in our last chapter that *Phys.* 8 and *Meta.* 12 follow this model in their treatments of unqualifiedly separate form.\(^\text{25}\)

In *Meta.* 6.1, however, Aristotle clearly indicates that this account of the relationship between physics and first philosophy is inadequate. Although first philosophy is still characterized as the study of entities that are separate, eternal, and unmoved (1026a10-23), this study is now identified with the science of being qua being (1026a31-2). It is not the case that “first philosophy” now refers to the science of being *instead* of the study of unmoved entities: rather, the science of unmoved entities must somehow be identified with the science of being. The remainder of the chapter is concerned with the question of how and why this is so.

In *Meta.* 4.1 and the first section of *Meta.* 6.1, Aristotle characterizes metaphysics as a science of being and substance. Metaphysics will investigate the causes and attributes of a specific phenomenon, being and substantiality. It is distinguished from physics not by studying different entities, but rather by the phenomenon it studies in these entities. Metaphysics is concerned to explain the τι ἔστιν and εἰ ἔστι of substances, physics their motions and generations. Such, at any rate, is the picture we established in our discussions of these texts in chapters 3 and 6. When he comes to distinguish metaphysics from physics in latter sections of *Meta.* 6.1, however, Aristotle proceeds by first distinguishing physics from first philosophy (1025b18-1026a23) and then identifying the science of being with first philosophy (1026a23-32).\(^\text{26}\) Aristotle does not intend to imply with this that the science of being is to be reconceived as a science only of unmoved entities: first philosophy is “universal” (a30). However, the identification clearly implies that the science of being and substance is more a science of certain substances—the unmoved entities

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\(^{25}\) With Irwin (1988: 538 n. 2) I incline to the view that there was a period in Aristotle’s development when first philosophy was not identified with the science of being; although I disagree with Irwin’s minimalist interpretation of the implications of Aristotle’s mature identification of these sciences (p. 544 n. 42).

\(^{26}\) This seems to be the most natural interpretation of the progression through the chapter: the first section (1025b3-18) identifies a science of being, the second section (1025b18-1026a23) distinguishes between physics and first philosophy, and the last section (1026a23-32) uses this distinction to distinguish the science of being from physics. Leszl (1975: 344-7) argues that the second section is not part of a characterization of the science of being but rather an application of this science to establish the domains of the special sciences, i.e., physics, mathematics, and theology. This requires a wholesale reinterpretation of the last section of *Meta.* 6.1 (pp. 527-40).
studied in first philosophy—than of others. Prima facie, it is unclear both why this should be so, and how the science of substance can be a universal science of substantiality in all substances if it is in the first instance a science of unmoved substances. In what follows we shall attempt answers to both questions.

The distinction between physics and metaphysics via the distinction between physics and first philosophy follows immediately upon Aristotle's introduction to the study of the principles and causes of being at *Meta*. 6.1.1025b3-18. Aristotle has implied that, unlike the special sciences, metaphysics will have something to say about the existence of the subjects of the sciences, that is, ultimately, the existence of substances. On the other hand, it is not the case that everything there is to be said about substance is the business of metaphysics:

Now physical science, too, happens to be concerned with some genus of being (for it is concerned with such ὄστα which has in itself a principle of motion and rest), and it is clear that this science is neither practical nor productive... Thus, if every thought is practical or productive or theoretical, physics would be a theoretical science, and theoretical about such being as can be moved, and about ὄστα κατὰ τὸν λόγον [i.e., form] for the most part only as not separate. (1025b18-28)²⁷

What is necessary, in other words, is to distinguish the way in which metaphysics is a study of substance from the way in which physics is a study of substance.

As we have suggested, this is accomplished by distinguishing between the kinds of substance studied by physics and first philosophy. Physics studies the kind of substance that can be understood only if it is defined with it matter:

We must not fail to notice how the τὸ ἡν εἶναι and the λόγος of an object of physics exists, for inquiry without this leads nowhere. Now of things that are defined and their τὸ ἐστὶ, some are considered in the way that snubness exists, others in the manner in which concavity exists. These differ by the fact that “snubness” is understood with matter... but “concavity” without sensible matter. If, then, all physical things are named in a manner like the snub (as for example a nose, and eye, a face, flesh, bone, and in general an animal ...; for what is signified by the formula of each of these is not without motion but always has matter), it is clear how we must seek and define the τὸ ἐστὶ in physical things and

²⁷ On sensible ὄστα as a genus of being cf. 4.2.1004a2-6, 4.3.1005a34. I follow Ross on the text of the last sentence; see note 24 above.
why it belongs to the physicist to investigate even some part of the soul, namely, that which does not exist without matter. (1025b28-1026a6)\(^28\)

The objects of physics are the sorts of things that must be defined with matter, that is to say, sensible substances. Mathematics, Aristotle continues, investigates its objects qua immovable and separate; while its objects are immovable, they are not separate.\(^29\)

Finally, Aristotle indicates that if there is something eternal, unmoved, and separate, there will be a science of such things that is prior to both physics and mathematics, and so “first” (1026a10-16). There will thus be three sciences: physics, mathematics, and “theology” (θεολογίκή, a19). The science of separate and unmoved entities is called theology because, if the divine exists anywhere, it is in this unmoved entity or entities.

It is clear enough from Aristotle’s characterization of the object of theology—separate and unmoved entities—that what he calls “theology” here is to be identified with what he calls “first philosophy” in the physical works and in the last section of Meta. 6.1. The identification is somewhat troubling, however. The word θεολογίκή suggests a study exclusively of ὁ θεός. When the mature Aristotle uses θεός in a technical or semi-technical sense to describe an object of his own investigations, the word refers to separate form.\(^30\) If first philosophy is the same as theology, and theology is exclusively a study of separate form, then it would seem that we are wrong in taking the Physics passages we cited to indicate that first philosophy also has something to say about immanent form.

Several points may be made in support of our interpretation of these passages. Aristotle’s use of words based on the stem θεολογ- is sparing, and this (along with the parallel passage at 11.7.1064b3) is the only place in the corpus where Aristotle uses it

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\(^28\) On the phrase το τι ἐν εἶναι καὶ τῶν λόγων (1025b28-9) see chapter 8, note 39 below.

\(^29\) Meta. 6.1.1026a7-10 with a15.

\(^30\) The word is used to refer to separate form either in connection with its character as νοὸς and the object of θεωρία, or in connection with popular mythology. For the former see NE 1.6.1096a24, 10.8.1178a8-28; EE 1.8.1217b31, 8.3.1249b1+25; Meta. 1.2.983a7-10, 12.7.1072b24-30; for the latter see Meta. 12.8.1074a38-b14. The latter use is unsurprising given Aristotle’s frequent popular uses of θεός in the Ethics and Politics. (The word is used much more frequently in a popular sense or in descriptions of the views of Aristotle’s predecessors.) The technical use is different in works believed to be early: see DC 271a33, 286a9-10; GC 336b32.
with reference to his own project. We have no explicit characterization of theology other than what we can gather from Aristotle’s usage here. Aristotle’s own justification for the appellation “theology” is limited to stating that the divine (τὸ θεῖον) is found in unmoved, separate entities. While the only thing that unqualifiedly possesses the characteristics that Aristotle assigns to the objects of first philosophy is indeed separate form, to the extent that the forms of sensible substances are themselves separate, unmoved, and eternal they too may contain elements of the divine and in this sense be secondary objects of the science of divine things.  

Meta. 6.1 does not necessarily rule out the interpretation of the objects of first philosophy based on the passages we examined in the Physics.

In the last section of Meta. 6.1 Aristotle, returning to his usual terminology of “first philosophy,” argues that the science of unmoved entities is universal and to be identified with the science of being qua being.

One might raise the question whether first philosophy is universal or is concerned merely with some genus and some one nature. In the case of the mathematical sciences, their objects are not all treated in the same manner; geometry and astronomy are concerned with some nature, but universal mathematics is common to all. Accordingly, if there were no substances other than those formed by nature, physics would be the first science; but if there is an immovable substance, this [science] would be prior and would be universal in this manner, in view of the fact that it is first. And it would be the concern of this science to investigate being qua being, both what it is and what belongs to it qua being. (1026a23-32)

With these passages the last unresolved methodological aporia finds its solution. The third aporia asked whether there were one or more sciences of substances, and if more than

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31 The word θεολογική is used only three times in the whole corpus: here, in the parallel passage at 11.7, and in a fragment. The other words based on θεολογική do not fare much better: where they appear (Met. 353a35, Meta. 983b29, 1000a9, 1071b27, 1075b26, and 1091a34) they refer to the early cosmologists, who are to be contrasted with the φυσικοί (see Ross 1924: i.130).

32 Cf. Rist’s remark (1989: 243) that “form is the analogue of God in physical objects.” Judging from his quotation of Heraclitus at Ph 1.5, Aristotle appears to see something divine in the purposiveness of natural process, i.e., the fact that they are aimed at a τέλος, i.e., their form (645a16-26).

33 Lesz (1975: 529) maintains that the question whether first philosophy is universal should not be understood as asking whether or not the science of unmoved entities is universal but rather whether it is theology or a universal ontological science that should be considered first philosophy. This would require that “first philosophy” be understood not as a science of immovable entities, as it is in the middle section of 6.1 (1026a15-16) and elsewhere in the corpus, but rather as a term that could refer either to ontology or theology, depending on which criterion was adopted for “firstness.” Already difficult as a reading of 1026a23-7, it seems impossible to reconcile this interpretation with a27-32.
one, which science of substance should be pursued in the *Metaphysics* (*Meta.* 3.2.997a15-17). The answer is that there is more than one science of substance, but only one of these, the science of unmoved substances, is to be identified with the science of being. The science of unmoved substances is somehow *universal*: universal, Aristotle writes, because it is "first" (πρώτον).

The enduring puzzle of *Meta.* 6.1 is to understand how the primacy of first philosophy gives it the universality requisite for a science of being. That first philosophy is "concerned merely with some one genus and some one nature" is the conclusion that one would tend to draw from the middle section of *Meta.* 6.1, as well as from the passages we examined in the *Physics*. In what follows we shall examine four attempts to make sense of Aristotle’s identification of first philosophy with the science of being. The first three, we shall argue, are to be rejected. A fourth explanation based on πρὸς ἐν equivocity, while not wholly unproblematic, is promising and consistent with the direction suggested by Aristotle’s discussion of the aporias about the principles.

The four accounts we shall discuss are helpfully outlined in a recent article by John Thorp (1989). Thorp makes matters more difficult for Aristotle by assuming that the latter is attempting to identify theology with a science of general logic.34 Certainly it is difficult to see how theology could be identified with logic as logic is understood in the *Analytics*, for instance, and there is no evidence that Aristotle is attempting to do anything of the sort.35 Nevertheless, it remains difficult to see how the science of substance is to be identified with first philosophy even having made this correction; at first glance it is not easy to see how first philosophy enters into the characterization of the science of the καθ’ αὐτά συμβεβηκότα of being and substance that we described in chapter 5.

34 Thorp 1989: 105-6. Thorp recognizes that one might also use the terminology of "ontology" (p. 106 n. 8), but he sees these terms as essentially synonymous and prefers "logic."

35 Thorp lists among the tasks of metaphysics the study of "opposition, plurality, privation, contrariety, completeness, deduction, the law of Non-Contradiction, and the Law of the Excluded Middle." The first four are studied as *per se* πάθη of being and unity, and the last two as the principles of demonstration (see our discussion below). There is however no suggestion anywhere that metaphysics studies deduction or in general questions concerning the nature of investigation and proof: this belongs to analytics, a preliminary study which the student of metaphysics must already have mastered (*Meta.* 4.3.1005b2-5). The sense of "completeness" in which metaphysics studies it is not its logical sense (*Meta.* 5.16).
The first attempt to explain the identification, that of pseudo-Alexander, may be dismissed summarily. Pseudo-Alexander suggests that “universal” be understood not in the technical sense of scientific universality but rather as “better and more honorable” (βελτίων και τιμωτέρα). This is clearly inadequate as an answer to the specific technical question of whether first philosophy is a universal science or a special science (1026a23-5). A second solution, proposed by Vianney Décarie, initially seems more promising. According to Décarie, first philosophy is universal because everything is dependent on the causal activity of the entity it studies, the unmoved mover. The difficulty is that, while it is true that the unmoved mover is the ultimate cause of the motion and generation of all things, Décarie does not attempt to explain how all things depend on the unmoved mover for their being. The unmoved mover seems to serve as a principle for physics; it does not seem to serve as the cause of being and its καθ' αύτά υπάρχουσα. If first philosophy is to be identified with the science of being, its object should serve not just as a cause of some phenomenon found in all other entities, but precisely as the cause of the being of all other entities. On the other hand, Décarie’s solution is a helpful first attempt to replace generic univocity with causal priority as an explanation of scientific universality. The solution might be adequate if the only problem was to justify the attribution of some sort of universality to first philosophy; it is inadequate for the task of understanding how first philosophy can be a universal science of being.

The clearest and most radical statement of the third solution is advocated by Philip Merlan. On this interpretation “being qua being” refers to one of the “elements” in the uppermost sphere: thus a science of being qua being is not necessarily a universal science of a nature found in all things. It does turn out to be universal, Merlan maintains,

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37 Décarie 1961: 120-1. This is presumably inspired by *Meta.* 12.7.1072b13-14.
38 Thorp (1989: 110-13) phrases this point in terms of his own understanding of what it is for something to be, i.e., for it to be subject to the laws of logic, but the essential point is a sound one. More generally, see Gerson 1990: 134-9.
39 Otherwise put, Décarie’s interpretation could be consistent with the whole of 1026a23-32 except for the last sentence (a31-2).
40 In order to make this statement it is necessary to dissociate the conception of being qua being in *Meta.* 6.1.1026a23-32 from that earlier in *Meta.* 6.1 (1025b3-18) and in 4.1-2. According to the latter conceptions the science of being qua being is necessarily a universal science of a nature that belongs to all beings.
because being qua being is an element in all beings, in much the same way as the
subatomic particles are elements in all things. An animal is not a kind of subatomic
particle, and so the subatomic particles are not universal in the sense of being univocally
predicable genera, but the science of a particular kind of concrete entity can nevertheless
be a universal science of all beings.

This interpretation faces certain obvious difficulties. There is no evidence that
Aristotle conceives of being or substance as an element: in Meta. 7.17 the ωὐσία that is
the cause of being for something having material elements is contrasted with these
elements. If “being qua being” is not to be conceived as a material element, it is not clear
how it is to be conceived. Certainly Aristotle gives no hint that he conceives of being in
this way. A still more serious objection lies in Merlan’s characterization of “being qua
being.” For Merlan, “being qua being” in itself refers to “being as such,” which is the
element that is found in all beings. We have argued in chapter 3 that this interpretation of
“being qua being” is untenable. Aristotle’s use of the “qua” locution in the Metaphysics
indicates that it must be understood in accordance with his use of the same locution in the
Posterior Analytics: not as itself referring to the nature of being but rather to indicate that
metaphysics studies beings insofar as they share in that nature. Unless Aristotle is simply
inconsistent in his use of “being qua being” at 1026a31-2, Merlan’s interpretation must be
rejected.

Nevertheless, unlike Décarie’s, Merlan’s interpretation attempts to explain why
first philosophy might be not only universal but also a science of being. If Merlan is wrong
in thinking there is such a thing as “being as being” that is an element in all things,
nevertheless he does recognize that if first philosophy is to be the science of being, the nature studied directly in first philosophy should also be the nature of being, which should somehow be found in other things that share in the nature of being.\textsuperscript{46} In particular, if the nature of being is found in substance as opposed to nonsubstantial accidents, the nature found in the unmoved and immaterial substance should somehow also be found in other substances to the extent that they are truly substances.

III

If there is an explanation of the identification of the science of being with first philosophy, then, it must lie in the fact that the nature of being is found in the unmoved entity or entities studied in first philosophy and that these entities are the causes of the beingness of entities in which the nature of being is found derivatively. The identification of the science of being with first philosophy thus requires that there be a \( \pi\rho\circ\sigma\xi\nu \) relationship between being as it is found in entities that possess it primarily and those that possess it derivatively.

In maintaining that the nature of being is found in unmoved entities and that the science of unmoved entities is also a universal science of being, Aristotle is retaining some elements of the \textit{APo.} characterization of a science while rejecting others. We saw that in the \textit{Posterior Analytics} the univocal genus is the basis for scientific universality. Attributes belong to a subject because of the genus to which they are \( \xi\alpha\omicron\upsilon\tau\omicron\damma , \) and belong necessarily to a multiplicity of individuals because that genus can be predicated univocally of all of them. Moreover, if the genera are elements of the causal definitions of individuals, the genera should be causes of their intelligibility in individuals. If there were a genus of substance univocally predicatable of sensible and suprasensible substances, the study of this genus would be both a \textit{universal} study of substance and \textit{prior} to the special sciences of substance, since it would explain substantiality and its attributes (\textit{APo.} 1.24.85b23-86a3) in the species of substance.

\textsuperscript{46} Our treatment of \( \pi\rho\circ\sigma\xi\nu \) equivocity in chapter 3 suggested that the nonsubstantial instances do not themselves share in the nature of being: they are called beings only because of their logical dependence on something that does share in the nature of being, substance.
Let us now assume that there is some reason why the nature of ὄσία cannot be univocal among substances. If ὄσία is merely equivocal, there will be no science of substance. The way may lie open, however, for a conception of substantiality as a πρός ἐν equivocal. If so, there is still the possibility of a science of substance. The primary instance of a πρός ἐν equivocal would retain some of the characteristics of a genus: it would be the nature of substance and explain the substantiality of the secondary instances and their attributes qua substance, and so the science of the primary instance would be prior with regard to the substantiality of the secondary instances.47 The primary instance of substance is both the entity in terms of which secondary instances of substance are to be defined, and the cause of this substantiality in the secondary instances (cf. 1003b16-17). Hence it would be “first,” and universal in the sense of being first (1026a30-1). If the principles were genera, they would be prior by being univocally predicatable of their instances: Aristotle argues here that it is possible to retain priority and hence universality while jettisoning universal predication.

Why would Aristotle adopt a πρός ἐν approach to being and substance, and why would he identify the nature of being specifically in unmoved entities? Some preliminary answers to these questions are suggested by the aporias about the principles. Aristotle’s presentation of the seventh aporia shows that being cannot be a genus. The solution to this problem in Meta. 4.2 is to reconceive the science of being as a science of substance. Are there any reasons to believe that substance cannot be a genus? Although there is no explicit argument parallel to the argument for the nongeneric character of being, it may be possible to construct one. If substance is a genus and there is more than one kind of substance, the genus of substance must be speciated by differentiae. To the extent that they differentiate the genus of substance, however, there can be nothing substantial in the differentiae. The differentiae would thus have to be in some category other than substance. If this were the case, however, it would seem that all variation among substances would be

47 The fact that the primary instance of substance is the cause of its own nature in other substances, as opposed to the cause of a phenomenon studied in some other science (i.e., motion), is what crucially distinguishes our interpretation from Décarie’s.
merely accidental. Just as a generic account of being leaves us with only one being, a
generic account of substance leaves us with only one kind of substance.48

It is not clear whether Aristotle would endorse this argument; certainly there is no
mention of this kind of argument in Meta. 3.3. Aristotle’s more explicit concern seems to
be with the character of genera as principles. The sixth and seventh aporias seem to
present several good reasons why genera cannot be principles, and the ninth and twelfth
aporias add to these doubts by raising questions about the universality or particularity of
the principles. At the same time, the solution to the eleventh aporia in Meta. 7.16 indicates
that being is not itself a principle but rather the sort of thing that is to be defined and given
a causal explanation in terms of some other principle “more known” than it. In Meta. 4.2
Aristotle reduces being to substance, and indicates that the inquiry into the causes of being
is in effect an inquiry into the causes of substance (1003b16-19). This suggests that
substantiality too is to be defined and explained in terms of something more known.49
Being and substantiality requires causal explanation, but the aporias strongly suggest that
this explanation is not to be found in a genus of substance.

If the nature of substantiality cannot be a genus, what sort of thing might it be?
The opening section of Meta. 6.1 suggests that one of the explananda for a science of the
causes of being will be τι ἐστι, that is, scientific intelligibility. We might thus expect the
nature of substance to be something scientifically intelligible in its own right. Furthermore,
Aristotle’s conception of scientific knowledge both in the APo. and in the Meta. requires
that the objects of scientific knowledge be eternal: there is no unqualified knowledge or
demonstration of destructible things.50 Sensible substances are themselves destructible, but
there can be scientific knowledge of them if there is some aspect under which it can be
conceived eternally. We might thus expect the nature of substance to be something
unchanging and eternal, and the cause of the qualified eternity of sensibles.51

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48 I am leaving aside the question whether there could be a numerical plurality of such substances.
49 In other words, I take Aristotle’s statement that substantiality requires explanation to indicate that the
eleventh aporia is not resolved by simply reducing being to substance. Cf. Meta. 10.2.1053b21-4.
50 APo. 1.8.75b21-6; cf. Meta. 5.30.1025a32-3, 7.15.1039b27-1040a7. See also our discussion of the
eighth aporia in section V of chapter 6, above.
51 As we pointed out in chapter 4 (pp.129-31 above), the identification of the nature of substance with
unmoved eternal substance is further supported by Aristotle’s implication that the common axioms apply
most straightforwardly to substances that do not undergo any process of change. Meta. 4.5.1010a7-35.
In *Meta*. 4.3 Aristotle argued that the scientist who investigates the common axioms is not the physicist but the scientist who investigates "first substance" (or "primary substance": τὴν πρώτην οὐσίαν). In a passage possibly inserted into *Meta*. 4.2 (1004a2-9), Aristotle distinguishes between sciences according to the genus of being or substance that they study, first philosophy will study the first genus of substance, second philosophy the second, and so forth.\(^5^2\) *Meta*. 6.1 puts us in the position to make the identification already hinted at in *Meta*. 4.2 and 4.3: the science of being is to be identified with the science of the first genus of substance, primary οὐσία. Aristotle's hints both about the explanandum of a science of being and about the principles required for its explanation suggest an identification of this science with first philosophy. To explain the being of sensible substances is to explain the qualified presence in these substances of characteristics that belong unqualifiedly to unmoved and eternal substances.\(^5^3\)

The identification of the science of being with first philosophy allows us to confirm an interpretation suggested by the eighth aporia of *Meta*. 3. We saw there that Aristotle presented two reasons why there might be a cause that is separate or "apart from" (παρόχ) sensible individuals: first, scientific knowledge requires that there be not only individuals but also universals; and second, there must be an unmoved τέλος for motion and generation in sensible things. We suggested that the unmoved τέλος of a sensible substance—its form—might also serve as the principle of scientific intelligibility that the aporias about the principles are puzzling over. In this chapter we have seen first philosophy characterized in both ways: *Phys*. 2.7 treats the objects of first philosophy as unmoved principles of motion, *Meta*. 6.1 as the nature and principles of being. This approach is possible if, as Aristotle seems to think, the nature of being and substantiality is found in the unmoved entities originally posited as part of the explanation of motion. The

\(^{52}\) On both passages see chapter 3, pp. 92–4 above.

\(^{53}\) Irwin (1988: 544 n. 42) argues that the identification of first philosophy with the science of being qua being results from the abstraction of the "additional properties of physical and mathematical beings" from those of the object of first philosophy, leaving something that has "only the properties of being qua being," i.e., the fact of being a "persisting [subject] of properties." If it were true that the objects of first philosophy were only persisting subjects of properties, then it would be true to say that the identification of first philosophy with the science of being implied a science studying things qua persisting objects of properties. But the objects of first philosophy are not merely persisting objects of properties; they are characterized rather by immutability, eternity, separation, and (hence) unqualified intelligibility.
unmoved entities studied in first philosophy will serve not only as principles and causes of motion, but also as principles and causes of their own nature in entities that partake in it derivatively.

IV

This account of the relation between first philosophy and the science of being will serve as our hypothesis as we approach Aristotle's attempt to undertake an account of the nature and principles of being in the later books of the *Metaphysics*. Before we undertake this treatment, it is necessary to make a few additional clarifications about the issues surrounding *Meta* 6.1 and reply to some possible objections to our explanation of the identification of the science of being with first philosophy.

Let us briefly retrace our steps through the process that leads from the rejection of the view that being is a genus to the identification of the nature of being with unmoved substance. The argument that being cannot be a genus in *Meta*. 3.3 leads to the πρὸς ἐν reduction of being to substance in the first half of *Meta*. 4.2. Having made this reduction, however, Aristotle provides few clues as to how substance itself is to be understood. There is no explicit indication anywhere in *Meta*. 4.2 that substance is anything other than a genus predicated univocally of sensible and immaterial substances. *Meta*. 4.3 identifies the science of being with the study of "first substance," but does not attempt an explicit characterization of first substance nor does it indicate how the science of first substance is a science of substance generally. By the end of *Meta*. 6.1, Aristotle has identified the science of being and substance with the study of unmoved substance, but it remains unclear both why this identification is necessary and how the science of unmoved substance is a science of substance generally. We suggested that the relation between unmoved and sensible substance is based on πρὸς ἐν equivocity, but it must be admitted that there is no explicit evidence in the methodological books for a πρὸς ἐν relation between various instances of substance.34

34 But cf. *Meta*. 8.3.1043a37, 12.10.1075a18, discussed in chapter 8, pp. 282-3, and chapter 9, note 34 below.
In the absence of explicit arguments to the effect that the science of substance must be first philosophy, we looked to the aporias for arguments implying that substance cannot be a genus. We found nothing analogous to the argument that being cannot be a genus, although we saw that an argument of this sort could be constructed. What the aporias rather provide is evidence that nothing can be both a univocal genus and a principle or cause. If the nature of substance must be the cause of substantiality in substances, then the nature of substantiality must not be a genus univocally predicable of them. Substance must not be univocal: therefore, if there is a science of substance, substance must be a προς ἕνequivocal.

Does the requirement that no genus be a principle mean that everything once thought to be a genus must rather be a προς ἕνequivocal? It does not, if it is possible for there to be genera that are not principles of the things whose genera they are. If one can find some other explanation of the animality that is predicably univocally of all animals other than the genus of animality, then animality may remain a genus and a principle for demonstrating the attributes that belong ἕνατό to animality. We shall argue in our next chapter that the principle that explains the animality of animal is, indirectly, the same principle that explains its substantiality. A sensible substance’s primary ὀστό, which is identical with its form and essence, will in its capacity as the cause of being for a sensible substance also explain why that substance is intelligible as the thing it is.55 The genus, by contrast, is not a genuine principle of intelligibility. As Aristotle writes in DA 1.1, a genus such as animality is “nothing or posterior” (402b7-9).

Finally, it is necessary to explain how the two characterizations of metaphysics in Meta. 6.1 can be reconciled. Like Meta. 4.1, the first section of Meta. 6.1 specifies the object of metaphysics using the “qua” locution: metaphysics studies beings qua beings, whatever it is in every entity that makes it a being. By contrast, as we have seen, the last two sections of Meta. 6.1 appear to distinguish physics from metaphysics according to the kind of being each studies: physics studies sensible substance, metaphysics in the first instance substances that are in some sense separate from matter. It is clear enough, however, that on our interpretation sensible substances cannot be exclusively the province

55 Cf. chapter 8, pp. 262-3, 267 below.
of physics. Insofar as sensible substances are derivative instances of being and substance, metaphysics will have something to say about them.

How should this be reconciled with what Aristotle writes in Meta. 6.1? The role of the first and last sections of the chapter is relatively clear. The first section indicates the explanandum of a science of the causes of being; the last points to the entities expected to be explanatory of these explanandum, while at the same time indicating how the explanandum itself is to be conceived. In this context it is possible to see how the middle section of the chapter performs its function of distinguishing physics from metaphysics. The explanandum of physics, we learn elsewhere, is motion and its per se attributes. Like the last section of the chapter, the middle section characterizes the science it describes not so much from the point of view of the explanandum as from the point of view of its principles: motion and generation are dependent on substance (cf. Phys. 3.1.200b32-201a3) and specifically on the kind of substance that has a material principle in it. Physics will thus in a sense be a study of one kind of substance, namely, substances having matter; and will define its objects in terms of the principles that explain motion and generation. This implies that unlike definitions of objects in first philosophy or mathematics—which are separate from matter at least in thought—definitions of objects of physics will somehow include their matter. The middle section of Meta. 6.1 indicates the kinds of principles that are relevant for the explanation of motion, and thus the kinds of entities that may be studied in physics. It is compatible with the assignment of the study of the substantiality of sensible substances to metaphysics.

V

Our explanation of the identification between first philosophy and the science of substance is the last in the list of explanations discussed and rejected by Thorp. Thorp

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56 Phys. 2.3.194b17-23; Meta. 13.3.1077b227; the author of Meta. 11.4 neatly draws the contrast between the explananda of physics and metaphysics at 1061b28-30.
57 Meta. 6.1.1025b30-1026a6; cf. Meta. 7.11.1036b21-32, Phys. 2.2.193b22-194a12, DA 1.1.403a3-b19. As we pointed out in our last chapter, the criticism raised against the Platonists that they wrongly omit matter from definitions applies with equal force to the Posterior Analytics. This should not be surprising if that work, too, is to some extent modeled on the methods of proof in mathematics. See McKirahan 1992: 16-19, 133-143.
presents several arguments against this position. One of these is textual, based on a reading of a passage about universality and πρὸς έν equivocality in EE 7.2. We shall discuss this passage momentarily and argue that it does not show what Thorp thinks it does. His other two objections, however, are more philosophical. It is necessary to show, first, how first philosophy can also be a science of the attributes and axioms that belong καθ' αὐτό to being; and second, how the objects of first philosophy can be the primary referents of a πρὸς έν equivocal. Thorp argues not only that these conditions are not met in the *Metaphysics* but that Aristotle is not even attempting to meet them.

At *Meta*. 6.1.1026a30-1 Aristotle tells us that first philosophy is universal because it is primary. On our interpretation of the universality of first philosophy, first philosophy is universal and a science of being because its object—unmoved and immaterial οὐσία—is also the primary instance of a πρὸς έν equivocal, οὐσία. Against this interpretation Thorp quotes a lengthy discussion of πρὸς έν equivocality as it is applied to friendship in *EE* 7.2:

There must, then, be three kinds of friendship, not all being so named καθ' έν or as species of one genus, nor yet having the same name quite by mere accident. For all senses are related to one which is primary, just as is the case with the word "medical"; for we speak of a medical soul, body, instrument, or act, but properly the name belongs to that primarily so called. The primary is that of which the definition is contained in the definition of all secondary instances; e.g., a medical instrument is one that a medical man would use, but the definition of [e.g.] the instrument is not contained in that of "medical man." Everywhere, then, we seek for the primary. But because the universal is primary, they also take the primary to be universal [καθόλου], and this is an error. And so they are not able to do justice to all the phenomena of friendship; for since one definition will not suit all, they think there are no other friendships; but the others are friendships, only not similarly so. But they, finding the primary friendship will not suit, assuming it would be universal [καθόλου] if really primary, deny that the other friendships are really friendships. . . .

I reproduce Thorp's quotation, adding a few lines for context.58 According to Thorp, the passage indicates that the primacy of the primary instance of a πρὸς έν equivocal does not generate universality for the science of that primary instance. As in *Meta*. 4.2, the primary

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58 *EE* 1236a16-29, trans. ROT with minor modifications at a20-3. Square-bracketed insertions are my own. Thorp too follows the ROT, quoting only a16-25. My modifications do not affect the part of the text Thorp is primarily interested in (a23-5: ζητεῖται . . . ). Although the text of a23-5 itself is problematic (see Owens 1989: 128), all concerned are agreed in following the ROT for its translation.
instance of a given nature \( x \) is that by virtue of which the secondary instances are called \( x \), and they are so called by being defined in terms of the primary instance. However, Aristotle proceeds, the primary instance is not universal (καθόλου); it is a mistake to suppose that because primary friendship is friendship based on virtue that all friendships worthy of the name are of this sort (α23-5). Given this denial, how can Aristotle maintain that first philosophy is universal because it is primary?

There are several possible approaches to this passage. It is worth noting that this is not the only place in the EE where Aristotle’s remarks appear to rule out a science of being: EE 1.8.1217b25-35 is notorious for maintaining that there can be no single science of being. Many scholars date this passage to an early stage in Aristotle’s development when he rejected the possibility of a universal science of being.\(^5\) Thorp is aware of and apparently endorses this chronological approach, although he uses the NE rather than the EE as an example of this early stage.\(^6\) Thus one might argue that, although the EE passage contradicts Meta. 6.1, it is the latter that should take precedence.

In the event, it does not seem that a chronological explanation of this sort is necessary. In Meta. 4.2 Aristotle explicitly recognizes the possibility of a science of being qua being even if being is not itself “universal.” Having just shown how his predecessors reduce all phenomena to principles that are contraries, Aristotle writes:

So it is evident . . . that it belongs to one science to investigate being qua being; for all these objects [i.e., the principles just discussed] are either contraries or composed of contraries; and the principles of contraries are unity and plurality. And these belong to one science, whether they are named καθ’ ἔν or not; perhaps the truth is that they are not so named. But even if “unity” has many meanings, the other meanings are stated by being referred to the primary meaning . . . ; and [this is true] even if being or unity is not universal and the same for all things or separate [καθόλου καὶ ταύτο ἐπὶ πάντων ἠ χωριστόν], as perhaps it is not but instead some are πρὸς ἔν and others by succession [τῷ ἐφεξῆς].\(^6\)

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\(^5\) See Owen 1960, Rist 1989, and our discussion in chapter 3, pp. 84-5 above.


\( Meta. \) 4.2.1005a2-11, trans. Apostle with significant modifications to the last sentence. The syntax of the passage does not make perfect sense and several commentators (Jaeger 1957: apparatus ad loc.; and Kirwan 1993\(^2\): 85), taking both this and its somewhat repetitive character into account, suggest that a8-11 is an intrusion. Nevertheless they do not suggest that the words are not Aristotle’s.
Aristotle concedes that being and unity are not καθον εν or καθόλου, using the same terminology here as in the treatment of friendship in EE 7.2. Nevertheless there is a science of being and unity, a science that investigates being and unity universally. The fact that being and unity are not universals does not rule out a universal science of being.

The Meta. 4.2 passage thus grants everything maintained in the EE passage while still maintaining the existence of a universal science of being and unity. The EE passage is concerned with the definitions of terms and criticizes the view that because one instance of friendship is primary with regard to the others, the secondary instances should not properly be called “friendship.” No doubt Aristotle would be anxious to make the same point about being and unity: there would be no point in appealing to πρός εν equivocity to explain the universality of a science of being if this universality implied that only the primary instance could legitimately be called a being. In denying that the primary instance is universal in this sense Aristotle rejects the view that an account of friendship must include only the primary instance. In other words, it is not the case that “friendship” must be univocal. The EE passage is not concerned to deny the universality of a science of the primary instance of friendship, however. Although it is certainly not asserting the possibility of such a science, nothing there precludes the view that a science of the primary instance of a πρός εν equivocal is also somehow a universal science of all its instances.

If our reading of these passages is correct, then EE 7.2 does not necessarily present an obstacle to the identification of first philosophy with a πρός εν science of being.

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62 Cf. Meta. 4.1.1003a23-5, 4.3.1005a33-b2 (rejecting Jaeger’s emendation).
63 Thorp recognizes that his interpretation of EE 7.2 would also rule out the πρός εν science of being described in Meta. 4.1-2 (1989: 118).
64 Though it should not be concluded on this account that the secondary instances also share in the nature of friendship: here as in Meta. 4.2 πρός εν equivocity is through logical priority and posteriority.
65 Cf. Owens 1989: 129-30. Owens reads 1236a23 (“because the universal is primary...”) as referring to the primary instances of πρός εν equivocals and thus as indicating the primary instances may be called πρός εν universals. This commits Owens to the difficult position that Aristotle is using καθόλου in two incompatible senses at a23-4: “because the universal [i.e., primary instance] is primary, they also take the primary to universal [i.e., univocal].” This difficult reading is not required if the first καθόλου is taken to refer to univocal genera, which are primary in the explanation of attributes that belong ή αυτο to them (APo. 1.24.85b23-7). In this case the sentence could be paraphrased as follows: “Because the genus that is predicated univocally of all its instances is primary, people wrongly assume that all kinds of priority are due to generic univocity.” This would avoid the difficulties in Owens’s rendering. Certainly Aristotle does not use the terminology of a "πρός εν universal" to refer to the primary instances of being and unity in the Metaphysics. It is the science of being, not the primary instance itself, that is called universal.
qua being. This, however, is only the least serious of Thorp's three objections. Let us consider the other two. The first is in effect an objection against any attempt to make first philosophy a universal science of being. It is unclear why first philosophy should also undertake the tasks that Aristotle assigns to metaphysics in *Meta.* 4.2-3—the inquiry into the per se attributes of being and the common axioms—tasks that a contemporary analytic philosopher might reasonably expect to belong to logic or general ontology. The second is aimed precisely at the account of πρὸς ἔννοιαν equivocality required to identify the science of being with first philosophy, maintaining that the primary referent of such a relation could not be god.

What gives plausibility to the first of these latter two objections is the fact that Aristotelian metaphysics does unquestionably study many things that could be objects of a general logic or ontology. If one considers the explanatory structure according to which Aristotle makes these things the object of one science, however, it becomes clear that the structure he envisages for the science of being is fundamentally different from that of logic or general ontology. In particular, metaphysics undertakes the tasks assigned to it in *Meta.* 4.2-3 because they belong to a study of *substance.* This is in evidence as early as the aporias: the second aporia asks whether the science of substance is also the science of the axioms (a formulation repeated at the opening of *Meta.* 4.3); the fifth asks whether the science that is being sought is a science only of *οὐσία* or also of its per se attributes. In both cases the aporias are answered in the same language: the science of substance also studies the axioms (4.3.1005a33-b2, b5-8); the science of being qua being studies not only substance but also its ὑπαρχόντων (4.2.1005a14-16).

As we argued in chapter 5, sameness, difference, and so forth are καθ' ὀυτὰ πάθη of being qua being and unity qua unity. If we are correct in identifying the nature of being with substance, to say that metaphysics is a science of being qua being will be to say that it is a science of substance qua substance. The attributes that belong to being qua being will

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66 Thorp explicitly registers this objection against three accounts of the metaphysics—first philosophy relation (1989: 113, 116-17, 121). The only account that does not receive this objection is that of pseudo-Alexander, which is rejected summarily for other reasons (page 209 above).

67 *Meta.* 3.1.995b6-8, b18-20; 3.2.996b31-2, 997a25-6; cf. 4.3.1005a19-21.
be the attributes of substance qua substance. Aristotle’s account of these properties concentrates primarily on their presence in sensible substance, but as attributes of substance as a whole they belong to sensible substance not ἡ αὐτό (i.e., qua sensible substance) but because sensible substance is an instance of substance. If metaphysics followed the APo. model of universality through generic univocity, we should expect to find the causes of the attributes of sensible substance qua substance in the genus of substance. In the absence of a genus of substance, something else must be the nature in virtue of which the attributes of being and unity belong to substances. As the nature of substantiality this nongeneric entity will explain why sensible substances have the per se attributes of substances. Thus if we can explain how first philosophy is the science of the causes of substantiality in substance, we can also see how first philosophy is the science of the attributes of sensible substance qua substance, the ὑπάρχοντα ἡ ϑεόν (6.1.1026a32).

It must be admitted that this solution is not unproblematic. Even if we can show how the objects of first philosophy are causes of substantiality in sensible substances, it is not clear how the results of an investigation into the attributes of one genus of substance is to be applied to the other genus. In Meta. 4.2 and Meta. 10 Aristotle focuses entirely on the attributes of sensible substance, perhaps because sensible substance is more known to us. In our fifth chapter we pointed to difficulties in applying the results of this investigation to immaterial substance. Moreover, as a whole Meta. 4.1-2 does not seem to be adapted to a picture of metaphysics according to which it is to be identified with first philosophy: significantly, the only passage that suggests an identification of this sort (1004a2-9) is obviously out of place in its current location and does not flow naturally from anything

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68 See chapter 5, pp. 138-46 above. The primary text for this identification is Meta. 4.2.1004b5-17, although the identification of the primary instance as ὑπάρχοντα is only hinted at (b8-10).

69 Thorp (1989: 124-5) suggests that logic and theology be distinguished as follows: As the study of the attributes of being, metaphysics is logic or ontology; as a study of a cause shared by all beings, metaphysics is theology. The primary difference between our solution and Thorp’s is that for Thorp the objects of first philosophy are not causes of the beingness (i.e., substantiality) of substances, and thus are not responsible for the fact that the attributes that belong to things qua beings belong to sensible substances. Although Thorp argues that both tasks belong to a science of being, it is difficult to see why a study of a common cause of generation should belong precisely to a science of being. Certainly Thorp maintains that the causes studied in metaphysics are not the causes of the properties that Thorp takes to be common to all beings, i.e., “subservience to logic” (p. 117). So Thorp’s solution still effectively leaves us with two different sciences and an account of the universality of first philosophy similar to Décarie’s.

70 Chapter 5, pp. 148-9 above.
else in the chapter.71 It is more than likely that Meta. 4.2 and 6.1 are not products of exactly the same train of thought: the former is content to reduce being to substance, and shows no sign of dealing with the problems caused by the additional reduction of substance to primary substance. We have argued that Meta. 6.1 is intended to be compatible with 4.2; but Aristotle himself provides only the slightest indication that the two chapters are meant to describe one science and no discussion of the difficulties arising from this identification.

While the structure that allows the science of substance also to study the common axioms is not as clear as it is with the per se attributes, the identification of the science of being with a science of unmoved entities is more explicit and there are even hints regarding the basis of this identification. The relevant methodological passage—which we have already examined in its context—is to some extent parallel to our Meta. 6.1 passage:

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\ldots \text{since there is a scientist above the physicist (for nature is only one genus of being), the inquiry into these axioms, too, should belong to him who investigates universally and about primary substance. Physics, too, is a kind of wisdom, but not the primary one.} \]

The study of the axioms has already been assigned to the science of being (1005a19-29); now this universal science is identified with the science of primary substance. With Meta. 6.1 (and 4.2.1004a2-9) as context, it is difficult to take this passage otherwise than as indicating that the science which investigates immovable substance also investigates the axioms and is thus the science of being qua being.

Thorp does not mention this passage, but would presumably find it no less misguided than its counterpart in Meta. 6.1. Thorp argues that there is no reason for the common axioms to apply more strongly to immaterial and immovable substance than to other instances of being: "subservience to logical principles is an ordinary καθ’ ἐν [i.e., univocal] universal attribute of things."73 Likewise, Thorp argues, the other properties

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71 See chapter 3, pp. 92-3 above.
72 Meta. 4.3.1005a33-b2. For additional discussion of this passage see chapter 3, pp. 93-4, and chapter 4, pp. 116-17.
73 Thorp 1989: 121; cf. p. 117.
peculiar to immaterial substance—eternity and immutability—do not seem to belong to any extent to sensible substance.

We have already suggested in our account of the common axioms that this is not Aristotle’s view. It is true, of course, that sensible substances are not eternal or immutable in the same way that Aristotle’s god or even immanent form is. Nevertheless Aristotle thinks that in order to be subject to the common axioms things must at least have some degree of intelligibility and permanence: a thing must be something and it must be rather than undergo constant flux. As is clear from Meta. 4.5-6, Aristotle finds it necessary to refute physical theories incompatible with the principle of noncontradiction and the law of the excluded middle: it is necessary to show how a world that is in at least some senses constantly changing can nevertheless be sufficiently permanent and intelligible to provide referents for true statements. In some places Aristotle considers the possibility that only immovable substances are strictly speaking subject to the PNC. At the very least, it is necessary to explain how the sensible world can be such as to be subject to the laws of logic; and it appears that the relevant explananda are also the explananda for a science of being.

The last of Thorp’s objections touches on the most difficult issues raised by a προς ἐν account of substantiality. In Meta. 4.2 and elsewhere προς ἐν equivocality is understood in terms of logical priority and posteriority: the nonsubstantial instances of being are all defined in terms of substance and hence all include a reference to substance in their definitions. While it may be plausible to conceive the nonsubstantial instances of being in this way, it is more difficult to see how this can be for a relation between sensible and primary substance: “it is wholly implausible,” Thorp writes, “to suggest that ‘being’ can always be paraphrased to include a mention of God.” Thorp concludes on these grounds

74 Thorp focuses only on the immutability and eternity of the objects of first philosophy, which is understandable given Aristotle’s emphasis in Meta. 6.1. But as Meta. 7.10-11 and 7.15 make clear, it is also things that are permanent and separate from matter that are preeminently intelligible.
75 We discuss these passages in chapter 4, pp. 129-31 above.
76 Meta. 4.5.1009a36-8, 1010a28-32. These seem to be dialectical moves, but the passages nevertheless emphasize the fact that Aristotle is not taking for granted the applicability of the PNC to the sensible world.
77 See section III of chapter 3, above.
78 Thorp 1989: 118.
that Aristotle cannot possibly be thinking of πρὸς ἕνεquivocity in those places, such as Meta. 6.1, where he identifies metaphysics with first philosophy.

Whether or not the workings of πρὸς ἕνequivocity are exactly as Thorp describes them, it is clear that some explanation must be given why the being of sensible substances are to be understood in terms of some unqualifiedly separate substance. We shall see that the problem becomes more manageable if immanent form is introduced as a sort of intermediary between sensible substance and separate form: there is a clear πρὸς ἕν relation between the intelligibility of a sensible substance and that of its form, and an implied πρὸς ἕν relation between the plurality of immanent forms and separate form. We shall examine the first case in our next chapter, and the second case in chapter 9.

VI

In this chapter we have come a step closer to understanding Aristotle's account of the nature and principles of being, by examining the implications of the identification of the science of being with first philosophy. This identification strongly suggests that the nature and principles of being are to be found in unmoved entities. It also suggests that the explanandum of the science is the presence in sensible substances derivatively of characteristics found primarily in objects of first philosophy. This approach is consistent with the characterization of the principles of being implicit in the aporias about the principles and hints regarding the nature of being and substance at various places in Meta. 4. In the chapters that follow we shall attempt to verify the hypothesis that we used to explain the identification, at the same time arriving at a more precise account of the nature of substantiality and the principles Aristotle posits to explain it.
Chapter 8
The Central Books

We have suggested in the foregoing that Aristotle's project in the *Metaphysics* is to identify the nature and principles of being, with the expectation that these should ultimately coincide. Books 7 and 8 of the *Metaphysics* have long been recognized as an investigation into the nature of being and substance, but its character as a specifically *causal* investigation has only recently received emphasis.¹ We shall argue in this chapter that recognition of the causal character of the inquiry into being and substance allows one to avoid certain background assumptions that have made *Meta. 7–8* a particularly intractable text for many of its recent interpreters.² In particular, we shall argue that the candidates for primary substantiality cannot themselves be the sensible substances that are subjects for attributes. If something is to be a primary substance, we shall argue, it must be an essence and an actuality. Sensible substances, however, can neither be identical to their essences nor be identitatively actualities. The very possibility of predicating accidents of sensible substances, as well as their capacity to undergo the various kinds of change, requires that there be something in sensible substances which is distinct from essence and actuality and has the potential for further actualization and change.

¹ See Bolton 1995, Code 1997. The more traditional approach is effectively summed up in what Barnes (1995: 90) intends to be a relatively noncontroversial introduction to the central books. He summarizes the basic questions of *Meta.* 7 as follows: (1) what does the predicate "... is a substance" mean? (2) Given an answer to (1), i.e., "an ontologically primary item," what must something be like in order to be an ontologically primary item? (3) What sorts of items possess these characteristics? There is no suggestion that an inquiry into the nature of substance must also be an inquiry into the *causes* of substantiality. Cf. Bolton: "On the usual approach, if one may briefly summarize it without excessive travesty, Aristotle's objective is to find a candidate for substance, or basic reality, that satisfies certain so-called criteria, such as being a basic subject and being an essence or what something is" (1995: 441, cf. 431-2). The recent literature on the central books is vast, with the consequence that any summary of this sort is liable to "excessive travesty." (Thus Bolton also cites Code 1984 as a version of the traditional approach he is rejecting, but Code is clear that the primary *oúrásia* being sought is a *cause*: pp. 9-12.) Nevertheless the foregoing is accurate as a characterization of dominant trends.

² For the view that the central books in principle do not admit of a coherent interpretation see Graham 1987: 207-22; Wardy 1991: 97.
For this reason, Aristotle will seek not to identify sensible substance with primary substance but rather to identify primary substance and use it as a principle and cause of substantiality in sensible substances. Substantiality belongs καθ’ αὐτό and ἃ αὐτό to entities that are essences and actualities, and in a derivative sense to any entities whose substantiality is causally dependent on these primary substances. The project undertaken in the central books is thus that advertised in Meta. 7.3: a progression from substantiality as it is most known to us in sensible composites to the nature and principles of substantiality (1029b3-12). We shall argue in what follows that Aristotle identifies essence and primary οὐσία with form, both immanent and separate. The unmoved entities that are the objects of first philosophy will thus serve as the nature and principles of being and substantiality in sensible substances. The central books thus undertake the investigation into the nature and principles of being introduced in Meta. 6.1. In the present chapter we shall first consider Aristotle's identification of primary οὐσία with essence and form and his use of immanent form as a principle of being in sensible substances. In the next chapter we shall consider to what extent separate form can be conceived as the nature of being and a principle of being.

I

If our conception of Aristotle's project is correct, we should find him attempting two interconnected tasks in Meta. 7-8, the identification of the nature of being and of the principles and causes of being. We shall initially consider these tasks separately. The first chapter of book 7 recalls the reduction of the nature of being to substance already presented in book 4. Being in the primary sense is substance, and the inquiry into the nature and causes of being is an inquiry into the nature and causes of substantiality. In chapter 2 Aristotle briefly discusses several historical accounts of substance and in chapter 3 he presents four possible accounts of substance for evaluation. Substance is thought to

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3 One of the implications of this position is that metaphysics would not be a causal investigation, if there were only immaterial substances. A causal investigation of being and substantiality is necessary because not all substances have their substantiality primarily and καθ’ αὐτό.

be (1) essence (τι ἐν εἴναι), (2) the universal, (3) the genus, and (4) the underlying subject (ὑποκείμενον). The last of these may be considered as form, matter, or composite.

In the course of book 7 several of these conceptions are unequivocally eliminated. Later in chapter 3 Aristotle eliminates matter and the composite (1029a26-33); chapter 13 eliminates the universal and chapter 14 the genus. The composite would appear to be a promising candidate for substance, and its summary elimination is surprising. We shall come back to consider Aristotle's reasons. Our task now is to consider the remaining candidates, form and essence, which are the focus of Aristotle's attention in Meta. 7.4-11. We shall be concerned particularly with two claims: the identification of essence and primary ὀψία in Meta. 7.6, and the identification of essence and primary ὀψία with form in Meta. 7.10-11. Space does not permit as exhaustive an examination of these difficult texts as one would like, although we shall consider the argument for the identification of essence and primary ὀψία at some length. The conclusion of these arguments, however, is an identification of primary ὀψία with the unmoved entities that are the objects of first philosophy, namely, immanent and separate form.

Before considering Aristotle's argument for the identification of essence with primary ὀψία, it is necessary to make some preliminary remarks about Aristotle's use of τι ἐν εἴναι. We have been translating τι ἐν εἴναι as "essence"; more literally, it might be rendered "what it is to be a [thing]". In most cases τι ἐν εἴναι refers to what it is to be for a certain kind of thing, in other words, to some object of definition. In such cases the one-word translation "essence" captures the meaning of τι ἐν εἴναι. In a few places, however, Aristotle is willing to speak of the τι ἐν εἴναι for a specific individual, using a demonstrative pronoun to distinguish what it is to be the individual from what it is to be the kind. In Meta. 7.15, for instance, Aristotle distinguishes between τὸ ὀικία εἴναι and τὸ τῇ δὲ τῇ ὀικίᾳ <εἴναι> (1039b25). Immediately following this, however, he

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5 Among recent translations Bostock translates τὸ τι ἐν εἴναι ἐκ&alpha; εἴναι as "what being is for a thing," Frede and Patzig as "Was es heißt, dies zu sein." "Essence" is favoured by Ross (hence also the ROT) and Apostle.

6 On τι ἐν εἴναι as primary object of definition see 7.4.1030a2-27, 7.6.1031b6-7, 7.11.1037a21-b7.

7 See also DC 1.9.278a8-13. The DC passage, and the parallel between 7.15 and 7.8.1033b8-9, indicate that τι ἐν εἴναι in this case refers to form-matter composites. Two other passages may also reflect this
emphasizes that the latter cannot be an object of definition or demonstration, or of scientific knowledge generally (1039b27-1040a5). As we shall see, the sense of τί ἢν εἶναι according to which it is to be identified with primary οὐσία is the sense in which it is the object of definition and scientific knowledge. We are thus leaving aside the anomalous cases where Aristotle appears to be writing of essences of individuals. It is probably misleading even to translate τί ἢν εἶναι as "essence" in these cases.⁸

In *Meta.* 7.4, Aristotle himself adds a further specification for essence in the primary sense. Only essences in the category of substance are essences in the strict sense. Like "being," "essence" is said of the nonsubstantial categories according to a πρὸς ἐν equivocity (1030a2-b3). When Aristotle comes to inquire whether a thing and its essence are identical, he begins by ruling out the essences involved in accidental predications: a white man is not the same as the essence of a white man (7.6.1031a19-28). The question in *Meta.* 7.6 is whether there are καθ' αὐτό entities, i.e., *substances,* that are identical with their essences.

The answer that Aristotle proposes is that everything that is (1) primary and (2) said καθ' αὐτό must be identical to its essence (1031b13-14, b18-21, 1032a4-6). Otherwise put, everything that is not only οὐσία but *primary* οὐσία will be identical to its essence. If we were right in chapter 3 to identify the nature of being with primary substance, then this will have important implications for Aristotle's understanding of what it means for something to be.⁹ Our immediate concern, however, is to determine what entity or entities Aristotle is willing to identify as primary substance. According to some commentators, the purpose of *Meta.* 7.6 is to argue not only that primary substance must

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⁸ Thus Bostock (1994: 215-17) and Owens (19783: 371) reinterpret the 7.15 passage so that τὸ τῆς τῆς οἰκίας does not refer to essence. Frede and Patzig (1988: ii.281-2) discuss several possibilities for this passage including emendation. By contrast, Irwin (1988: 251, 266-7) invokes this passage and its parallel in *DC* to show that essences may be identified with particular material substances. But it is difficult to see how the ensuing unequivocal statement that such individuals are not definable (7.15.1039b27-1040a5) is compatible with Irwin's view that such essences are objects of definition and scientific knowledge (pp. 216-17).

⁹ See chapter 3, pp. 90-4.
be identical to essence, but that all substances, including sensible substance, must be identical to their essences. If so, the nature of being will be found in sensible substance, and the being of sensible substances will not require explanation in some cause or causes distinct from them. The interpretation is vulnerable to the criticism that it is incompatible with important passages elsewhere in the central books, but it retains currency and has most recently been defended by Theodore Scaltsas. A close examination of Meta. 7.6 in light of the issues raised by Scaltsas’s interpretation will help clarify exactly what Aristotle does and does not intend by the identification of primary things with their essences.

The chapter begins with the statement that the inquiry into ὁμοιότατος requires that one consider whether each thing is the same or different from its essence, because “each thing is thought to be nothing else than its own ὁμοιότατος, and the essence is said to be the ὁμοιότατος of each thing” (1031a16-18). Aristotle briefly considers and rejects the view that things predicated κατὰ συμβεβηκός are identical with their essences, before moving on to the question of identity for things that are καθ’ αὐτά. This would be the case, for instance, if some substances exist, like the Ideas posited by some thinkers, prior to which no other substances or natures exist. For if the Good Itself were distinct from the essence of Good, Animal Itself from the essence of Animal, and Being from the essence of Being, then besides the ones posited there would be other substances and natures and ‘Ideas’, and these latter would be prior to the former, that is, if essence is substance. (7.6.1031a29-b3)

The suggestion is that there will be substances identical to their essences if there are “certain substances prior to which no other substances or natures exist.” That is, identity with essence might be supposed to obtain in primary substances, of which one kind might be Platonic Forms. If there were Forms, their primacy would require that they be identical to their essences. Otherwise, assuming that essence is substance, there would be other substances identical to their essences and prior to these putatively “primary” ones. If, for

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10 Scaltsas 1994: 128-42. The identification is also defended by Owen (1965: 156-63), Woods (1975-6), and Irwin (1988: 217-19). The passages that make the identification difficult are Meta. 7.11.1037a34-b7 and 8.3.1043a29-b4, discussed pp. 236-7, 239-40, 273, and 282 below. Irwin explains these passages by distinguishing between two kinds of composites, “formal composites” which are the basic subjects and identical to their essences, and “material composites” which are not (pp. 243-5). Scaltsas (pp. 191-4) distinguishes between form in actuality (which is identical to sensible substance) and form in abstraction (which is not). Neither distinction can be found explicitly in Aristotle’s text. For further discussion of Scaltsas see note 140 below.
instance the Form of the Good (the Good Itself) were not identical to its essence, there would be some other substance prior to the Form of the Good that was identical to its essence. The argument is in effect a regress argument: if essence is substance and some substance is not identical to its essence, there must be another substance prior to it that is identical to its essence.

Immediately following this is a difficult and compressed *reductio* argument against the possibility of a certain “severance.” Scaltsas maintains that the argument *assumes* substance is essence in order to show that no instance of substance can be distinct from its essence. He thus translates the relevant passage as follows:

> If the essence of good is different from Good Itself, and the essence of animal from Animal Itself, and the essence of Being from Being Itself, there will, firstly be other substances and entities besides those which are asserted, and secondly, these others will be prior substances if the essence is substance. And if the posterior substances are severed from prior [εἰ μὲν ἀπολελυμέναι ἀλλήλων], there will be no [scientific] knowledge [ἐπιστήμη] of the ones and the others will have no being. (1031a31-b4)

Read in this way, the passage is an argument against any severance between a prior and posterior substance such that the latter is not wholly identical to the former. Sensible substance cannot be in any way distinct from primary substance and hence must itself be primary substance.

On this interpretation, the word ἀλλήλων must refer to the prior and posterior substances. What these must be is made clear by the next sentence: “by ‘being severed’ I mean this, that neither the essence of good belongs to Good Itself nor being good [τὸ εἶναι ἄγαθόν] to the essence of good” (1031b4-6). Thus if Scaltsas is right in thinking that Aristotle is arguing against a distinction between prior and posterior instances of substance, and the essence of good is the prior substance, Good Itself must be an example of a posterior substance.

The consequences of the severance are that there would be no knowledge of the posterior substance, and the prior substance, essence, would have no being. It is at this

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12 Scaltsas 1994: 137; but retaining some of Apostle’s terminology for consistency.
13 I depart from Apostle’s translation; see note 18 below.
point that Scaltsas's interpretation starts to go awry. The most serious problem is that, if Scaltsas is right in thinking that Aristotle is assuming that essence is substance, it is impossible that any argument based on this premise should reach the conclusion that essences are not beings. Being in its primary instance is substance; if essence too is substance then essence must have being. It is impossible that a severance between essence and a posterior substance should affect this. The inference is not very plausible even if Aristotle is not assuming that essence is substance: it is difficult to see why the severance of an essence from something posterior to it should imply that essence is not a being. The second result, that the posterior substance would not be knowable, is not necessarily one that Aristotle would seek to avoid. Certainly Aristotle does not believe the sensible composite is intelligible in its own right; it is intelligible with respect to its form or primary ὀὐσία (1037a28-9), with which it is not identical (b4-5). In order for there to be scientific knowledge, some instance of ὀusalem must be intelligible καθ' αὐτό, but this need not be the sensible composite.\(^{15}\)

The alternative is to understand the passage as an argument for the identification that Scaltsas thinks Aristotle has assumed, i.e., the identification of primary ὀوضوع and essence. Aristotle has just used this identification as a premise in the argument for the identity of Good Itself and essence (1031b2-3); now it is necessary to show that the premise is true. The key to understanding the argument is to recall that Aristotle is using the Good Itself as an example of something καθ' αὐτό and primary, that is, as an example of primary ὀوضوع (1031a29-30).\(^{16}\) Having suggested this example, Aristotle uses it to raise the question, can primary ὀوضوع be "severed" from its essence? In ruling out this possibility our passage establishes that primary ὀوضوع must be identical to essence:

\(^{14}\) I am taking the identification of primary being with substance and primary substance with essence to be identity statements, and therefore convertible.

\(^{15}\) Whether and how the form does give intelligibility to the sensible composite intelligible is another, difficult question. See sections V and VI below.

\(^{16}\) Otherwise put, Aristotle is using a Platonic candidate for primary ὀوضوع to establish something about primary ὀوضوع as Aristotle himself understands it. See Frede and Patzig 1988: 92; Bostock 1994: 107. Aristotle does not think there is such a thing as the Good Itself, and so nothing at all follows for Aristotle from putative truths about the Good Itself unless it is used as a hypothetical example of something whose existence Aristotle does recognize, i.e., primary ὀوضوع. (Note that the argument in 7.6 cannot be intended as a refutation of the Forms: the Forms are required as putative examples of things identical to their essences; 1031a28ff.)
If [Good Itself considered as an instance of primary \( \nu\sigma\iota\alpha \)] were severed [from the essence of good], there would be no knowledge of the former, and the latter would not be beings [\( \delta'\nu\nu\alpha \)]. (1031b3-6)

On this construal of the passage, the absurdities that Aristotle draws from the severance do in fact follow from it. Since “there is scientific knowledge of something only when we know its essence” (b6-7), if primary \( \nu\sigma\iota\alpha \) were not identical to its essence it would not be scientifically intelligible.\(^{17}\) Likewise, if primary being is \( \nu\sigma\iota\alpha \) and essence is not \( \nu\sigma\iota\alpha \), then essence in itself will not be a being. The point becomes clearer if we use something that is clearly substantial on Aristotle’s view. If the essence of horse is separated from the primary \( \nu\sigma\iota\alpha \) of horse, then we will not be able to say that the essence is horse.\(^{18}\) However, if we are to say that the essence of horse exists, it must itself be horse; to be is to be \( \nu\sigma\iota\alpha \), to be \textit{something}.\(^{19}\) More generally, the essence of everything must be that thing (1031b7-11).\(^{20}\) Not only must primary \( \nu\sigma\iota\alpha \) be essence if \( \nu\sigma\iota\alpha \) is to be knowable, but essence must be primary \( \nu\sigma\iota\alpha \) if the primary objects of scientific knowledge are to be real.

In other words, if the real is to be intelligible and the objects of knowledge real, being and intelligibility must ultimately coincide in their primary instances.\(^{21}\) This is what we should expect from what we have already seen throughout the methodological books.\(^{21}\)

\(^{17}\) See Frede and Patzig 1988: ii.95. This passage clearly establishes that it is \( \tau\iota \ \eta\nu \ \varepsilon'\nu\nu\alpha \) in the sense of “object of definition” that Aristotle has in mind. See notes 6-8 above.

\(^{18}\) Cf. 1031b6: \( \tau\iota \ \varepsilon'\nu\nu\alpha \ \alpha\gamma'\alpha\theta'\nu \) will not belong to the essence of good. Apostle without warrant translates \( \tau\iota \ \varepsilon'\nu\nu\alpha \ \alpha\gamma'\alpha\theta'\nu \) as though it read \( \acute{o}v\gamma'\alpha\theta'\nu \) \( \tau\iota \ \acute{o}v\gamma'\alpha\theta'\nu \); likewise Bostock takes “being good” as a “simplified version” of “Good Itself.” But I do not think this is Aristotle’s point: the point is rather that if essence is not primary \( \nu\sigma\iota\alpha \) (i.e., in our example, Good Itself) then it will not be \textit{good} and hence will fail to be. In other words, b6 is not a pointless repetition but rather the argument for the claim that essences will not be if they are not \( \nu\sigma\iota\alpha \). We shall argue (p. 234 immediately below) that this argument implicitly assumes a conception of being in terms of essence and thus begs the question.

\(^{19}\) Cf. Owens 1978: 376; Code 1997: 353; also \textit{Meta.} 4.4.1007b18-29 discussed in chapter 4, p. 128 above.

\(^{20}\) As Frede and Patzig (1988: ii.96) point out, the train of thought here is not entirely clear. Scaltsas takes a radically different view of this argument, maintaining that its validity depends on the existence of a Form of Being (1994: 138). I do not think the validity of the argument depends on there being a Form of Being: it is not \textit{because} the essence of being is not being that the rest are not beings. Rather, no essence would be \( \nu\sigma\iota\alpha \), and nothing can be if it is not \( \nu\sigma\iota\alpha \) or dependent on \( \nu\sigma\iota\alpha \). The reason that no essence is being if the essence of being is not being, is that either essence is \( \nu\sigma\iota\alpha \) or not, and \( \tau\iota \ \acute{o}v\gamma'\alpha\theta'\nu \) \( \delta'\nu\nu\alpha \) \( \tau\iota \ \eta\nu \ \varepsilon'\nu\nu\alpha \) (1031b9-10). The Forms are used only for the sake of the argument, which is sound whether there are Forms or not (b14-15).

\(^{21}\) This point is clearly grasped by Lear (1988: 278-84, esp. 279); cf. also his commentary on the divine mind (pp. 293-309, esp. 306-9).
The aporias about the principles are predominantly aporias about principles of intelligibility, the defense of the principle of noncontradiction appeals to fact that existing things must have definite intelligible content, and *Meta*. 6.1 identifies the science of being qua being with first philosophy and theology, which according to *Meta*. 12.6-10 should be the science of separate ψοιζ.

The strengths and weaknesses of the argument for the identification of being and essence may be seen if one considers what follows if the identification is denied. The argument that essence will not be a being unless it is identical to οὐσία seems to beg the question. In his arguments at 1031b6 and b7-10, Aristotle is already implicitly understanding “to be” as “to be something.” In other words, he is construing being “essentially”: he assumes that for the essences of good and horse to be is for them to be *good* and be *horse*. If being is to be understood in some other way, essence might receive its being derivatively from whatever it is that does possess being primarily.22 On the other hand, Aristotle has presented a compelling argument for denying scientific intelligibility to this primary being, if it is severed from essence. Scientific intelligibility belongs primarily to essences; it may belong derivatively to things that are not themselves essences if they have a principle of intelligibility that is itself an essence. If primary being is not essence, neither will it be causally dependent on essence. Therefore, unless primary being is essence, primary being will not possess scientific intelligibility. At least one major philosopher appears to have been willing to maintain that primary being is not essence and to accept the Aristotelian implications of this position.23 Nevertheless Aristotle does have good reasons for seeking to identify the two.

If primary being and substantiality is to be identified with essence, then one of the explananda for a science of the causes of being should be intelligibility in things that do not

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22 As Gerson (1990: 139-40) points out, to deny the identity of primary being with essence is more generally to deny its identity with οὐσία. Cf. pp. 204-5.

This denial is certainly not unproblematic. If the being of essences is distinct from their intelligibility, just insofar as they are intelligible essences will not be beings. For some discussion from the point of a view of Thomistic distinction between essence and existence, see Owens 1985: 133-42.

23 On Plotinus’s characterization of the One as “beyond οὐσία” see, briefly, Gerson 1990: 204, 212-14.
have it primarily and καθ’ αὐτό. Just as triangularity and its per se attributes belong primarily and καθ’ αὐτό to the genus of triangularity and secondarily to the species of triangle, intelligibility will belong primarily to primary being and secondarily to beings other than primary being. The difference is that triangularity is a genus, whereas the thrust of Aristotle’s arguments in the aporias and *Meta* 6.1 is that being and substantiality are not and cannot be genera.

Does *Meta* 7.6 show that primary being and substantiality must be found in sensible substance? At 1031b18-21 Aristotle concludes that “each Thing Itself[αὐτὸ ἐκάστον] and its essence are one and the same but not by accident, and to know each thing is to know its essence.” Aristotle presents two additional arguments for this conclusion at 1031b28-1032a4, what Scaltsas calls the “second-man” arguments. Briefly, the regress in both is the following. If for every \( x \) there is some essence \( E(x) \) distinct from \( x \), then there will be an essence \( E(E(x)) \) distinct from \( E(x) \), thereby generating an vicious infinite regress. There must be something that is identical to its essence: this is primary substance. Everything that is primary and said καθ’ αὐτό—in Platonic language, each Thing Itself—must be identical to its essence (1031b13-14, b18-21, 1032a4-6). It does not follow from this that every substance is identical to its essence, because it does not follow that every substance must be primary substance. The conclusion is that some (1031b31) substances, primary substances, must be identical to their essences; there is no reason to conclude that all must. There is thus no reason to assume on the basis of *Meta* 7.6 that sensible substance must be identical to its essence or that sensible substance must be primary substance.

It is necessary to emphasize one implication that does follow from this argument. We have pointed out that if something is a primary substance, it must be identical to its essence. As we have seen, however, the argument also implies that if something is an

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24 Intelligibility is not the only explanandum: being separate and τὸ δὲ τι is an explicit criterion for substance (7.3.1029a27-8). Both kinds of criteria require some sort of permanence. We shall discuss these issues momentarily.

25 Aristotle and the ROT translate “each thing and its essence,” thereby missing the force of the αὐτό (only Bostock translates captures it with “each thing itself”). Yet the αὐτό is important: Aristotle’s examples are αὐτό τὸ ὑγιάθον, αὐτό τὸ ζῷον, etc.; i.e., not individual goods and animals but the Forms of these things.

26 The regress is vicious because the essence of an entity is also its cause; see sections V-VI below.
essence, it must also be an instance of primary substance. Otherwise, Aristotle implies, it would be dependent on something else for its being, but there is nothing prior to essence on which the being of an essence can depend. As we have seen, this is true only of substantial essences: Aristotle does not claim this identity for nonsubstantial essences. Nevertheless, this suggests that if sensible substances genuinely have an essence, then there is something in them that has a claim to be called primary substance. Sensible substances need not be identical to their essences, but they must have essences which in turn are instances of primary substance.

II

Our next task is to identify what sorts of things are essences and instances of primary substance. In doing so we must address one of the most difficult interpretive questions in the *Metaphysics*. The clearest instance of primary substance, and thus of a substance identical to its essence, is the kind of substance mentioned only obliquely in the central books, namely, the unqualifiedly separate form that is Aristotle’s god. In *Meta*. 12.8 Aristotle calls separate form both primary ὑσία (1074b9) and primary τὰ ἑν ἐνα (1074a35-6). Separate form is unqualifiedly simple (12.7.1072a32), and so cannot help but be identical to its essence. Moreover, various remarks throughout the central books suggest that the investigation undertaken there is ultimately for the sake of an account of separate form. Thus, whatever is true of form and essence in sensible substances should apply at least as strongly to separate form and essence.

Having said this, it is important to emphasize that nothing in *Meta*. 7–8 suggests that what Aristotle says of form and essence in sensible substance is meant to be understood as true only of separate form and separate essence. Thus when Aristotle tells us, for instance, that a soul is identical to its essence (8.3.1043b2), there is nothing to suggest that what Aristotle really means is that soul would be identical to its essence if it

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27 Cf. *Meta*. 7.17.1041b25-8, 8.6.1045b4-5, discussed pp. 265-70 below. As Gerson points out (1990: 275 n. 18), passages such as these make it difficult to understand how the unmoved mover can be the cause of being. For some suggestions see our last chapter.

28 *Meta*. 7.3.1029b3-12, 7.11.1037a10-17, 7.17.1041a6-9.
were a separate form. When Aristotle uses examples of nonsubstances (particularly artifacts) to make points about substances, he draws our attention to the fact that the artifacts used in the examples are not strictly speaking substances (e.g., 7.17.1041b28-33, 8.2.1043a4-7). When Aristotle describes form and essence in sensible substance, by contrast, there is no indication that these are being used as mere analogues of separate form. If Aristotle’s goal is ultimately to arrive at a conception of separate form, nevertheless the central books are also intended to shed light on immanent form and its role as a principle of being.

Although the identification of immanent form with essence and primary όσία is suggested as early as Meta. 7.7 (1032b1-2), the clearest evidence for this identification occurs in the difficult and convoluted tenth and eleventh chapters of book 7. Chapter 6 has identified essence as the object of definition and primary substance, and chapters 7-9 have introduced form primarily with respect to its role as an ungenerated principle in generation. Chapters 10 and 11 are concerned with what parts of an entity should be parts of its definition. The conclusion is ultimately that it is the parts of the form and essence, and not the sensible or intelligible matter of an entity, that appear in its definition. This definable form and essence is primary όσία in sensible substance. As Bostock points out, it is unlikely that this is Aristotle’s last word on the parts of a definition. For the moment, however, let us concentrate specifically on what Aristotle says in Meta. 7.10-11.

Chapter 10 begins by asking whether all the parts of entity should be included in its definition. In particular, should the segments of a circle, and the fingers of animals, be included in the definitions of “circle” and “animal” respectively? If they are, it seems to follow that as parts of the definition these things will be prior to circles and animals as a whole, whereas it seems that they are in fact posterior (1034b20-32). The solution is a distinction between two kinds of parts, which corresponds to that between two meanings of “substance.” “Substance” is equivocal between form, matter, and composite. The parts

29 Gerson (1990: 272 n. 3) rightly points out that 1043b2-4 eliminates the composite on the grounds that it is not identical to its essence, but the passage seems to rule out his additional claim that form is identical to essence only in nonsensible substances.

30 One is tempted to follow Bostock (1994: 123) in maintaining that the Meta. 7.7 reference to essence and primary όσία (misidentified as “1030b1-2”) is a later addition.

of form (εἴδος) will necessarily also be parts of the composite, but the material parts of the composite will not also be parts of the form. Thus if “concavity” is an example of form and “snubness” an example of a composite, flesh will be a part of snubness but not of concavity (1034b33-1035a6). This is true whether the matter is sensible, such as flesh and bronze, or intelligible, such as the segments of a circle: all these are material parts and thus are not parts of the form. Since they are not parts of the εἴδος, they are not parts of the definition (λόγος) either (1035a21-2).

We learn from Meta. 7.4 that the object of definition is τί ἐν εἶναι. It should not be surprising, then, that Meta. 7.10 identifies form and essence: the parts of the form and essence of a substance are (some or all of them) prior to the substance as a whole; the parts of the composite, that is, the material parts, are posterior.

Since the soul of an animal (for this is the οὐσία of an ensouled body) is the οὐσία κατά τὸν λόγον and the εἴδος and the τί ἐν εἶναι for a body of this sort . . . the parts of this [i.e., the soul], either all or some of them, are prior to the composite animal. . . . A part, then, may be a part of the form (by “form” I mean essence), or of the composite of form and matter. But the parts of the formula (λόγος) are parts only of the form, and the formula is of the universal; for the essence of a circle and a circle are the same, and so are the essence of a soul and a soul. As for the composite, such as this circle, which is an individual, either sensible or intelligible . . . of these there is no definition . . . (1035b14-19, b35-1036a5)

The soul is (1) identical to its essence and (2) the form and essence of a living body. The essence which is the soul is the same as the essence of the animal whose soul it is. With “essence,” then, Aristotle is referring to the formal part of a sensible substance: the

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32 Both sensible and intelligible matter is excluded from the form and definition of a mathematical entity: Meta. 7.10.1035a11-14, 1036a2-12, 7.11.1036b32-1037a5.
33 Cf. Meta. 7.10.1035b33-1036a2, 7.11.1036a26-31, 1037a21-9.
34 The syntax of 1035b14-19 is difficult; I follow Frede and Patzig (1988). On the identification of soul, οὐσία κατά τὸν λόγον and τί ἐν εἶναι see also DA 2.1.412b10-11: “We have now stated universally what the soul is: it is οὐσία κατά τὸν λόγον, and this is the τί ἐν εἶναι of such-and-such a body. . . .” Aristotle’s remark at 1036a1 that a circle is identical to its essence in the same way that a soul is identical to its essence is misleading, because a circle has intelligible matter that is not part of its essence (1036a2-6, 1036b35-1037a2).
Aristotle’s apparent identification of the form and the universal (καθέλαυ) at 1035b34-1036a1 (cf. 7.11.1036a28-9) is troubling in light of Aristotle’s rejection of the universal in Meta. 7.13. Owens (1978: 391), relying on Meta. 13.9-10, glosses statements such as these as indications that knowledge of the form without matter is potentially universal.
definition of essence leaves out the material components.\textsuperscript{35} What is true of circles is also true of human beings. Their form and essence (i.e., their soul) is definable, but just as the circle that is a composite of essence and intelligible matter is not definable, neither is the animal composite of soul and body.\textsuperscript{36}

It is this form and essence, Aristotle continues, that may be identified with primary οὐσία:

It is also clear that the soul is primary οὐσία, the body is the matter, and a man or an animal, universally taken, is a composite of the two. . . (7.11.1037a5-7)

What essence is and how it exists in itself, has been universally stated for all cases; and we have also stated why the formula of the essence of some things has the parts of the thing defined but that of other things does not have them, and that in the formula of the οὐσία of a thing the parts of the thing that exist as matter are not present, for these are parts not of the οὐσία but of the composite. And of the latter there is a formula in one sense, but in another sense there is not. For there is no formula of it with its matter, since this is indefinite, but there is a formula of it with respect to its primary οὐσία, for example, the formula of a soul in the case of a man. (7.11.1037a21-9)

\textsuperscript{35} Although Aristotle frequently writes that the τι ἐστι of sensible substances must include matter, he never writes that their τι ἔστιν ἐίναι does. Rather, he frequently uses τι ἔστιν ἐίναι as equivalent for “form” or “formal cause”: in addition to the passages we discuss in the central books see, e.g., DA 412b11-16, DC 278a3, GC 335b35, Meta. 1075a2, Phys. 194a21, 194b27, 195a20, 198b8. Aristotle uses τι ἔστιν ἐίναι to refer to the formal cause throughout Meta. 1: 983a28, 988a34, 988b4, 993a18, 994a11, 994b17. Several passages may appear to imply that matter is included in τι ἔστιν ἐίναι. On 1025b29 see note 39 below; on 1022a26-7 see note 7 above. At Meta. 12.8.1074a35-6 Aristotle writes that primary τι ἔστιν ἐίναι (i.e., god) does not have matter, but may be read in the same way as if Aristotle had written that separate form does not have matter. Just as it would not be necessary to infer from the latter statement that matter enters into the definition of immanent form, neither is necessary to infer from the former that matter enters into an immanent τι ἔστιν ἐίναι.

\textsuperscript{36} As Frede (1990) points out, the view that sensible substances are defined only in terms of their form is Aristotle's consistent view throughout Meta. 7.10-11, with the exception of one passage, 7.11.1036b28-30. The passage and its context (1036b21-32) are more than usually difficult. Frede (pp. 119-22) argues that the τι ἔστιν ἐίναι of a human being can be defined in such a way as to make clear that it is the τι ἔστιν ἐίναι of a material substance, without actually including matter in the τι ἔστιν ἐίναι. Thus the soul must be defined as the actuality of a certain kind of body, even if the parts of the soul-body composite are in no way parts of the soul and actuality itself.

Alternatively, one might see 1036b28-30 as a dialectical anticipation of Aristotle’s eventual views on definition in Meta. 8.2-6: matter must be included in the τι ἔστιν of a sensible substance, though the τι ἔστιν ἐίναι of a sensible substance is not itself a sensible substance. This depends on a certain interpretation of the progress of Aristotle’s account of definition in Meta. 7–8, sketched in section III below.
Just as we should expect from *Meta. 7.6*, there is something in sensible substance that is primary οὐσία and identical to its essence, namely, the form or soul of that substance.

One last passage requires comment:

... [we have stated] that is some cases the essence of a thing and the thing are the same, as in primary οὐσία ... (by "primary οὐσία" I mean one which is not defined [λέγεται] as one thing being in another which underlies it as matter). But things that are [defined] as matter, or as taken together with matter, are not the same as their essences, nor are they [merely] one by accident, such as Socrates and the musical, for these are the same by accident. (7.11.1037a33-b7)\(^\text{37}\)

Things that are defined without matter, such as the form of a sensible substance, are identical to their essences; the composite includes matter and hence is not identical to its essence. The criterion for being called primary οὐσία is not unqualified separation from matter but rather being defined without matter. As separate in λόγος from matter, immanent form meets this criterion.\(^\text{38}\)

### III

The outline we have presented here faces at least two difficulties. First, the account of definition presented here, while accurate as an account of *Meta. 7.10-11*, is at best a one-sided account of Aristotle’s views about definition as a whole. In many places

\(^\text{37}\) ... δι' τό τι ἦν εἰναι καὶ ἔκχαστον ἐπὶ τινὰς μὲν ταύτα, ὡσπερ ἐπὶ τῶν πρώτων οὐσιῶν ... (λέγω δὲ πρώτων ἢ μὴ λέγεται τῷ ἄλλῳ ἐν ἄλλῳ εἰναι καὶ ὑποκείμενο ὡς ὑλῆ), δόσα δὲ ὡς ὑλῆ ἢ ὡς συνειλημμένα τῇ ὕλῃ, οὕτω ταύτα, οὐδὲ κατὰ συμβεβηκός ἐν, οἶδον ὁ Σωκράτης καὶ τὸ μοναδικόν ταύτα γὰρ ταύτα κατὰ συμβεβηκός (trans. Apostle with modifications based on Bostock). I render λέγεται as "defined"; cf. 1034b31, *Phys.* 2.2.194a1-7. Ross and Jaeger emend οὐδὲ (1037b5) to οὐδ’ <εἰ>, but in proposing that Aristotle is ruling out mere accidental unity Frede and Patzig provide a convincing account of the received text (1988: ii.220). Bostock (1994) follows this reading but renders it “not even one by accident.” If Socrates and musicality can be one by accident, however, one would expect Socrates and his essence to be at least accidentally one. Cf. 1037a5-10, a21-33.

\(^\text{38}\) I take "separate in λόγος" to mean "definable without matter." Thus the form of a sensible substance, but not a sensible substance itself, is separate in λόγος: the τι ἐστι of a sensible substance includes matter. Taken in themselves, essences do not include either sensible or intelligible matter, even if they are not unqualifiedly separate from sensible particulars. This interpretation is confirmed by Aristotle’s remark at *Meta.* 8.6.1045a36-b7 that there are things that contain neither sensible nor intelligible matter yet are not separate from particulars; see pp. 268-9 below. Note that separation in λόγος is not the same thing as nonindividuality: the τι ἐστι of a sensible substance must in some sense include its matter, but is nonetheless predicable of all substances of that kind; see section III immediately below.
throughout the corpus, Aristotle stresses the fact that unlike mathematical entities,
physical substances and their attributes must somehow be defined with their matter.
Second, it is far from clear exactly what Aristotle means by calling immanent form primary
οὐσία. There are at least two reasons to deny primacy to immanent form. First, as we
have seen, Aristotle calls separate form primary οὐσία, and it is difficult to see how both
immanent and separate form can be primary. Second, in at least some respects the
composite appears to be a much better candidate for primary οὐσία than the form: it is the
composite that is separate ἀπλῶς and the ὑποκείμενον for attributes. At the very least, it
is necessary to indicate what Aristotle means by attributing a sort of primacy to immanent
form.

The first problem, that concerning the objects of definition, cannot receive the
attention it deserves here. We shall restrict ourselves to a sketch of a solution. The
problem is created primarily by methodological passages such as Aristotle's account of the
objects of physics in Meta. 6.1:

We must not fail to notice how the τί ἢν εἶναι and the λόγος of an object of
physics exists, for inquiry without this leads nowhere. 39 Now of things that are
defined and their τί ἐστι, some are considered in the way that snubness exists,
others in the manner in which concavity exists. These differ by the fact that
"snubness" is understood with matter . . . but "concavity" without sensible matter.
If, then, all physical things are named in a manner like the snub (as for example a
nose, and eye, a face, flesh, bone, and in general an animal . . . ; for what is
signified by the formula of each of these is not without motion but always has
matter), it is clear how we must seek and define the τί ἐστι in physical things and
why it belongs to the physicist to investigate even some part of the soul, namely,
that which does not exist without matter. (1025b28-1026a6)

39 The phrase τὸ τί ἢν εἶναι καὶ τὸν λόγον is difficult. It is often assumed that it is identical to the τί
ἐστι (1025b31) which is defined with matter (e.g., Ross 1924: i.350); but this would imply that the τί ἢν
εἶναι of a sensible substance includes matter, which is denied at 7.11.1037a21-b7 and 8.6.1045a36-b7—
that immanent form is what Aristotle has in mind is explicit only in the latter passage (b7). Furthermore,
both τί ἢν εἶναι and λόγος can be synonymous with "form"; e.g., Meta. 7.7.1032b1-2, 7.15.1039b20-7,
8.1.1042a28-9, 8.3.1043a37-b4; DA 2.1.412b10-17 (where τί ἢν εἶναι is also identified with οὐσία κατὰ
tὸν λόγον). Thus I am inclined to see the phrase as picking up from the last sentence: i.e., it is necessary
to investigate how the οὐσία κατὰ τὸν λόγον (i.e., form) mentioned there exists, i.e., not as
unqualifiedly separate from matter. Therefore the definition of the sensible substance as a whole will
include matter. In this context οὐσία κατὰ τὸν λόγον, λόγος, and τί ἢν εἶναι all refer to form, whereas
τί ἐστι refers to the definition of the whole. The interpretative problem is aggravated by Aristotle's almost
total avoidance of his usual terminology for Aristotelian form (μορφή and εἶδος) in the methodological
books of the Metaphysics: in books 1-4 and 6 these words appear in this sense only at 1.6.988a4,
3.2.996b8, and 3.4.999b16 (both words). See further section i of chapter 2, above.
This is repeated in Aristotle's methodological introductions in the *Physics* and *De anima* and is echoed in part of *Meta*. 7.11.\(^{40}\) It is clear that on Aristotle's view, sensible substances must be defined with their matter and their τί ἔστι must somehow include matter. Many interpreters take this to imply that since τί ἓν ἔνοαι is the object of definition in *Meta*. 7.4-6, τί ἓν ἔνοαι will also necessarily include matter.\(^{41}\)

We have seen that in *Meta*. 7.10-11, by contrast, Aristotle states that the τί ἓν ἔνοαι of a sensible substance is to be identified with its form and cannot include the material parts of the substance. We are left with three incompatible propositions:

1. Definitions are formulas of τί ἓν ἔνοαι.
2. Definitions of sensible substances include matter.
3. The formula of the τί ἓν ἔνοαι does not include matter.

Aristotle maintains that τί ἓν ἔνοαι does not include matter even in places where he is most clearly indicating that the definition of the sensible is given in terms of form and matter (see esp. *Meta*. 8.6.1045a20-b7). A solution that would include matter in the τί ἓν ἔνοαι of sensible substances therefore seems extremely unpromising. The way toward a reconciliation of these texts seems to lie in recognizing that in *Meta*. 8.2-6 Aristotle tacitly rejects the view expressed or implied throughout *Meta*. 7.4-13 that definitions are only of τί ἓν ἔνοαι. The evidence for this interpretation is perhaps best appreciated if we follow Aristotle's progress through book 7 a bit further. In *Meta*. 7.12 Aristotle attempts to show how the definition developed in *Meta*. 7.10-11, and hence also the object of such a definition, can be a unity. In *Meta*. 7.13 this leads to aporia: the object of definition becomes incomposite, and so, paradoxically, no longer the sort of thing that can be an object of definition in the first place.

Our account of *Meta*. 7.12 is necessarily brief. Aristotle's concern for the unity of form and essence is easily understood. The nature of being is found in primary οὐσία, but

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\(^{40}\) *Meta*. 7.11.1036b21-32 (see note 36 above), *Phys*. 2.2.193b22-194a12, *DA* 1.1.403a3-b19.

\(^{41}\) Gerson (1990: 121; cf. 84-9 and esp. p. 85 n. 3) appeals to the fact that the essence of sensible substance must include matter to deny the identity of form and essence in sensible substance. (I owe further clarification of Gerson's view on the role of matter in the essence of sensible substances to conversation.) A similar argument can be found in Frede 1987: 91. The view that the essence of sensibles must include matter is also held, e.g., by Irwin (1988: 245-7) and Cleary (1994: 35-40); though in both cases this is also taken to imply that the form must also somehow contain matter. Likewise, Morrison (1985a: 155) maintains that Aristotle cannot consistently maintain that the form is separate in λόγος from the composite, because it must be defined with matter.
since being and unity are convertible, whatever is primary being should also be primary unity. It should not be the sort of thing whose unity has a cause in some other entity. On the other hand, the genus-differentia definition that Aristotle appears to endorse as a definition of ἔσος εἰςανα is clearly a plurality. It is necessary to show somehow that the plurality in the definition of an essence is merely apparent. Aristotle's approach is to maintain that the definition of a form or essence is properly its last differentia. The genera are already implied by the differentia: they have nothing independent to contribute to the intelligibility of the form or essence being defined. This is consistent with the approach we have already seen in the aporias: the genera are not genuine principles and causes, and so should not appear in a formula that aims to define an entity in terms of its causes.

The elimination of the genera from the definition of an essence is also compatible with Aristotle's arguments in Meta. 7.13-14 that neither the universal nor the genus can be ὀσια: neither qualifies as the sort of principle that Aristotle is looking for in his investigation into primary ὀσια. At the end of Meta. 7.13, however, Aristotle recognizes that the elimination of universals as ὀσια and causes appears also to eliminate the possibility of definitional complexity. If the universals were ὀσια and principles, entities would presumably be defined with the various univocal genera that would constitute explanations of the nature and properties of the entity at each level of generality. All mammals would be mammals and have the properties of mammals because of the genus of mammality, and so that genus would enter into the causal definition of every mammal. The implication of Meta. 7.12, however, is that mammality and its properties are already implicit in the last differentia of every species of mammal: to add the genus to the definition is not to add anything more than what is already in the differentia.

42 Meta. 7.12.1038a18-34, esp. 1038a19-21, 25-6. In simply identifying the form and the last differentia in these lines Aristotle is perhaps not distinguishing as carefully as he might between the object of the definition and the definition itself. The form, i.e., the object of the definition, is a unity because its definition can be given wholly in terms of the last differentia. The reduction of the definition to its differentia is perhaps the reason for Aristotle's hedging in Meta. 7.10 when he leaves open the possibility that only some of the parts of the definition are prior (1035b14, b19). The genera are already implied in the differentia and hence are not themselves prior. Aristotle also builds up a case for the identification of form, actuality, and differentia from Democritean starting points: Meta. 8.2.1042b11ff.

43 That Aristotle is interested in ὀσια in its causal sense here is made evident in Meta. 7.13.1038b6-9.
In other words, the form and its definition will be incomposite (ἄσώνθετον, 1039a17-18); but such things cannot strictly speaking be objects of definition (a18-23).

When Aristotle raises the aporia again in *Meta.* 8.3, he seems to think that the solution is to render definitions as accounts of either sensible or intelligible composites, i.e., of composites of form and sensible or intelligible matter (1043b28-32). In other words, by *Meta.* 8.3, sensible and intelligible matter have come to be seen as not as impediments to definition (as they are in *Meta.* 7.10-11) but rather as the factors that make for complexity and hence also definability. There appears to be a dialectical progression from the view that form and essence is the sole object of definition to the view that definitions are properly of form-matter complexes. We shall argue in our account of *Meta.* 7.17 that the essence of a sensible substance is not the object of its definition but rather the principle in virtue of which the sensible substance is something definable. The account of the definition of the composite in *Meta.* 8.2-6, which solves the aporia of *Meta.* 7.13, is thus dependent for its possibility on the account of essence as cause of intelligibility in *Meta.* 7.17.

In *Meta.* 8.2 and *DA* 1.1 Aristotle indicates that τί ἐστι is equivocal: it may be stated in terms of the matter and potency, the form and actuality, or the form-matter composite. The first of these is included in the list only to be rejected: a definition in terms of an entity’s matter is not properly a definition of that entity, and so no scientist defines things only in terms of their matter (*DA* 1.1.403b9-10). The physicist uses some version of the third kind of definition; he defines things as composites of form and proximate matter. This formula, however, is not the formula of the τί ἢν εἶναι. To the extent that there can be a formula of τί ἐστι in the sense of τί ἢν εἶναι, it must include only the nonmaterial parts of the entity.

Such, at any rate, is our sketch of the solution that allows us to take Aristotle at his word both when he maintains that essence is to be identified with form, soul, and primary ὁμοια; and when he maintains that sensible substances must be defined with their matter. The essence of a sensible substance is a principle of a sensible substance, but it is

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44 *Meta.* 8.2.1043a14-26, *DA* 1.1.403a29-b12 (notice the use of the house example in both cases).

not itself a sensible substance nor is it the object of definition for the science that studies sensible substance, physics. A response to the objections against identifying immanent form as an instance of primary οὐσία requires that one clarify the sense in which immanent form is and is not primary. This task will occupy the rest of the chapter. It is necessary first to consider the criteria for primary οὐσία and the extent to which immanent form satisfies these criteria. We shall then isolate the sense in which form is primary: it provides the ultimate explanation for a material composite’s being a certain kind of thing, and thus is an irreducible part of the explanation of sensible substance’s being. Finally, we shall investigate the relation between a sensible substance and its form, with particular emphasis on the question whether the actuality that is the form can be distinct from the composite whose being and hence also actuality it is responsible for.

IV

Up to this point we have been concerned primarily with the identity of essence and primary οὐσία, and have argued that both immanent and separate form are identical to their essences. In so doing we have largely ignored the other criteria of substantiality and the question of the substantiality of sensible substance. However strong the textual evidence for the identity of primary substance, form, and essence may be, nevertheless it is clear that with respect to some of the criteria of substance, the sensible composite is a much better candidate than its form. In particular, the criteria established in Meta. 7.3—the composite is a ὑποκείμενον that is separate and a “this”—strongly favour the composite at the expense of the form. In what follows we shall attempt to show why the sensible composite is not the attractive candidate for primary substantiality that the criteria in the early chapters of book 7 would seem to make it. We shall emphasize two things in particular. The first of these is the causal priority of form—immanent and separate—to the composite. What makes an instance of οὐσία primary is not only its meeting the criteria of substantiality but its doing so primarily and in its own right. The second consideration arises out of the πρὸς ἐν character of being and substantiality. If being and οὐσία are not univocal, and primary being and substantiality is not found in sensible substance, then the
substantiality of sensible substances will not only be dependent on that of primary substance but will also be substantiality only equivocally.

A substance, Aristotle tells us in *Meta. 7.1*, is a τί ἐστι and τόδε τι (1028a11-12). In treating the identity between primary substance and essence we have emphasized the sense in which primary substance is the primary τί ἐστι, the primary object of definition. A substance must, also, however, be a "this," an entity that is in a sense particular rather than a universal predicate. Closely connected to the "thisness" of substance is the criterion that substance must be separate (χωριστόν): in *Meta. 7.3* matter is ruled out as a candidate for primary substantiality because substance must be "separate and a 'this'." There are at least three senses of separation in Aristotle, all of which contain the

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46 Of the several possible translations of τόδε τι, consensus has come to favour this one. See, among others, Ross 1924 (and the ROT), Apostle 1969, Owens 1978\(^1\), Graham 1987, Irwin 1988, Gerson 1990, Kirwan 1993\(^2\), Bostock 1994, and Code 1997 ("some this"). Frede and Patzig (1988: ii. 15) are inclined to favour the rendering "this something" (ein Dies von der Art), though they acknowledge the existence of textual evidence in favour of the other reading. For brief discussion see Graham 1987: 235-8. Whatever the correct reading of τόδε τι, it is clear that substances must be both a "this" and a "what," a τόδε and a τί ἐστι. The fact that Aristotle finds it necessary to mention both τόδε τι and τί ἐστι in *Meta. 7.1* suggests that the reading "a this" is to be preferred; see also *Meta. 7.4.1030b11-12*, 8.6.1045b1-2, 9.7.1049a35. As Graham points out, Aristotle does have a phrase for "this something," i.e., τόδε τοιόνδε (7.8.1033b23-4).

47 *Meta. 7.3.1029a26-30*. Cf. 5.8.1017b25, 7.14.1039a30-2, 7.16.1040b28, 8.1.1042a28-31, 13.10.1086b17-19. In four of these passages (5.8, 7.3, 7.14, and 8.1) separation is explicitly connected to "thisness": individuality is also important in the other two passages. The two criteria are also connected in different contexts at GC 1.3.317b28, *Meta. 10.1.1052b14-17*. I am indebted to Donald Morrison's list of occurrences (1985b: 100-5) in compiling the references to separation in this note and the notes that follow.

The translation of χωριστόν is problematic: grammatically it may mean either "separable" or "separate." Morrison's 1985b is a very helpful study of Aristotle's use of this word. To summarize its conclusions: Before Aristotle there are no identifiable uses of χωριστόν in the major authors, and only four uses of other words based on χωριστό- (p. 91). It is thus likely that Aristotle himself coined the word. If so, Morrison argues, it is likely that word has a definite sense: either "separate" or "separable," but not both. From a survey of all the uses of χωριστό- in the corpus, Morrison concludes that some 30 percent require the translation "separate," whereas twelve passages (less than 10 percent) constitute possible counterexamples for this reading (p. 93). Morrison attempts to deal with the counterexamples individually (pp. 96-99). It is not clear that all of Morrison's arguments are equally convincing; on the other hand, it is significant that none of the counterexamples appear in the *Metaphysics*, and the extremely problematic passages (e.g., GC 316b3) belong to works generally believed to predate it. Even if one does read χωριστόν as "separable," it seems that in order for two things to be separable in the way that Aristotle wants them to be, they must already in some sense be distinct, i.e., separate. The sense of separability that Aristotle would be interested in is the sense in which something can retain its identity apart from other entities, which implies that if it is "separable," it must have some distinct identity in the first place.
implication of some sort of independence. The sensible composite is separate ἀπλῶς; its form is separate only in λόγος. Thus while both the form and the composite are separate and τὸδὲ τι, separation belongs to the composite unqualifiedly and only qualifiedly to its form.

The last criterion is introduced at the beginning of Meta. 7.3 to serve as an initial “sketch” (1029a7-8) of what a substance must be. A substance is μάλιστα an underlying subject, a ὑποκείμενον of which other things are predicated but which itself is not predicated of anything else (1028b36-1029a9). It may be so in one of three ways, either as form, matter, or composite. Matter is eliminated as not separate or a this, leaving the composite and the form. Aristotle also eliminates the composite on the grounds that it is “posterior,” leaving one with the implication that the primary ὑποκείμενον must be the form. Prima facie, this procedure is extremely odd. It is not difficult to understand the elimination of matter, if it is necessary that nonsubstantial predicates be predicated of something and matter is not a “something.” But it is not clear why the posteriority of the sensible composite should make it a less attractive ὑποκείμενον than the form. The form is initially a very unattractive candidate for the status of ὑποκείμενον: not only is it predicated of something else, but, if we are right in identifying form with essence, it is very difficult to see how anything can be predicated of it. An essence, as we shall see in more

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48 Meta. 10.1.1052b16-17: things can be separate (or nonseparate, if one follows EJ rather than A, Ross, and Jaeger) either τοῖς, εἴδει, or διάφορος. The sense in which separation implies independence is disputed; see, for instance, Fine 1984, Morrison 1985a (with reply by Fine and rejoinder).
49 Meta. 8.1.1042a28-31; see also Meta. 5.8.1017b25, Phys. 2.1.193b4, 2.2.194b12. The 8.1 passage indicates that some forms are separate ἀπλῶς; this presumably refers to Aristotle’s god (i.e., as we have elsewhere referred to it, “unqualifiedly separate form”).
50 Spellman (1995: 97) argues that separation ἀπλῶς need not connote the primary sense of separation. Although she points to several cases where ἀπλῶς is not used in this sense, it is difficult to see how these readings could be applied to the Meta. 8.1 passage.
Aristotle does not give a clear exposition of the meaning of “separation in λόγος.” We argued in section II above that the form’s separation in λόγος entails that it is not definitionally dependent on anything else: it is not defined as a part or attribute of any other substance, nor is it dependent for its intelligibility on the matter of the substance whose form it is. This has two important consequences: (1) because the form is not dependent on anything else for its intelligibility, it may be a principle of intelligibility; and (2) because it is not dependent for its intelligibility on the individual substance whose form it is, specifically the same form may be found in many substances of the same kind.
51 Cf. Code 1984: 11-12. Graham (1987: 233-4) and Bolton (1995: 448-50) point to several difficulties in identifying form and underlying subject. Bolton further points to difficulties in identifying form with τι ἔστι: unlike its form, the τι ἔστι of a sensible substance must somehow include not only the form but also
detail, is an immediate unity. The essence of human being is immediately-just-a-human-being and nothing else; to predicate whiteness of the essence of human being is either to make a category mistake or to say that a human being is essentially to be white.\(^{52}\)

A case can be made in defense of immanent form’s status as a substrate. If it is necessary that substance be a subject capable of receiving predicates distinct from it, this would imply that not only immanent form but also separate form is not strictly speaking a substrate. Separate form is unqualifiedly actual and unqualifiedly simple: as such, it should not be in potency to any further accidental actualization, nor should it contain any plurality.\(^{53}\) This does not seem to be a reason for treating separate form as a defective instance of substance; certainly Aristotle himself is willing to call separate form “primary substance” (12.8.1074b9). Neither instance of what Aristotle calls πρῶτη οὐσία is itself capable of receiving attributes distinct from it: contrary to the initial sketch of substantiality in *Meta*. 7.3, being a subject of this sort is not essential to substantiality.\(^{54}\)

If so, it is rather the other aspect of subjecthood, not being predicated of any other subject, that is essential for substantiality. Separate form fulfills this criterion unqualifiedly, immanent form in a qualified sense. As Aristotle indicates in *Meta*. 9.7 (1049a27-36),

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\(^{52}\) Unfortunately, there is no statement of this doctrine in so many words. But cf., for instance, *Meta*. 7.6.1031a19-28, and *Meta*. 8.6.1045a36-b7, quoted and discussed pp 268-9 below. The former passage indicates that a man and a white man are numerically the same—thus it is possible to say that a man is a white man—but the essence of a white man must be different from that of a man. The essence of man itself cannot in any sense be white. (Strictly speaking, there is no essence of a white man, though there is an essence of a white surface in a qualified sense.) See also Granger 1995.

\(^{53}\) *Meta*. 12.6.1071b17-22, 12.7.1072a31-4. See Scaltsas 1994: 122-5. In my view, the unqualified unity that Scaltsas attributes to sensible substances, and that requires that abstraction of parts and attributes not have a real correlate in some distinction within sensible substance (p. 111), should be attributed only to substances that are identical with their essences, i.e., immanent and separate form. This will certainly be the case if, pace Scaltsas, a plurality in abstraction is impossible in the absence of some real distinction within the concrete individual. One may agree with Scaltsas’s conclusion that “Aristotle reached the profound realization that for the subject to be something in itself, *the essence cannot belong to the subject, but must be the subject*” (p. 3), provided that one recognizes that the only thing that is both unqualifiedly a subject and unqualifiedly identical to essence is separate form. See further notes 52 above and 140 below.

\(^{54}\) If this is correct, then it would seem that the importance of being a subject for predications is overemphasized by many commentators, e.g., Scaltsas 1994: 1-3; Irwin 1988: 170-2, 179-80, 204-20; Frede 1987: 75-8. Code (1984: 11-12) emphasizes both that the properties predicated of the composite are not predicated of the form, and that the composite owes its subjecthood to the form which is thus the primary subject. Code does not, however, go as far as to suggest that the form *cannot* itself be a subject for predications.
there are two different kinds of ὑποκείμενον. The form-matter composite is τόδε τι and a subject for accidents, whereas the matter in itself is not τόδε τι but rather a ὑποκείμενον for something that is “a form and a this” (εἴδος τι καὶ τόδε τι). Immanent form’s claim to be a ὑποκείμενον might thus be based on the fact that it is at least not predicated of anything that is itself properly substantial.\(^{55}\) Just as the form of a substance need not be defined in terms of the substance’s material components—the form is separate in λόγος—so the form does not constitute an attribute of these components.\(^{56}\) Nevertheless, just as immanent form is only qualifiedly separate, it is only qualifiedly a substrate. In sensible substances, both criteria apply unqualifiedly only to the composite.\(^{57}\)

The point of this brief exposition is that, if one is to understand why Aristotle maintains that the primary οὐσία of a sensible substance is its form and essence, one cannot appeal solely to the criteria of substantiality. With regard to the criteria developed in Meta. 7.1-3, the composite seems to be an equally good or better candidate for primary substantiality than the form. Yet, as we have seen, the composite is dismissed as

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\(^{56}\) Although there is not space here for an extensive discussion of what distinguishes the form and essence of a material substance from the nonsubstantial attributes of the same substance, it seems likely that separation in λόγος or lack thereof will be an important criterion. It seems to be Aristotle’s view that not being defined in terms of anything else is at least a necessary condition for not being a predicate of anything else, whereas substrates will characteristically be such that their nonsubstantial attributes are defined in terms of them. Being separate in λόγος would thus seem to be at least a necessary condition for being a substrate, because being separate in λόγος is a necessary condition for not being logically posterior to anything else. One is tempted to call the form the “logical substrate” for the substance, in the sense that the parts and the attributes must be defined in terms of the form and so the form is logically prior to all of them.

\(^{57}\) The relative claims of the form and the composite to be τόδε τι are unclear. For some commentators, the fact that form is called τόδε τι is sufficient to indicate that it must be particular; see, e.g., Frede 1987: 77-8, Irwin 1988: 218-19. The claim that form is a “this” becomes much more difficult to sustain if forms are universals, as Graham (1987: 238-9) points out. The textual evidence in books 7-8 is insufficient to determine whether immanent form is τόδε τι only in a qualified sense, although (as we have seen) it is clearly τόδε τι in some sense.

Owens (1978: 389-95) emphasizes that, although a “this,” the form is not primitively individual. It is also the basis for scientific universality insofar as it is the same in λόγος or εἴδος to all other forms of its kind. Nevertheless the form is not actually a universal: it is not numerically the same form that is the primary οὐσία of all the members of a species. Otherwise the οὐσία of all the members of the species would be numerically one, with the result that the species as a whole would constitute a numerical unity: Meta. 3.4.999b20-2, 7.13.1038b14-15, 7.16.1040b16-17. See our discussion of the eleventh aporia (section VII of chapter 6, above) and note 63 below.
We shall argue that Aristotle assigns priority to the form because he is not concerned only to determine what things meet the criteria for substantiality. In order to determine whether or not something is an instance of primary οὐσία, it is necessary to determine whether it meets the criteria of substantiality primarily and in its own right (πρῶτον καὶ καθ’ αὐτό) — otherwise put, qua itself (ἡ αὐτό) — or derivatively and in dependence on the causality of some other entity. That is, if the composite meets the Meta. 7.3 criteria for substantiality, but does so only by being dependent on some other instance of substance that meets these criteria qua itself, then the composite cannot be primary substance.

This may be most easily appreciated with a comparison to an example from the Posterior Analytics. It is true that an isosceles triangle is a triangle and has angles equal to two right angles; triangularity and its attributes belong to it no less than to the genus of triangle. Nevertheless it is the genus of triangle, and not isosceles triangles in particular, to which these properties belong ἡ αὐτό; and just as the presence of triangularity and its attributes in isosceles triangles is due to the genus of triangle, so substantiality in sensible substances is due to primary substance. The search for primary οὐσία is at once the search for the kind of οὐσία that explains why sensible οὐσία has these properties and for the instance of οὐσία to which these criteria apply primarily and in their own right.

We shall see that the causal posteriority of the composite to its form also implies that it does not share in substantiality in the same sense that immanent and separate form do. “Triangle” is predicated univocally of the genus and its species; substance, by contrast, is a πρὸς ἐν equivocal. The sensible composite will thus be “imperfectly real or actual” in comparison with primary substance. Since οὐσία is a πρὸς ἐν equivocal, the causal

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58 The composite is “posterior and clear” (7.3.1029a31-2). This is foreshadowed by Aristotle’s remark that the form is prior to the both matter and composite, for the same reason (1029a5-7).

59 See APo. 1.4.73b25-74a3 with Meta. 7.6.1031a27-31, 1032a4-6, discussed in section I above.

60 Code (1997: 356-60) argues that as primary οὐσία form is both the explanation of the being of sensibles and the entity that answers to the criteria of substantiality. While Bolton (1995) recognizes that primary οὐσία is substance as it is most known in itself (pp. 438-9), he maintains that the Meta. 7.3 criteria of substantiality need not apply to primary substance (pp. 432-3, 441-2). See our discussion, pp. 258-9 below.

61 Gerson 1990: 87. Cf. Aristotle’s comment that the form is μᾶλλον ἐν with respect to both the matter and the composite, 7.3.1029a5-7.
posteriority of the composite will also imply that it is substantial only in a derivative sense.\footnote{See pp. 282-3 below.}

If our account of the relation between primary and sensible substance is correct, then, we should expect to find at least two kinds of substances, one kind which possesses substantiality primarily and \( \tau \alpha \nu \tau o \), and another which possesses it derivatively and through causal dependence on primary substance. Aristotle's account of primary substantiality, however, is not as straightforward as this general picture might suggest. Ideally, one would expect all the criteria for primary substantiality to coincide in one kind of substance, which would both unqualifiedly fulfill the criteria of substantiality and explain the substantiality of the derivative instances of substance. In the event, Aristotle does not seem to provide us with a picture of this sort. The explanation of substantiality in sensible substances requires not one but two sorts of principles, both of which are essences and thus instances of primary \( \nu \sigma o \alpha \), but only one of which is unqualifiedly separate from matter. Moreover, Aristotle's account of the role of immanent form in the science of being is far more developed than his account of unqualifiedly separate form: the role of the latter as the nature and first principle of being must be guessed at from various texts that do not deal directly with the topic.

For the remainder of the chapter we shall consider the way in which the forms of sensible substances are instances of primary substance and principles of being. We shall argue, in particular, that it is the form and essence of a sensible substance that is responsible for the substance's being some separate and intelligible "this" in the time between its generation and its corruption. The form is primary in the sense that it is not possible to explain the intelligible content provided by the form by reducing it to another principle. In particular, separate form cannot serve as principle of intelligibility for sensible substances: separate form is not an exemplar cause.\footnote{That it cannot be so is perhaps best understood if one appreciates the implications of Aristotle's principle that that of which the \( \nu \sigma o \alpha \) is one, is itself one \( (\text{Meta. 3.4.999b21-2, 7.13.1038b14-15, 7.16.1040b17}) \). An exemplar cause of sensible substances in the unmoved mover would as the cause of their being be their \( \nu \sigma o \alpha \). But being itself a unity, it cannot equally be the \( \nu \sigma o \alpha \) of a plurality of substances. This point is made with respect to a specific plurality by Gerson (1990: 139); it applies with even more force to a numerical plurality.} However, scientific intelligibility...
requires not only that there be a form which is the principle of intelligibility but also that
the species which is known be eternal: scientific truths must be necessary. It is this, we
shall argue, that is guaranteed by the causal activity of the unmoved mover. We shall
consider the metaphysical role of the unmoved mover in our last chapter.

V

We have suggested that Aristotle’s most developed account of primary ὠσία as a
cause is in his account of the form of a sensible substance as that substance’s ὠσία and
the cause of its being (αἰτίων τοῦ εἶναι). This theme is developed in the last chapter of
book 7. The material in the chapter requires two quite different kinds of approach. It is
necessary to focus, on the one hand, on questions concerning the relation of Meta. 7.17 to
the Posterior Analytics and the methodological books of the Metaphysics; and, on the
other hand, on substantive issues to which Aristotle is applying this methodology. It is
necessary to show not only how the methodology and explanatory structure of a causal
investigation into substantiality relates to that of the Analytics, but also why a causal
investigation into the substantiality of substance is necessary in the first place. We shall
begin where Aristotle does, by considering the questions of methodology.

Aristotle begins Meta. 7.17 with the suggestion that it is time to make a “new
start” in the investigation into ὠσία, suggesting that by making this new start we shall
also begin to grasp substances that are separate from sensible substances.64 The new start

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64 Meta. 7.17.1041a6-9. On the terminology of a “new start” cf. DA 412a3-6, NE 1174a13-14, EE
1218b31-2 (from Irwin 1988: 44). Notice that while Irwin correctly identifies Meta. 7.17 as a new start in
this list, his ex professo treatment of the central books ignores this passage and suggests that the “new
start” is located rather in the identification of substance as a subject and essence in Meta. 7.3-6 (pp. 221-
2). Aristotle’s indication that Meta. 7.17 will also shed light on separate substance (ἐκ τούτον ἐκ ταύτ
δήλων καὶ περὶ ἐκείνης τῆς ὠσίας ἤτις ἡ ἑστὶ κεχαρισμένη τῶν αἰσθητῶν ὠσίων, ἀβ-9) suggests
that the investigation is meant to illuminate both immanent and separate form as a principle. Presumably
by understanding the causality of immanent form, we will be in a better position also to understand the
causality of separate form.

Bostock (1994: 236) and Graham (1987: 257-8) see Meta. 7.17 as something separate from what
precedes it. The fact that Meta. 7.17 represents a new start is perhaps responsible for some of the
appearance of discontinuity. Nevertheless, given that the composite is rejected as causally posterior in
Meta. 7.3, the rest of Meta. 7 must be an inquiry into some ὠσία that is causally prior to the composite,
and so chapters 3-16 have all along implicitly been dealing with ὠσία in its causal sense (cf. Code 1997:
6) on 7.3.1028b35ff.
apparently involves considering substance in its capacity as a principle and cause (1041a9-10). Substance in this sense will thus serve to explain some phenomenon in something else:

> Now the διὰ τι is always sought in this manner: “Why does something belong to something else?” [διὰ τι ἄλλο ἄλλο ὑπάρχει]. For to inquire why a musical man is a musical man is either, as we have just said, to inquire why a man is musical, or something else [ἡ ἄλλοι].

But to inquire why something is itself [διὰ τι αὐτὸ ἐστὶν αὑτῷ] is to inquire into nothing. . . . (7.17.1041a10-15)

A request for causal explanation is always a request for an explanation of why some x belongs to y, where x and y are not simply identical. If something is already identitatively just being-man or being-horse, there is no further explanation for its being this kind of thing (8.6.1045b4-5). This implies that the principles of substance are not meant to explain their own substantiality: if there are principles and causes of substantiality, it is because there are substances to which substantiality does not belong primarily. This in turn implies that there must be a distinction between the principles of substantiality and the substantiality they are meant to explain. It is difficult to see how this could be so, for instance, if substantiality were a genus predicated univocally of all substances.

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65 I am tempted to read this as “. . . to inquire why a musical man is a musical man is surely [ἡτοι] to ask why a man is musical, i.e. [ἡ], why a man is something ἄλλο (rather than αὑτό).” Although this reading is grammatically difficult and has not found support in the commentaries, it is suggested by Aristotle’s insistence on the contrast between αὑτό and ἄλλο and would explain a passage that the commentators have often found puzzling (see, e.g., Frede and Patzig 1988: ii.311). If my reading is correct, translators have been misled by the apparent ἡτοι . . . ἡ construction at 1041a13-14.

66 Aristotle’s own explanation makes reference to the necessity of knowing the δτι before we inquire into the διὰ τι (cf. APo. 2.1-2, 2.8). Ross (1924: ii.222) suggests that the relevant δτι and διότι is the fact that the thing is the same as itself (a16-20): we must know that something is itself in order to inquire why it is itself, but once we know this we already know the διότι.

67 More generally, it does not seem that any principle of intelligibility can be univocally predicated of that of which it is the principle. This argument against a generic account of the principles may be added to those discussed in section IV of chapter 6 and section III of chapter 7. The problem of univocal predication is one of the criticisms that Aristotle directs against Platonic Forms. See Meta. 1.9.991a2-8, 13.4.1076a33-b3, Top. 6.10.148a15-22, 7.4.154a15-20; Gerson 1994: 88-9 and 257 n. 19. Owen (1960: 181-90) raises the question why Aristotle does not allow the Platonists to appeal to πρὸς ἐν to defend the Forms and concludes that Aristotle had not yet fully worked out this doctrine when he was making these criticisms. Owen perhaps underestimates the extent to which Aristotle sees univocality as essential part of the theory of Forms; to abandon univocality would require at least a radical re-thinking of the causal relation between a Form and its instances. If so, there is no reason to think that Aristotle had not yet developed πρὸς ἐν equivocity in Meta. 1 and 13 and Aristotle’s approach there is not necessarily evidence for an early date for these books.
Otherwise put, explanation is necessary when there is some complex. The clearest examples of such complexes are those from the *Posterior Analytics*, where attributes are shown to belong to subjects. Aristotle recalls one of these examples in *Meta*. 7.17: to explain thunder is to explain why there is noise in the clouds (1041a21-6). We are not asking why the moon is the moon or why clouds are clouds, but rather why the moon is being eclipsed or the clouds are thundering. It is obvious in these cases that we are not attempting to explain why \( x \) is itself, but rather why \( x \) is (accidentally) some \( y \) not identical to itself. Aristotle goes on to suggest that the same model may be applied to substantial explanation. In the science of substance, the explanandum becomes not the fact that some attribute belongs to a subject, but rather the existence of the subject itself, if the subject is complex. Aristotle’s point here is that the subject *is* complex: just as one might seek to explain why the moon is eclipsed, so the case of a subject like a house one might seek to explain why the material parts that combine to make a house *are* a house (1041a25-7; cf. b5-6).

Having made this general point, Aristotle goes on to distinguish this investigation from its counterpart in physics:\(^69\)

It is evident, then, that we are seeking the cause . . . , which is in some cases the final cause (as perhaps in the case of a house or a bed) and in others the first mover

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\(^{68}\) Cf. *APo*. 2.8.93a29-b14 for this example and that of a lunar eclipse (used in the *Meta*. at 8.4.1044b8-15). A definition of thunder will serve as the middle term for a demonstration that proves that thunder belongs to clouds, and a definition of eclipses will do likewise for a demonstration that eclipses belong to the moon. Since they predicate attributes of a subject the demonstrations are \( \tau\iota \, \kappa\alpha\tau\alpha \, \tau\iota\nu\omicron\omicron\zeta, \xi\lambda\lambda\omicron\, \kappa\alpha\tau\, \xi\lambda\lambda\omicron\nu \) (1041a23, 25-6). See also Bolton 1995: 452-3. Bostock (1994: 237-8) overlooks the parallel in the *APo*. in claiming that the investigation into the existence of thunder does not investigate the cause of a subject-attribute relation (cf. Frede and Patzig 1988: 312). On Aristotle’s use of “noise” as equivalent for “thunder” (1041a25, 93b11-12) see Apostle 1982: 234 n. 23; Landor 1985: 130. Scaltsas (1994: 61-3) argues that Aristotle means to imply that the form of a substance explains all the predications that are true of it. This does not seem to be justified by the context: Aristotle is rather using the obvious complexity of a sentence like “the moon is undergoing an eclipse” to illustrate the fact that explanation necessary implies complexity. He then goes on to show that an analogous complexity obtains in sensible substances. It is only in the latter case that the form is the cause.

\(^{69}\) I take this to be the explanation for the fact that in its general outline, 1041a25-b9 is largely repeating points already made at 1041a10-27 (cf. Bostock 1994: 242). At 1041a10-27, as we have seen, Aristotle is making the general point that all explanation requires complexity, and finishes by briefly indicating that this also applies to substantial explanation. Starting at a27, Aristotle is concerned to identify precisely what kind of explanation is involved, though he does repeat themes from the former passage (as at 1041a32-b4).
(for this too is a cause); but while we seek a cause of this sort in generations and
destinations, we seek the other kind also in cases of being.\footnote{Meta. 7.17.1041a27-32: φανερὸν τοῖνοι δὴ ζητεῖ τὸ ἀιτίον [τοῦτο δ᾿ ἦστι τὸ τί ἢν εἶναι, ὡς εἰπεῖν λογικῶς.] δὲ ἐκ ἐνιῶν μὲν ἦστι τίνος ἔνεκα, οἷον ἰσος ἐπί οἰκίας ἢ κλίνης, ἐπὶ ἐνίων δὲ τί ἐκίνησε πρῶτον αἰτίον γὰρ καὶ τοῦτο, ἀλλὰ τὸ μὲν τοιοῦτον αἰτίον ἐπὶ τοῦ γίγνεσθαι ζητεῖται καὶ φθείρεσθαι, ἀλλὰ τὸν δὲ ἐπὶ τοῦ εἶναι.}

The explanation of per se attributes is familiar from Aristotle’s examples of thunder and
eclipses in APo. 2.8; now the point is to show that there can also be causal explanation of
the phenomenon of being and substantiability. It is not clear how exactly the passage is
making the point, because the referents of “a cause of this sort” and “the other kind” are
not entirely clear. As Ross points out, they are most naturally construed as referring
respectively to the efficient and final causes.\footnote{Ross 1924: ii.223; this reading is reflected also in Apostle’s translation and commentary ad loc. While Bostock does not comment on the passage, his translation seems to require this interpretation. Frede and Patzig (1988: 313) suggest that the division may rather be between the efficient and final causes as causes of generation and the \( τί ήν εἶναι \) (a28) as a cause of being. However, the considerations that might lead one to excise this reference to \( τί ήν εἶναι \) in the first place also cause difficulties for Frede and Patzig’s interpretation: the excised passage seems to suggest that the \( αἰτίον \) and thus the \( τί ήν εἶναι \) is itself either a final or efficient cause, not something to be distinguished from them. Frede and Patzig raise the possible objection that Ross’s reading does not allow for the causes of mathematical. It is not clear, however, that mathematical do have a cause of being in their own right: they exist as attributes of sensible substances, and the elements of their definition are logically but not really prior to them (13.2.1077a36-b12). Unmoved actualities that are prior to sensible substances in all the senses of priority (i.e., immanent and separate form; Meta. 9.8), also presumably do not have causes of their existence; cf. Meta. 8.6.1045a36-b7 discussed pp. 268-9 below.} On the other hand, it is unclear how one is
to take the suggestion that the cause of being—what Aristotle will shortly call the \( αἰτίον \)
\( τοῦ εἶναι \)—is a \textit{final cause}.

Aristotle continues by reminding us that causal investigation requires complexity: if
one seeks the \( τί έστι \) of a man without “properly distinguishing,” the investigation borders
on an investigation into nothing (1041a32-b4). It is necessary to make clear the fact that
the investigation is into why “these things are that” (6το ήτο τότε, b2): what is sought is

\footnote{Meta. 7.17.1041a27-32: φανερὸν τοῖνοι δὴ ζητεῖ τὸ αἰτίον [τοῦτο δ᾿ ἦστι τὸ τί ἢν εἶναι, ὡς εἰπεῖν λογικῶς.] δὲ ἐκ ἐνιῶν μὲν ἦστι τίνος ἔνεκα, οἷον ἰσος ἐπί οἰκίας ἢ κλίνης, ἐπὶ ἐνίων δὲ τί ἐκίνησε πρῶτον αἰτίον γὰρ καὶ τοῦτο, ἀλλὰ τὸ μὲν τοιοῦτον αἰτίον ἐπὶ τοῦ γίγνεσθαι ζητεῖται καὶ φθείρεσθαι, ἀλλὰ τὸν δὲ ἐπὶ τοῦ εἶναι.}
an explanation of the fact that a plurality of elements together constitute a substantial unity. The explanation for this unified plurality is ωσια and τι ἢν εἶναι.

Since the being of the thing must already be given, clearly one is investigating why the matter is. For instance, why are these things ταοδι a house? Because the essence of house (ὁ ἢν οἰκίας εἶναι) belongs to them. Or why is this thing a man? or why is this body something existing in this way? So that we are seeking the cause of the matter’s being something . . . , and this is ωσια.

This relatively short text brings together most of the themes necessary for understanding the relationship of Aristotle’s project in the central books to his account of science in the Posterior Analytics and of the science of substance in particular in Meta. 6.1. In short, the passage describes a progression from the knowledge of the εἰ ἐστι of sensible substances to the explanation of this εἰ ἐστι, which is the same as to explain their τι ἐστι. We shall explain how this is so in what follows.

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72 The phrase ταοδε τοοδε anticipates the question, “Why are ταοδι a house? (i.e., a τοοδε)” (b5-6). The explanation in this case is the τι ἢν εἶναι of a house. One might ask why one cannot inquire into the τι ἐστι of the essence of the house, as opposed to that of the complex composite house. The answer is perhaps that once one is aware of the δι of the τι ἢν εἶναι of the house, one cannot still be ignorant of its τι ἐστι. Recall that a grasp of the δι requires that one already have some grasp of τι ἐστι (93a22, a29). If the τι ἢν εἶναι is not itself a complex, however, it is difficult to see how one could have some grasp of the τι ἐστι without simply knowing its τι ἐστι as a whole. In other words, there is no progressive investigation or teaching of a simple like a τι ἢν εἶναι (1041b9-11). See further pp. 266-7 below. It is probably significant that Aristotle’s examples of material components are basic elements rather than parts; see note 94 below.

73 Meta. 7.17. 1041b4-9: ἐπει δὲ δεὶ ἔχειν τε καὶ ὑπάρχειν τὸ εἶναι, δῆλον δὴ διὰ τοῦ τῆς ὑλῆς ἂν εἶναι διὰ τοῦ τῆς ὑλῆς ἂν ἂν εἶναι. καὶ ἀνθρώπος τοῦ, ἢ τὸ σώμα τοῦ ἄνθρωπος ἔχειν; ἦν τὸ ἀνθρώπος ἂν ἂν εἶναι τῆς ὑλῆς τοῦ ἂν ἂν ἂν εἶναι τοῦ ἀνθρώπου τοῦ ἂν ἂν ἂν εἶναι. ἦν τὸ ἂν ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶναι τοῦ ἂν ἂν ἂν εἶ

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This passage presents numerous textual problems. I am not convinced that we need insert an additional τι at 1041b5 (pace Ross, Jaeger, and Frede and Patzig): we have just been told that we are presented with a case of εἰναι and we must find some way to distinguish between the cause and the thing “acted” on by the cause. Thus in some sense we are seeking the cause of the εἰναι, and the result of the distinction is that it is the matter’s εἰναι whose cause is being sought. In order to be, matter must be something (cf. b8), but given the equivalency between being and being-something there is no need for Aristotle to be twice stating the τι explicitly. Cf. Owens 1978: 337, 376. On the other hand, I do follow Jaeger and Frede and Patzig in excising the reference to εἰναι: although Aristotle clearly intends to identify form with ωσια in this causal sense, it seems unlikely that he should have made the identification as confusedly ungrammatically as it appears in our text. Rather, Aristotle identifies ωσια with form when he identifies it with the φυσις of a sensible substance (1041b28-33; see pp. 274-5 below). Finally, the text of b6-7 is disputed. I follow Frede and Patzig’s text δοι εξον (so also Bostock) against τοοδε εξον (Ross, Jaeger), and my translation reflects Frede and Patzig’s. Ross’s text is also possible, and may be plausibly read in the way he takes it (1924: ii. 224). Related to this point is whether the text should be taken as a question or a statement: here too I am inclined to follow Frede and Patzig.
As we saw in our first chapter, Aristotle's methodology of investigation requires that one proceed from knowledge of some fact or existence (τὸ ὁτι, εἰ ἔστι) to knowledge of the cause or explanation of the fact (τὸ διότι), which is expressed in the whatness or τι ἔστι of the entity under investigation. Whether one is investigating a subject or an attribute, one must first inquire into the ὁτι or εἰ ἔστι, and inquire into the διότι or τι ἔστι after establishing an affirmative answer to the first question. Therefore, knowledge of the ὁτι must precede inquiry into the διότι and the τι ἔστι in which the διότι is expressed.

In APo. 2.8, however, Aristotle adds a crucial qualification to this picture. To know a fact is to know that something exists. Scientific inquiry into a lunar eclipse, for instance, begins with a grasp of its existence. (This is the same as the grasp of some truth about the moon, i.e., that it undergoes eclipses.) Aristotle points out, however, that knowledge of the ὁτι of an eclipse must also include some knowledge of what an eclipse is. Otherwise one would not have knowledge that an eclipse, as opposed to some other thing, exists. A grasp of the ὁτι thus also implies some kind of grasp of what the thing whose ὁτι one has grasped is: in order to genuinely know the ὁτι of something one must also grasp "something of the thing itself" (τι αὐτοῦ τοῦ πράγματος, 2.8.93a22), some part of its τι ἔστι (τι τοῦ τι ἔστι, a29). This partial knowledge of τι ἔστι serves as an initial characterization of the entity in terms most known to us, and indicates what sort of things must be explained in a scientific account of that entity. An eclipse, for instance, will initially be known as the loss of light from the moon, thunder as some kind of noise in the clouds (93a21-4).

In Meta. 7.17 Aristotle presents us with a similar picture for the inquiry into the causes of substances. We are seeking the cause (τὸ διότι) and the τι ἔστι (1041b1) of a substance, where the existence (τὸ ὁτι, τὸ εἶναι) of the substance must already be known (1041a15, b4-5). Does the grasp of the ὁτι of substances require the same kind of initial

74 APo. 2.1.89b23-35, cf. 2.8.93a16-20. Here I am using "knowledge" as its generic sense, as opposed to the technical sense of "scientific knowledge" (ἐπιστήμη).
75 This is most clearly appreciated by Bolton (1976); though Sorabji (1980: chaps. 12-13) and DeMoss and Devereux (1988) give clearer accounts of the relevant texts.
76 I take this to be the significance of ἐπεῖ δὲ δεῖ ἔχειν τέ καὶ ὑπάρχειν τὸ εἶναι (1041b4-5); cf. Owens 1978: 337 and n. 43.
characterization that the APo. requires for knowledge of the ὅτι of eclipses? Bolton suggests that the criteria for substantiality familiar from Meta. 7.1 and 7.3 constitute precisely characterizations of this sort. They identify substances using a characterization of substance as it is most known to us, and serve as starting points for an inquiry into substance as it is most known in itself.\footnote{77 So Meta. 7.3.1029b3-12: the investigation into substance begins with what is most known to us, even if it has “little or no being,” and proceeds to what is most known by nature. The Meta. 7.3 passage does not explicitly indicate what the terminus of this progression will be.}

Otherwise put, Aristotle’s procedure is not to establish certain criteria for substantiality and then determine what (if anything) fits the criteria.\footnote{78 Contrast Irwin 1988: 170, 202-7; Barnes 1995: 90-1; Wardy 1991: 97.} The criteria are introduced neither a priori nor as ἐνδοκα, but rather as a codification of our experience of substantiality in sensible substances.\footnote{79 Bolton (1995: 441): “. . . why should we accept these as criteria for being a basic reality in the first place? We are usually told that the former criterion [i.e., the ὑποκέιμενον] . . . is the one accepted by Aristotle’s materialist predecessors, the latter the one accepted by the Platonists. So Aristotle wants a candidate that will be agreed to by both of the main philosophical traditions of his day, or that will at least conform as much as possible to their different views. But that agreement or conformity would only be of interest if the two criteria are initially compelling in themselves. What, for instance, is initially compelling about the suggestion that the basic reality is an essence? . . . [association of essence and knowability in Plato] . . . Not simply because this is Plato’s view, surely. And not because this is known a priori, surely.” Bolton perhaps excessively downplays the importance of received opinion here; see our discussion in section III of chapter 4, above.} We initially characterize substance using the characteristics of sensible substance, and our initial characterization will thus apply with the most force to sensible substance: a substance must be a τί ἐστι and τὸ ὅτι, and must be a ὑποκέιμενον for accidents.\footnote{80 There is thus at least one instance of substance that does at least in some sense fit the criteria for substantiality—i.e., sensible substance—because the criteria are arrived at based on our experience of sensible substances as intelligible “theses.” The problem with sensible substances, as we have already suggested, is not that they do not fulfill the criteria of substantiality but that they are dependent on some other instance of substance for their substantiality and hence are only derivatively substances.} Bolton goes a step further in maintaining that primary substance—substance as it is most known in itself—need not have the characteristics associated with substantiality in Meta. 7.1 and 7.3. These characterizations of substance, Bolton argues, are meant not to serve as criteria for primary substantiality but rather as an account of what primary substance must explain.\footnote{81 Bolton 1995: 432-3, 441-2, 451-2. Bolton draws a parallel with eclipses: “interposition of the Earth between the Sun and the Moon” is not the sort of thing that is an instance of loss of light; rather it explains loss of light.} Among other things, this allows Bolton to maintain that primary substance is immanent form without denying the obvious point
that many of the criteria of substantiality seem much more suited to the composite than to the form.

There are at least two problems with this further claim. First, although the criteria in *Meta.* 7.1-3 do seem to describe sensible substance, they are not necessarily doing so in terms most known to sensation. Aristotle's god is certainly something separate (12.7.1073a4-5) and intelligible that is also "one in number" (12.8.1074a36-7), a "this" rather than a "such." Second, throughout book 7 Aristotle rejects unsuccessful candidates not only on the grounds that they do not explain the characteristics associated with substantiality, but also on the grounds that they do not have them. The context of *Meta.* 7.3.1029a20-8 suggests that Aristotle rejects matter as a candidate for primary substantiality not only because it cannot explain thisness, but also because it is not itself a this (cf. 9.7.1049a27-36). Likewise, the universal is rejected because it is not a this (7.13.1038b34-1039a3). Aristotle recognizes that separation and thisness should belong to primary substantiality (7.16.1040b27-30), and throughout *Meta.* 7–8 he attempts to show that immanent form can fit these criteria, even if only in a qualified sense. It appears that the criteria of substantiality developed early in book 7 will apply not only to substance as it is most known to us but also to substance in itself. Primary substance should thus both fit the criteria for substantiality and explain the presence of these characteristics in sensible substances.

Once we have grasped of the existence of substances in the appropriate way, we seek their διά τι (7.17.1041b5) and τι ἐστι (b1, b8). If Aristotle is following the model of the *Posterior Analytics*, these two should refer to the same thing: the τι ἐστι is the object of definition, and entities are defined in terms of their causes. The answer to the τι ἐστι and the διά τι questions will thus be primary οὐσία: the entity that is both primary substantiality and the cause of being and substantiality in derivative instances of substance (1041b8-9, b27-8).

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82 For discussion of the particularity of immaterial substance see especially Scaltsas 1994: 122-5. We have suggested above (pp. 248-9) that substrativeness must be reinterpreted if it is to be applied to immanent or separate form. Note that to say that the unmoved mover is a "this" is not to imply that it is an instance of some repeatable kind.
We have seen that Aristotle insists that explanation presupposes complexity. The obvious instance of such complexity is a demonstration that an attribute belongs to a subject, such as the demonstration of the ὁ τί of thunder that Aristotle alludes to at 1041a24-6. In APo. 2.8, the search for the causes of thunder is an inquiry into a definition that will serve as the major premise for a demonstration that belongs to clouds as a per se attribute (93b7-12).

\[
\begin{align*}
A & : \text{thunder (initially conceived as "noise": 93b11-12)}  \\
B & : \text{quenching of fire in the clouds}  \\
C & : \text{clouds}  \\
\text{\textit{A} belongs to \textit{B} (by definition: 93b12)}  \\
\text{\textit{B} belongs to \textit{C} (type [2] per se)}  \\
\text{\textit{A} belongs to \textit{C}}
\end{align*}
\]

The implication of Aristotle's remarks in Meta. 7.17 is that an analogous structure must be applicable if there is a causal explanation of the substantiality of substances.

Although sensible substances are in a sense not among the things that are "predicated one of another" (κατ' ἀλλήλων λέγομένως, 1041a33), nevertheless they are not unqualified simples. The central point of 1041b4-9 is that in any sensible substance, there will be some matter that is not that substance in its own right, but can be that substance through the causality of the substance's ὁσία and τί ἂν εἶναι. As one may explain why thunder belongs to clouds in an APo.-style demonstration, so one may explain why substantiality belongs to some substrate that does not possess it in its own right.

Substantiality is primary ὁσία (i.e., τί ἂν εἶναι) (e.g., δ ἂν οἰκία εἶναι, b6). Some primary ὁσία can be predicated (ὑπάρχει, b6) of some matter.

Therefore, substantiality belongs to that matter.

The major premise identifies the nature and cause of substantiality in τί ἂν εἶναι. The minor premise predicates this of the relevant matter. The conclusion predicates substantiality of the matter.

There are several significant differences between this syllogism and the demonstration of the ὁ τί of thunder. The most obvious difference is that the APo.

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83 Why is the minor premise necessary? Presumably because of the causal action of the unmoved mover, which is responsible for eternal generation and thus that each kind of form will always be instantiated in some matter. See section III of chapter 9, below.
demonstration proves that some attribute belongs to a subject that is itself already a “this” and a τι ἐστι; whereas it appears that the present syllogism explains the “thisness” and τι ἐστι of some underlying collection that is not itself a “this.” More serious, however, is the equivocal use of “substantiality” in the first premise and in the conclusion. Whatever we may mean when we say that matter possesses substantiality, we do not mean to say that it possesses substantiality in the same sense that primary ὀψια does. Unlike cases of univocal predication, the predication of primary ὀψια of matter does not make matter an instance of primary ὀψια. As we shall see at greater length as we progress, substantiality in primary substance and the substantiality possessed by the matter and composite are πρὸς ἐν equivocals.

Thus, despite the parallels between demonstration and the explanatory structure advocated for the science of the causes of substance in Meta. 7.17, it seems best not to use the terminology of “demonstration” to describe this structure. Rather, the project carried out here follows the methodology implied for such a project in Meta. 6.1. It seeks the principles and causes of some entity or phenomenon, but unlike the special sciences, it does not explain the phenomenon by demonstrating it to belong to a subject (6.1.1025b10-14). Rather, it investigates the causes of the subject’s being the sort of subject that can have demonstrable properties in the first place. It explains the τι ἐστι of the subject (1025b16-18), and in so doing also explains the τι ἐστι of the subject. The material components of a sensible substance are not that substance in their own right: it is necessary to appeal to some cause that explains why they are that substance.

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84 Aristotle distinguishes clearly between the two kinds of ὑποείμενον at Meta. 9.7.1049a27-36 (reading καθ’ ὑδ [Ross, Jaeger] instead of καθόλου [codd.] at a28).
85 Since Aristotle identifies primary ὀψια with actuality, the same πρὸς ἐν schema may help explain Aristotle’s remarks about predicating actuality of matter at 8.2.1043a5-6.
86 Pace Owens 1978: 287-96. Bolton (1995: 419, 423) appears to be taking Meta. 3.2.997b30-2 to indicate that there is a demonstrative science of substances, but he does not adequately acknowledge either its aporetic context or the fact that Aristotle appears to regard it as presenting an obstacle for his project as a whole (though see further p. 466 n. 10). In the event, Bolton does not use “demonstration” to refer to Aristotle’s methodology in Meta. 7.17.

Although the textual evidence seems to be against calling what Aristotle does in Meta. 7.17 a “demonstration,” we are not primarily concerned with finding the right word to describe Aristotle’s method here. What is necessary is rather define both the similarities and salient differences between the paradigms of demonstration in the Analytics and what Aristotle’s method in Meta. 7.17. On Aristotle’s APo. account of the causal investigation of substance, see section II of chapter 6, above.
However, our account of \textit{Meta}. 7.17 shows that it would be wrong to read \textit{Meta}. 6.1 as demanding that the science of being make a radical break from the methodology of the \textit{Analytics}. Although metaphysics' character as a science of the \textit{ti \varepsilon\sigma\tau\iota} and \textit{ei \varepsilon\sigma\tau\iota} of substance implies that its subject matter is presupposed by demonstrations of per se attributes, this does not imply that metaphysics is a second-order, "conceptual" investigation instead of a first-order investigation into the causes of a nature or phenomenon.\textsuperscript{87} The investigation of the principles of substance remains a search for the \textit{ti \varepsilon\sigma\tau\iota} and \textit{di\tau\alpha \tau\iota} of a specific phenomenon, and its explanatory structure parallels that of \textit{APo}.'-style demonstration while making the modifications required when the explanandum is no longer a subject-attribute predication. Nor does anything in \textit{Meta}. 6.1 imply that metaphysics cannot undertake tasks that require a demonstrative methodology. If, as we have argued in chapter 5, there are attributes with \textit{h\sigma\upsilon\tau\omicron\omicron\upsilon\circ} relations to being and substance, the tasks of metaphysics will include not only an investigation into the \textit{ti \varepsilon\sigma\tau\iota} and \textit{ei \varepsilon\sigma\tau\iota} of substance but also a demonstrative treatment of these attributes.

A last difficulty concerns the compatibility of a metaphysical explanation of \textit{ti \varepsilon\sigma\tau\iota} with the \textit{APo}.'s demand that the proper principles of a science not themselves find explanation in another science. The \textit{APo}. would seem to demand that the \textit{ti \varepsilon\sigma\tau\iota} of a biological organism, for instance, be a principle in the science of that genus or species of organism.\textsuperscript{88} By contrast, the \textit{Metaphysics} seems to regard the \textit{ti \varepsilon\sigma\tau\iota} of biological entities as objects of explanation in a science of being. We shall see in the next section that the reason for this is the fact that it is impossible to explain the substantiality of a sensible substance without explaining the fact that it has a \textit{ti \varepsilon\sigma\tau\iota}, and it is impossible to explain why a specific concrete substance \textit{has} a \textit{ti \varepsilon\sigma\tau\iota} without explaining why it has the \textit{ti \varepsilon\sigma\tau\iota} it has. Nevertheless, metaphysics is not primarily interested in the question of why an entity has a specific definition: it is interested not in the question why giraffes are \textit{giraffes} as in the question why they are giraffes. Furthermore, we shall see that the form which serves as a principle of intelligibility in metaphysics also serves as a final cause in physics:

\textsuperscript{87} As Irwin maintains (1988: 172-3). Aristotle's project is not precisely to identify the basic subjects of predication (hence objects of scientific knowledge), but rather to provide a causal explanation of the substantiality of these entities and hence of their capacity for being objects of scientific knowledge.

\textsuperscript{88} See chapter 1, pp. 30-2 and 47-9, and section I of chapter 6, above.
the same entity, immanent form, serves as a principle in both sciences. Moreover, the form of a sensible substance does not account for the whole of its τῇ ἔστι: the τῇ ἔστι of a sensible substance includes matter, which is a principle not in metaphysics but in physics.

In this respect the relation between metaphysics and physics may be similar to that between arithmetic and geometry. We argued in our first chapter that the geometrical point, and presumably other objects of geometry, must be defined in terms in terms of the arithmetical unit: a point is a "unit having position." The arithmetical unit serves a principle for a geometrical demonstration. Similarly, the form and primary όπως of a sensible substance serves as principle of its definition, although the definition of the physical whole includes a principle that is not itself reducible to form, namely, matter. Although form (immanent and separate) is sufficient as an explanation of the being of sensible substances, it is not sufficient to explain the phenomena studied in physics. The activities of sensible substances are characteristically motions and so characteristically require matter. The physicist's definitions of sensible substances must thus include not only the form of the substance but also the material parts relevant for the explanation of these activities: just as geometry requires principles additional to those in arithmetic, physics requires principles additional to those in metaphysics. The τῇ ἔστι and διότι of substantiality is just form and essence, but substantiality is not the only explanandum in sensible substances. The τῇ ἔστι that expresses the physical causes of a substance will thus include not only form but also at least proximate matter.

VI

Having considered the methodological affinities between Meta. 7.17 and the Posterior Analytics, it is necessary to consider in more detail what phenomenon in sensible substances Aristotle regards as requiring explanation and the principle or principles

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89 DA 1.4.409a6; cf. chapter 1, pp. 42-5 above.
90 Physics is thus less "accurate" than metaphysics: APo. 1.27, Meta. 1.2.982a21-8, 13.3.1078a9-12.
91 DA 1.1.403a3-b11. Cf. DA 1.4.408b1-18, PA 1.5.645b14-646a1, Meta. 8.4.1044a15-32, b1-3, b15-20. Frede (1990) argues that while the physicist must define a sensible substance with its matter, the definition of sensible substances strictly speaking does not include matter. On our account, the evidence that Frede cites from Meta. 7.10-11 refers only to τῇ ἔστι in the sense of τῇ ἐν ἔτω and thus not strictly speaking to sensible substances. See section III above.
posed to explain it. We saw that at 1041b4-9 Aristotle introduces οὐσία as a principle to explain the being and being-something of matter: “we are seeking the cause . . . through which matter is a thing [τι], and this is the οὐσία of the thing” (b7-9). In explaining why the matter is a τι, οὐσία also explains that fact it that constitutes a “this” (τόδε, b2). The οὐσία of an entity is thus responsible for the entity’s having the two characteristics of substantiality with which Aristotle introduces Meta. 7.1: it is responsible both for the fact that the matter of a substance is τι ἐστι and for the fact that it is τόδε τι (cf. 1028a11-12). 92

The phenomenon explained by the causality of οὐσία, then, is the substantiality of matter, matter-being-something-and-a-this. Otherwise put, it explains the characteristics that matter takes on to become a form-matter composite. For matter to be is for it to be something other than just itself (1041b5-8), as determined by the substance’s οὐσία (b8-9). For a composite substance to be is just for its matter to be something in the way we have described. The being of a composite may be understood reductively as “matter being something, owing to the causality of primary οὐσία.” Therefore, as one might expect, being and substantiality are equivocal among the οὐσία of a sensible substance, its matter, and the composite that results from the causal activity of οὐσία upon this matter.

In explicitly identifying a causal sense of οὐσία Meta. 7.17 confirms an approach developed as early as chapter 3 of the first book of the Metaphysics. We saw that, throughout his account of the four causes in books 1 and 3, Aristotle invariably refers to what he elsewhere calls the formal cause as οὐσία and τι ἦν εἶναι. In Meta. 4.2 and 4.3 Aristotle states or implies that the science of being qua being studies primary οὐσία or the first genus of οὐσία. In Meta. 7.6, Aristotle argues that primary οὐσία must be identical to τι ἦν εἶναι; in Meta. 7.10-11 (and DA 2.1-4), he further identifies primary οὐσία and τι ἦν εἶναι with form. Meta. 7.17 uses primary οὐσία, conceived as the form and essence of a sensible substance, as a cause of its being and substantiality. 93

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92 Cf. Bolton 1995: 452-8; and DA 2.1.412b6-9: λέγομεν δὴ γένος ἐν τι τῶν ὀντων τὴν οὐσίαν, ταύτης δὲ τὸ μὲν ὡς ἐλην, ὅ καθ' αὐτῷ ἀρχὴν ἔστι τὸδε τι, ἐτέρων δὲ μορφὴν καὶ εἶδος, καθ' ἦν ἣν ἔχει λέγεται τὸδε τι, καὶ τρίτου τὸ ἐκ τούτων. Matter is not τόδε τι in its own right (καθ' αὐτῷ); the form is that in virtue of which (καθ' ἦν) the matter is τόδε τι. (I take “matter” to be the understood subject of λέγεται.)

93 The identification of οὐσία in its causal sense with form and essence is not very explicit in Meta. 7.17, if we are right in thinking that the textually awkward passages where the identification is made are
Meta. 7.17 thus supports the hypothesis we posited in chapter 7 to explain the identification of the science of being with first philosophy. We argued that the identification is based on the assumption that substantiality is found primarily in entities that are objects of first philosophy, and that these entities are causes of the substantiality of entities to which it does not belong primarily. We further argued that the object of first philosophy is unmoved ὁςία, primarily separate form and secondarily immanent form. If, as Aristotle has argued in Meta. 7.6-11, primary ὁςία is to be identified with essence and essence with form, then a substance’s form will serve as the part of that substance which has something of the nature of being and is a cause of the sensible substance’s being.

After introducing ὁςία as a principle, Aristotle proceeds to explain why a principle of this sort is required in sensible substances. It is necessary to explain why the material constituents of a sensible substance cannot explain the substantiality of that substance. In so doing Aristotle sheds further light on the character of τι ἦν εἶναι as a principle and of the thisness and whatness that it is supposed to explain. The fundamental point is that anything that is a unified plurality of material components, as opposed to merely a “heap” (σωρός, 1041b12; cf. 7.16.1040b9) of elements, cannot be simply identical to its elements. If it were, Aristotle proceeds, there would be no difference between a living organism and a dead one, for the elements of the organism continue to exist after its death (1041b14-16). In order to account for the difference, there must be not only the elements but also “something else” (καὶ ἐτερὸν τι, 1041b17, b19).94

This ἐτερὸν τι can be neither itself an element nor something composed out of elements. If it were another element, it could not serve as a principle of unity but rather would simply be yet another constituent to be unified into the whole. If it were itself
composed of elements, one would still require another principle to account for the unity of this putative principle. There must be something distinct from the substance's elements, which is the οὐσία of the substance.

It would seem, then, that this [other thing] must be something—and not an element—and that it is the cause of [e.g.,] this thing's being flesh and this thing's being a syllable; and similarly in all other cases. And this is the οὐσία of the thing; for this is the first cause of the thing's being [αἱτίων πρῶτον τοῦ εἶναι].

(1041b25-8; cf. 1041a30-2)

The passage strongly emphasizes the causal character of οὐσία: the οὐσία of a substance is so called because of its role as the cause of the substance's being.

The argument for οὐσία as a cause of being implies that, on pain of infinite regress, the essence and οὐσία of a sensible substance must be simple. It is not itself the subject of the sort of investigation described in Meta. 7.17: "Concerning that which is simple, . . . it is evident that there is no inquiry and no teaching, but there is another manner of inquiring about such a thing." As we have seen, if essence were itself composed of independent physical or logical constituents, it would be necessary to explain why these parts themselves were τὸδε τι rather than a heap. This helps elucidate Aristotle's insistence on eliminating any independent generic principle in Meta. 7.12-14: if there were any nonreducible plurality in essence, the unity of essences would itself require an explanation. Thus Meta. 7.13-14 rules out universals and genera as principles, and Meta. 7.12 identifies a sensible substance's form and οὐσία with the last differentia of its definition (1038b25-6). The form and essence of a sensible substance will contain the

95 See also Meta. 8.3.1043b4-14. These arguments are discussed extensively in Scaltsas 1994: 61-90.
96 This has already been suggested in Meta. 7.12. See pp. 242-3 above.
97 Meta. 7.17.1041b9-11: φανερὸν τοῖνυν ὅτι ἐπὶ τῶν ἀπλῶν οὐκ ἦσσα ζητήσεις οὐδὲ διδαχής, ἀλλ' ἔτερος τρόπος τής ζητήσεως τῶν τοιούτων. Cf. 9.10.1051b26-33, and 7.13.1039a14-23 with 8.3.1043b28-32 (pp. 243-4 above). I take οὐκ ἦσσα ζητήσεις οὐδὲ διδαχής to refer to the impossibility of discoursive processes, i.e., induction and demonstration respectively, in knowing simples. (For textual evidence concerning the connection between demonstration and teaching in Aristotle cf. Barnes 1969, though it is now widely recognized [e.g., Barnes 1993: xviii-xxi] that demonstration is not merely a teaching tool.) Knowledge of simples will provide principles in demonstrations, and it is presumably the end point of induction, but simples in themselves are not known discursively. Frede and Patzig (1988: 318-19) point out that the sentence is strictly speaking self-contradictory; they are probably right in attributing this to a benign equivocation in Aristotle's use of ζητήσεις.
98 Physical composition is ruled out at Meta. 7.17.1041b19-25. An analogous argument against logical composition is found at Meta. 8.3.1043b10-13, though the context in the case seems to be more dialectical.
intelligible content peculiar to that substance, and no other intelligible content not already implied in this.

The argument we have been examining also helps elucidate the relation between the “thisness” of a substance and its “whatness.” A heap is an irreducible plurality: it cannot itself be a “this.” The causal role of ὁσια is to be the principle of a unified plurality: ὁσια is the principle that makes the difference between an irreducible plurality and a plurality that can nevertheless be a “this.” The way it does this, however, is by making the matter of a sensible substance a “something,” some one thing rather than an irreducible plurality. As we saw from our study of Meta. 6.1, the investigation into the being of sensible substances will also explain why they have a τι ἄστι and so can be objects of the special sciences. The form and essence of a sensible substance is not necessarily responsible for all the intelligible content of that substance: the definition of a sensible substance, as we have seen, must also include the matter. The essence is, however, responsible for the intelligible content that makes the sensible substance a “this.”

The argument also makes it clear why matter is not a principle of being, even though it contributes intelligibility to the substance: the intelligibility contributed by matter is not that peculiar to that kind of substance nor is it the intelligibility that makes the substance a “this.” Moreover, in Meta. 9.8 and 12.6 Aristotle argues that form and actuality is prior to matter and potency: there is nothing in the notion of form that requires that it be the form of some matter. Although the forms with which we are most familiar are forms of sensible substances, there is nothing to prevent the positing of a form wholly

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99 Aristotle frequently emphasizes the distinction between a “this” and a “such” (e.g. Meta. 7.13.1038b34-1039a3). Here we are concerned with a different sort of plurality as an obstacle to thisness; cf., e.g., 7.4.1030a3-7, 7.17.104b2. Plurality is an obstacle to thisness whether it is a specific plurality or a numerical plurality of things of the same sort.

100 Bolton (1995: 454-8) emphasizes that in Meta. 7.17 Aristotle is not primarily interested in the question why a human being or a dog is a human being or dog, but rather why, in the general case, a sensible substance is a substance and a “this.” It is the job of the biologist, not that of the metaphysician, to explain why a human being is a human being: moreover, the biologist should pay “no attention” to the science of being. While Bolton is certainly correct to emphasize that Aristotle is not solely concerned with each kind of substance taken individually, one nevertheless cannot explain why a substance is a “this” (τοῖς τι) without also explaining why it is a “something,” i.e., why it has a specific τι ἄστι.

101 Meta. 9.8 passim, 12.6.1071b22-1072a15; cf. Owens 1978: 408-9. On the relation between these two passages see chapter 9, note 17 below. These arguments are overlooked by many who maintain that form is necessarily correlated with matter, e.g., Graham 1987: 269 and n. 13.
separate from matter, if there are reasons to think that an entity of this sort must exist.

Although a necessary part of any explanation of motion or generation—and so a principle of motion—matter does not enter necessarily into any account of an entity's *being*. Thus matter is not a καθ' αὐτό principle and cause of being. Although matter enters into Aristotle's account of the being of sensible substance in *Meta*. 7.17, it does so not as a principle but rather as part of the explanandum.

As a principle of being and unity, essence must be a being and a unity primarily and καθ' αὐτό. A passage in *Meta*. 8.6 underlines essence's primacy in this respect:

Of things which have no matter, either intelligible or sensible, each is immediately just a certain unity as well as just a certain being [εὐθὺς ὁπερ ἐν τι . . . , ὡς ὁπερ καὶ ὁπερ ὑν τι], such as a "this," or a quality, or a quantity. And so in their definitions, neither "being" nor "one" is present. And an essence [◠δ· ἐν εννεα] is immediately a certain unity and a certain being. Consequently, nothing else is the cause of being or unity in each of them, for each is immediately a certain being and a certain unity, not in the sense that being and unity are their genera, nor in the sense that they exist apart from individuals. (*Meta*. 8.6.1045a36-b7)

The referent of this passage is not immediately clear. Many interpreters, including Alexander and Ross, assume that Aristotle is using "intelligible matter" to refer to genera, and so that the things that lack sensible and intelligible matter are the highest genera.

This interpretation is problematic for at least two reasons. First, it seems odd to maintain that the genera have a claim not to have matter because they *are* matter: one would rather expect things not having matter to be entirely *distinct* from matter. Second, this

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102 Cf. *Meta*. 4.1.1003a26-32: we are seeking the principles and causes that belong καθ' αὐτό to being. Matter is, of course, a καθ' αὐτό principle of motion: it is interesting that Aristotle concludes his argument for the priority of actuality to potency with the statement that actuality is prior to any ἀρχή μεταβλητική (1051a2-3), i.e., matter and potency, despite the fact that form is also a necessary ingredient in the account of change.


104 Ross 1924: ii.238; see also Berti 1979: 99 n. 42. (It is clear from the fact that Aristotle lists examples outside the category of substance that he is not referring to separate form.) The passage that seems to support Ross's reading is 1045a35, which would seem to imply that "plane figure" is matter as the genus for a circle. One is tempted to follow Jaeger's excision of this passage. The textual ground for the excision is the absence of any mention of the passage in Ps-Alexander. Philosophically, the disputed passage has the appearance of a misguided attempt to give an example of a definition in terms of actuality and matter, where "plane" would be the actuality and "figure" the matter. Alternatively, one might follow Bostock (1994: 284-5) in conceiving the plane as the mathematical (i.e., nongeneric) matter for circles.

105 As Bostock points out (1994: 285).
approach would imply that it is the genera that are immediately and essentially beings and unities—hence also the principles of being and unity in other things—which cannot be Aristotle's meaning if our overall interpretation of his account of the principles is correct.

The alternative is to take "things without matter" as referring precisely to essences in their capacity as primary οὐσία of sensible substances: the principle in sensibles that themselves contain neither sensible nor intelligible matter (Meta. 7.10.1036a2-12, 7.11.1036b32-1037a5). In this capacity, essence is immediately (εὐθύς) and essentially (δὲπε) being-something and one-something. It does not owe its being and unity to some other cause; rather, they belong to it καθ' αὑτό. While not themselves having sensible or intelligible matter (α36), such essences do not exist apart from sensible individuals (b7). They are the simples that must be principles of any complex substance if the latter is really to be a substance. As we should expect from Aristotle's rejection of the generic account of the principles, essences are beings and unities of a certain sort without being species of genera of being and unity. Otherwise, the being and unity of these essences would not be "immediate" but would rather have a principle in genera of being and unity.

Our Meta. 8.6 passage, then, implies that essence is what is primarily being and one in a sensible substance. In Meta. 7.1 Aristotle argued that primary being is to be found in οὐσία, and in Meta. 7.6 that primary οὐσία is to be found in essence. Being is to be identified with being something, and this is precisely essence. The texts we have examined in Meta. 7.17 and 8.6 tend to confirm this identification, while showing why essence and primary οὐσία must also be primary unity. As soon as any sort of plurality enters into a substance, it is no longer just "something" but becomes some multiplicity of things. A complex sensible substance is no longer just the intelligible "something" peculiar to that substance. It becomes necessary to explain why a multiplicity of these constituents, all of which have some distinct intelligibility, nevertheless make up a unified whole.

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106 Aristotle characteristically uses the word δὲπε either to refer to what something is essentially, either at the level of the genus or at the level of the species. See Barnes 1993: 176; and Bonitz 1870: 533b36-534a9. The association of δὲπε with the genus is presumably one reason why Aristotle is concerned to emphasize his denial of the role of genera of being and unity in accounting for the being and unity of essences.
It is in this sense that immanent form contains the nature of being and substance: it is not the nature of being and substance simpliciter, but it is primary being-something and primary one-something. The essence of a given sensible substance $x$ is what makes the sensible substance an $x$ without itself containing any of the material parts that are thereby made to be $x$. Analogously, it is the principle in $x$ that is immediately a unity and requires no further cause of its unity. While it is the composite that is primarily a human or primarily a dog, but what is primarily a being and a unity of the kind man or dog is not the sensible composite but its form and essence.

It is also in this sense that the form of a sensible substance has a better claim to be primary $oυσια$ than the composite. The form and essence possesses the marks of substantiality primarily and in its own right, while being the cause of these characteristics in sensible substance. It is the composite that is unqualifiedly separate and τόδε τι. Nevertheless, the fact that it meets these criteria in the first place is explained by $oυσια$ in its causal sense, the form and essence of the substance. Likewise, the fact that the composite is scientifically intelligible in some sense—the fact that the composite has a τι ἐστι—is dependent on the fact that essence and primary $oυσια$ are intelligible primarily and in their own right. Form and essence plays the same role vis-à-vis the composite with respect both to its “thisness” and to its “whatness.” Essence is not unqualifiedly separate and a τόδε τι, nor is it the τι ἐστι of a sensible substance. Nevertheless, it is the essence that is responsible for the separation, thisness, and whatness of the composite. In maintaining that the form rather than the composite is primary $oυσια$, Aristotle is not

107 The τι ἐστι of a sensible substance must include matter, but its τι ἕν εἶναι does not. See sections II-III above.
108 This doctrine is not stated as clearly as one would like. The fulfillment of the τι ἐστι and τόδε τι criteria can be inferred from the passages we have discussed in Meta. 7.17, but I know of no Aristotelian text that explicitly indicates that the separation in λόγος of the form is responsible for the separation ἀπλάκος of the composite. Nevertheless this would seem to be implied by what we do know from Meta. 7.17: a sensible substance receives both its whatness and its thisness from its form, and it is presumably these characteristics that make the composite separate from other substances. The fact that the form of a sensible substance is not defined in terms of anything else (separation in λόγος) implies that nothing in the definition of a sensible substance indicates any dependency on something other than it. A more extended treatment of the meaning of thisness and separation would take us too far afield, useful though it would be.
arbitrarily “privileging” the essence-criterion of substantiality over all others: the fact that the composite fulfills any of the criteria of substantiality is due to its form and essence.

On the other hand, it is clearly only in a restricted sense that essence in sensible substance contains something of the nature of being. Immanent form and essence is primary being-something for some sensible substance $x$ and the cause of that $x$’s being something. However, if $x$ is simply one sensible substance among many that are specifically or numerically different from it—no one of which is more a being than any other—then primary being-$x$ cannot be the same as primary being simpliciter. If primary being-horse were identical to primary being, for instance, then we should expect being-cow to be somehow dependent on and understood in terms of being-horse. There is no reason to think this is the case.$^{109}$ Even if it does turn out that even primary being is to be something, it must be something that is unique and in significant ways prior to all other instances of being.

Similarly, the sense in which essence is a cause of being is sharply limited. Although a cause of the being of the composite, the form does not prevent the composite’s eventual perishing; nor do forms individually taken survive the destruction of their composites.$^{110}$ The form of a sensible substance is in the odd position of being in some sense the cause of the being of the substance, while itself being incapable of existing except in the substance whose cause it is.$^{111}$ The way in which the ousia and essence of a substance its αἴτιον τοῦ ἐἶναι is thus radically different from the sense in which God is a cause of being for Aquinas, for instance.$^{112}$ While God is preserving a creature in existence, his causality is thought to be sufficient for the existence of that creature: if the

\[109\] The same argument might be made using the case of numerically different horses, although this raises the difficult question of the extent to which form and essence are individual or universal.

\[110\] We are leaving aside the question of νοῦς. On the sense in which the form is destructible see Meta. 7.8.1033a24-b19, 8.3.1043b14-23, 8.5.1044b21-9, 12.3.1069b35-1070a13; GA 2.1.731b31-5. Cf. section III of chapter 9, below.

\[111\] It is perhaps in this limited sense that the form is “infected” with matter (Gerson 1990: 88): the form can exist only as the form and actuality of a particular material substance. But one must take care to avoid the implication that matter enters into the definition of the form: the form is definitionally separate and prior to matter and the composite (8.1.1042a28-9, 9.8.1049b12-17).

\[112\] Gerson (1991: 341) points to Aristotle’s use of αἴτιον τοῦ ἐἶναι at Meta. 2.1.993b28-31 as an example of a case where the phrase appears to refer to an efficient cause. A science of being developed along these lines would certainly look very different from the one actually developed in the main series of the Metaphysics.
creature ceases to exist, it is because God is no longer preserving it. By contrast, the destruction of an Aristotelian sensible substance is not due to any change in the causal activity of its form. The form causes the substance to be some intelligible “this,” subsequent to something else’s having caused the generation of the substance, and only as long as no third thing causes the destruction of the substance. The form ceases to be cause when its substance no longer exists, but the destruction of the substance is not due to the fact that its form has ceased to cause it to be something. Immanent form is necessary, but not sufficient, for the explanation of the being of sensibles. The suggestion is that another principle will be required to explain why things come into being and take on the intelligibility of their essence in the first place. When immanent form and essence is considered either as a candidate for the nature of being or as a cause of being, the inadequacy of a science of being based solely on immanent form becomes apparent.

VII

Having examined Meta. 7.17 in detail, it is possible to see more clearly how Aristotle’s treatment of form as a metaphysical principle reflects the themes we first discussed in our treatment of the aporias about the principles and the identification of the science of being with first philosophy. The generic account of the principles of substances carries with it two implications that Aristotle rejects in his approach to the causes of intelligibility in Meta. 7.17. The first is that the principles of intelligibility in a substance will be univocally predicatable of that substance. The genus of animal would be the principle of animality in all animals and univocally predicatable of all animals. By contrast, a sensible substance’s form and essence is not univocally predicatable of the substance taken as a

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113 This is not to discount the role of secondary and instrumental causes, but the activity of these causes is presumably dependent on that of God. See Owens 1985: 200-2.
114 Gerson (1990: 275 n. 18) raises the question of how separate form can be a cause of being if immanent form is a “first cause” of being. The answer suggested by our account is that neither separate form nor immanent form is sufficient to explain the being of sensible substances: separate form cannot explain the intelligibility of sensibles as kinds of thing, whereas immanent form cannot explain why these things come to take on this intelligibility in the first place. An adequate account of the principles of substance requires both immanent and separate form.
whole. The principle is a simple essence without matter; the explanandum is a sensible composite whose τί ἐστι must include at least proximate matter.

We should not ignore the fact that sometimes we are unaware of whether a name signifies a composite substance, or the actuality or form, for example, whether “a house” signifies the composite, that is, a covering made of bricks and stones laid in such-and-such a manner, or, the actuality or form, that is, a covering . . . ; and whether “an animal” signifies a soul in a body or a soul, for it is the soul which is the οὐσία and actuality of a certain body. The name “an animal” may be applied to both, not as having the same formula when asserted of both, but as related πρὸς ἐν . . . For a soul and the essence of a soul are the same, but the essence of a man is not the same as the man, unless the soul is also called “a man,” and it is so in a sense but in a sense not. (8.3.1043a29-b4)

The principle that makes a substance intelligible as the substance it is—its οὐσία, essence, form, or actuality—is predicated of the composite not univocally but πρὸς ἐν. Just as “being” and “substance” are πρὸς ἐν equivocal among form, matter, and composite; so “man” and “house” are equivocal between the form and actuality on the one hand, and the composite on the other hand.

The second implication rejected by Meta. 7.17 is that there will be different principles responsible for an entity’s intelligibility as a substance and as a kind of substance. If there were a genus of being or substance, presumably the task of the metaphysician would be limited to studying that genus as the cause of being or substantiality in sensible entities, whereas other sciences would employ the other genera as principles of sensible entities’ intelligibility as other kinds of thing. As we have seen, however, the principle that explains why a substance is a “this” is the same principle that explains why it is a “what”: it is not possible to explain the one without also explaining the other. The primary οὐσία of a sensible substance—its immanent form and essence—is responsible for both. As we saw from Meta. 7.12, the form provides the last differentia, and the genera are already contained implicitly in this differentia.

We suggested in our last two chapters that Aristotle proposed to replace the generic account of the principles with one according to which the entities studied in first

115 I follow Ross (1924: ii.231) on the sense of the last clause. For longer discussion of this passage see pp. 282-3 below.
116 Cf. DA 1.1.402b7-9: genera such as “animal” are “nothing or posterior.”
philosophy are principles of the being of sensible substances, and that these objects should include both immanent and separate form. The eighth aporia inquired whether it was necessary to posit principles existing apart from sensible substances, i.e., whether any of the purported objects of first philosophy need exist. In *Meta.* 3.1 Aristotle raises the question as asking whether there need exist anything apart from matter or the composite (*παρὰ τὴν ὅλην, παρὰ τὸ σύνολον, 995b31-6). In *Meta.* 3.4 two kinds of reasons are given for thinking there must be such a thing. First, if there is nothing apart from sensible particulars, there will be no scientific knowledge; second, generation requires a τέλος which is found in an entity’s form.

The effect of Aristotle’s arguments in *Meta.* 7.17 is to answer the question in the affirmative: there must be ἔτερον τι (1041b21) which is distinct from the elements of a sensible substance and makes the substance as a whole to be what it is. Aristotle’s reason for positing form in the aporia is as a τέλος of generation: *Meta.* 7.17 tells us that the same principle is needed as a principle of being and intelligibility. Echoes of the eighth aporia are heard even more clearly in a parallel passage in *Meta.* 8.3:

... nor is a man animal plus two-footedness, but there must be something which exists besides these [*παρὰ ταύτα*], if these are matter, and this something is neither an element, nor does it consist of elements, but is οὐσία; and it is this that some thinkers leave out and state only the matter. (1043b10-13)\(^{117}\)

At the end of *Meta.* 7.17 this nonelemental principle is identified with nature in the sense according to which nature is not an element:

Since some things are not substances, but those that are substances are formed according to nature or by nature, the οὐσία of these things would appear to be its nature, in the sense according to which nature is not an element but a principle.\(^{118}\)

\(^{117}\) οὔδὲ δὴ ὁ ἄνθρωπος ἐστί τὸ ζῷον καὶ δίπος, ἄλλα δὲ δεῖ εἶναι ὃ παρὰ ταύτα ἐστίν, εἰ ταῦθ’ ὅλη, οὔτε δὲ στοιχεῖον οὔτε ἐκ στοιχείου, ἄλλα ἦ οὐσία ὃ ἔξαιροιντες τὴν ὅλην λέγουσιν. (I follow Ross’ text and Apostle’s translation.) The suggestion that “animal” and “two-footed” are matter for human beings is presumably dialectical.

\(^{118}\) *Meta.* 1041b28-31: ἐκεῖ δ’ ἔνια οὐκ οὐσία τῶν πραγμάτων, ἄλλ’ δέσιι οὐσίαι, κατὰ φύσιν καὶ φόσει συνεστήκασι, φανεῖ ἂν αὕτη ἡ φύσις οὐσία, ἡ ἐστιν οὗ στοιχεῖον ἄλλ’ ἀρχή. (On the form as the final cause of parts and activities see *Pa* 1.5.) I am inclined to read κατὰ φύσιν καὶ φόσει with Ross, Frede and Patzig, Apostle, and ms. f; against E, A\(^{a}\), and various editors who would excise one or the other (E and A\(^{a}\) are inconsistent on this point). Cf. *Phys.* 2.1.193a1. With most translators and commentators (but against Apostle) I read ἔνια οὐκ οὐσίαι τῶν πραγμάτων as involving a partitive genitive, i.e., “of things, some are not substances.” This seems required by Aristotle’s remark that those things that are substances are κατὰ φύσιν καὶ φόσει συνεστήκασι, i.e., natural composites. Aristotle
Aristotle thus explicitly draws the connection between form as οὐσία and a principle of being in metaphysics, and form as φύσις and a principle of motion in physics. The search for a principle of intelligibility in the *Metaphysics* brings us back to the unmoved τέλος required by *Phys.* 2.7.\textsuperscript{119} As we suggested in our account of the eighth aporia, the *Metaphysics* puts to work the formal principle introduced as a final cause of motion and generation to explain the intelligibility of entities as kinds of thing.

\textbf{VIII}

In *Meta.* 7, Aristotle has identified essence as primary οὐσία, and has identified the form of a sensible substance as its essence and primary οὐσία and the immanent principle of its being. In *Meta.* 8 Aristotle proceeds to provide an account of this principle and its relation to matter and the composite. In so doing, Aristotle identifies the form and essence of a sensible substance with its actuality (ἐνέργεια or ἐντελέχεια). This identification is helpful for several reasons—for one thing, it allows Aristotle to attempt to account for the unity of a sensible substance as the unity of actuality and potentiality (*Meta.* 8.6)—but it also creates a serious difficulty. Throughout *Meta.* 8 and *DA* 2, Aristotle calls form the actuality of a sensible substance. However, this actuality is also the cause of the being of the sensible substance, where the being that is the effect of this cause cannot be identical to the cause itself. In other words, it appears that there must be two actualities within a sensible substance, the actuality that is the form and the actuality that is matter-being-the-composite. If the substance is to be a unity, however, it cannot have two substantial actualities: if there were two substantial actualities, there would be two substances.\textsuperscript{120} We shall attempt to see how Aristotle might solve this difficulty, by examining his characterization of soul as a principle of life in *De anima* book 2.

*Meta.* 8.1 summarizes the results of *Meta.* 7 and proposes a study of substantiality in sensible substances. Within sensible substance οὐσία is used in three ways, to refer (1)

\textsuperscript{119} *Phys.* 2.7.198a28-b4; cf. 1.9.192a34-b2. We discuss both passages in section I of chapter 7, above.

\textsuperscript{120} See esp. Gerson 1990: 88.
to the matter which is not τόδε τι in actuality but only in potency, (2) to the form which is τόδε τι and separate in λόγος, and (3) to the composite, which alone is generable and destructible and alone is separate unqualifiedly (1042a24-31). The rest of Meta. 8.1 (a32-b8) constitutes a brief treatment of matter, which is substance in potency (1042b10).

Meta. 8.2 goes on to inquire into the actuality of the substance, taking its starting point in the Democritean differentiae (1042a11-15). Aristotle proceeds to generalize from this that the differentia is the cause of the substance’s being what it is: it is in such things that one is to find the οὐσία and αἴτιον τοῦ εἶναι of the substance (1042b25-1043a4). Although the artifacts used in his examples are not strictly substances, there is an analogy between substances in the strict sense and artifacts: the actuality is predicated of matter to make the substance as a whole a unified something (a4-7).

The implication of this passage is that the actuality of a substance is to be identified with its differentia, which is also its οὐσία and αἴτιον τοῦ εἶναι—that is, its form and τί ἐν εἶναι. The identification is made explicit in the discussion that follows, where Aristotle discusses the three types of definition for sensible substances:

In defining what a house is, those who say that it is stones and bricks and wood speak of what is potentially a house, for these are matter; those who say that it is a receptacle for sheltering animals or goods, or some other thing, speak of the actuality of the house. But those who combine both, speak of the third kind of substance, the one that is composed of matter and form (for it seems that the formula by means of the differentiae is that of the form and actuality [τοῦ εἶδους καὶ τῆς ἐνεργείας], but the formula of the constituents is rather the matter); and this is similar to the kind of definitions that Archytas used to accept, for they are of both matter and form. For example, what is windlessness? Stillness in a large expanse of air. Air is the matter, stillness is the actuality and the οὐσία. What is calm? Smoothness in the sea. The underlying subject as matter is the sea, the actuality or the form [μορφή] is smoothness.¹²¹

There are three kinds of definition of sensible substances, the definition in terms of the form, differentia, and actuality; the definition in terms of the material components; and the definition which combines the two. The identification of form and differentia is what one

¹²¹ Meta. 8.2.1043a14-26; cf. 8.3.1043a29-b4 The examples drawn from Archytas are strictly speaking cases of attributes in a subject, of course; presumably Aristotle is using these as analogies for definitions in substances, just as he did with artifacts earlier in the chapter. The phrase “form and actuality” (or a trivial variation of it) is found six times in Meta. 8.2-3: 1043a20, a25, a28, a30-1, a32-3, b1-2.
should expect from *Meta.* 7.12; the identification of these with ὄσια and ὀξίον τοῦ εἶναι is what one should expect from *Meta.* 7.17. The definition of the form and actuality is distinguished from the definition of the composite: the latter definition includes matter whereas the former does not. The actuality of a sensible substance is distinguished both from its matter and from the sensible composite itself.

As we have seen, this identification raises the difficult question of the composite’s status as an actuality. The composite must in some sense be an actuality: the composite, or some matter’s being-something, is precisely what essence and ὄσια are posited to explain in *Meta.* 7.17. Gerson’s solution is to maintain that it is the composite, and not the form, that is the actuality in a substance:

It is true that the form is the cause of being of the composite. . . . But there are not two actual beings, the form and the composite. The only substantial actuality in the composite is the composite itself. If this were not so, the substance would not be a unity. But it is not unqualifiedly actual otherwise it could not be said to have matter, counter to its being a composite. Once a sensible substance is identified, say, as a man, we can deduce immediately that the form of a man is dependent, that is, ‘part’ of the composite. This part is, to be sure, the actuality of the composite, but this only means that the actuality of the composite is imperfect. That is, to be a man is necessarily imperfectly actual simply because so long as this sensible composite exists it is capable of doing things it is not now actually doing. So, the form of a man existing on its own could not be specifically the same form. Sensible form is actualized either in the composite or as an attribute when it is in the mind.  

The form is the actuality of the composite, but “the only substantial actuality in the composite is the composite itself.” This actuality is an imperfect actuality (being in potency to second actualities that cannot all be realized simultaneously), and an actuality that contains matter.

Gerson thus attempts to bring together three positions:

1. There is only one substantial actuality in any given sensible substance.
2. The form is the actuality of the composite (required by numerous texts throughout the *Metaphysics* and the *DA*). (“This part is, to be sure, the actuality of the composite. . .”)
3. The substantial actuality of a sensible substance is the composite. (“The only substantial actuality in the composite is the composite itself.”)

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It is not clear how these three positions can be brought together without severely undermining Aristotle's carefully drawn distinction between the form and the composite. If the form is the actuality of the composite, but this actuality is just simply the imperfect actuality which is the composite, then it is difficult to see how in identifying the two actualities one has not simply identified the form and the composite. Yet it is clear throughout the *Metaphysics* that Aristotle wants to preserve the distinction between the two. The composite includes matter, but the form and essence—although the form and essence of a material substance—do not themselves contain matter and are defined without matter. Gerson's solution to the two actualities problem is inconsistent with the relevant texts.

Another approach to the problem is that taken by Alan Code. Code's account of primary substantiality is similar to ours: a primary substance is that which is responsible for the sensible substance's being a being. "A substance is a being, and the *ousia* of some substance is what makes it so. The form of a substance is primary *ousia* in this sense, but a body is not." Immanent form is primary substance and the cause of substantiality in the sensible substances that serve as subjects for predication. According to Code, however, in being the cause of being for a sensible substance primary *ousia* is not the cause of some being distinct from it:

To say that the *ousia* of X is the cause of being for X does not mean that some entity called 'the *ousia* of X' is the cause of some entity called 'the being of X'. The 'being of X' is just the 'ousia of X'. . . . The being of a thing X is what X is. For instance, Bucephalus is a being, and 'what Bucephalus is' is a horse. Since this is what Bucephalus is, it follows that being for Bucephalus is no other than being a horse. Bucephalus' being is just being a horse.\(^{124}\)

Code takes the opposite approach to Gerson's: there is only one being and actuality in a sensible substance, that of the form and essence. There are several difficulties with this position. First, we have argued that if something is to be described as a cause, it is a cause of something distinct from just itself.\(^{125}\) As we saw in *Meta*. 7.17, explanation presupposes complexity. Thus, if Bucephalus's being is just simply his primary *ousia*, it is difficult to

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124 Ibid.
125 See pp. 253-6 above.
see how his οὐσία is to be understood as a cause. More seriously, however, it is difficult to see how what it is to be Bucephalus can be identical to the essence of a horse. To make this identification seems to be to leave out matter, which is part of the explanandum: what we are seeking to explain is why the parts and elements that make up Bucephalus are Bucephalus; in other words, the being that we are attempting to explain is the being of some matter.\footnote{Cf. \textit{Meta.} 7.17.1041a26-8, b4-9, quoted and discussed above. Additionally, it is not entirely clear how Code avoids the identification of Bucephalus with the essence of horse: this presumably would rule out the possibility of a plurality of horses and would contradict \textit{Meta.} 7.11.1037a34-b7 (cf. a5-10) and 1043a29-b4.} We are attempting to explain why some plurality of material components nevertheless is some separate and intelligible “this.”

Aristotle’s most explicit treatment of the relation between οὐσία as a cause of being and the being that it causes is found in book 2 of the \textit{De anima}. The \textit{DA} seems to assume Aristotle’s account of οὐσία from \textit{Meta.} 7-8, and certainly borrows much of its terminology. In \textit{DA} 2.1 Aristotle makes the same threefold distinction among the meanings of οὐσία in sensible substance as he does in \textit{Meta.} 8.1: there is matter and potency, form and actuality, and the composite of these two (412a6-11). The soul is οὐσία in the sense of form and actuality (a19-21), and is also called the οὐσία κατὰ τὸν λόγον and the τί ἐν εἶναι of the body whose soul it is (b10-11).\footnote{Cf. \textit{Meta.} 7.10.1035b14-16, quoted p. 238 above.} When he outlines the three ways in which the soul is a principle and cause in \textit{DA} 2.4, one of these ways is the one first introduced in \textit{Meta.} 7.17. The soul is a cause as the οὐσία and αἱτίον τὸ εἶναι of the composite:

The soul is the cause and principle of the living body. Now the terms “cause” and “principle” have many senses, and, similarly, the soul is a cause in the three specified senses of “cause”; for it is a cause as a source of motion, and as a final cause, and as the οὐσία of an animate body.

Clearly, it is a cause as οὐσία, for the αἱτίον τὸ εἶναι of each thing is the οὐσία of each thing, living is being for living things, and the cause and principle of this is the soul. Furthermore, the λόγος of that which exists potentially is its actuality.\footnote{\textit{DA} 2.4.415b14-15. The second paragraph reads: διὸ μὲν ὁδὸν ὡς οὐσίᾳ, δὴλον τὸ γὰρ αἱτίον τοῦ εἶναι πάσιν ἡ οὐσία, τὸ δὲ ζῆν τοῖς ζώσι τὸ εἶναι ἑστιν, αἱτία δὲ καὶ ἀρχὴ τοῦτον ἡ ψυχή, ἦτε τὸ τοῦ δυνάμεις δύνας λόγος ἡ ἐνελέξεια. I am inclined to read λόγος in the last sentence as equivalent for “form” rather than “definition”; cf. 412b16, 414a10.}
Aristotle not only indicates that the soul is the cause of being for a sensible substance, but also gives a characterization of the being it causes. The difference between being and nonbeing for an organism is the difference between being alive and being dead, and so the soul is the cause of the being of an organism in its capacity as a cause of its life. The two actualities problem can thus be rephrased as the problem of the relation of the actuality that is the soul to the actuality it causes, life.

As Bostock points out, one interpretation naturally suggested by the *De anima* is that the two should be identified. This interpretation may seem to be suggested by Aristotle's definition of the soul in *DA* 2.1 as the "first actuality [ἐντελέχεια] of a body with potency for life" (412a27-8). The implication is that since the body is in potency for life, and the soul is an actuality, then the "life" to which the body is in potency is nothing other than its soul. If this is the case, it would seem that Aristotle's position that the soul as ὀψία is a cause is fundamentally confused: there would be no difference between the cause and the phenomenon whose cause it was.

The reasoning we have just suggested, however, is not the reasoning Aristotle actually uses to arrive at this conclusion. The argument rather takes its starting point from the central books of the *Metaphysics*: the soul must be ὀψία, and ὀψία in the sense of form, and ὀψία in this sense is ἐντελέχεια (412a15-21). In other words, the conclusion that the soul is actuality is based on the fact that it is ὀψία in the sense of form and actuality, rather than on the fact that it belongs to a body with potency for life. The context surrounding the statement allows the interpretation that the actuality that is the soul and the life that the body is in potency to are not one and the same thing. Moreover, Aristotle consistently avoids any explicit identification of soul and life, which seems significant given that he might easily have made the identification had he wanted to do so.

What makes any attempt to identify soul and life particularly problematic is Aristotle's own account of what it means for something to live. In *DA* 2.2 Aristotle gives an account of living in terms of certain characteristic *motions* and activities, "the intellect,

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129 This is foreshadowed by *Meta.* 7.17.1041b14-16. Cf. also *Gd* 2.1.732a28-30.
130 Bostock (1994: 141-4) discusses several possible interpretations.
131 Aristotle's example of sight being the actuality of the eye (412b18-22) also tends to lead one to think in this direction.
sensation, motion and stopping with respect to place, moving with respect to nutrition, deterioration, and growth" (413a23-5). The soul is the principle of these things, and the physicist will define it according to these functions (413b11-13). In itself, however, it is an unmoved principle and cause: the soul cannot be identical to life because life is (at least in part) motion, but the soul is unmoved.

Aristotle's account of life thus indicates both that there should be a distinction between the soul and the actuality it causes, and that the actuality it causes is a certain kind of motion. Our account of composite ὀψια as matter-being-something may be further refined: a substantial composite is matter taking on certain characteristic set of motions or kinetic actualities, as defined by its form and substantial actuality. The ὀψια of a sensible substance is a cause of being in its capacity as a cause of the motions and other activities that constitute life for that substance. Otherwise put, at the level of the sensible composite there will no longer be a clear distinction between being and motion: to be for the composite is simply to have certain motions in accordance with the composite's form. This is not to say that any motions whatsoever will constitute being for a sensible substance: the motions that constitute a sensible substance's being are those characteristic motions that are determined by its φύσις in the sense according which φύσις is form. Being for a given living organism is not just motion but a certain kind of motion.

This suggests a solution to the two actualities problem. If the actuality of the composite is, when considered in itself, only a certain specific kinetic actuality; then there will be only one properly substantial actuality in a sensible substance, that is, the form that

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132 Cf. DA 2.1.412a13-21. The view that the soul will be defined in terms of its functions may seem to conflict with the view expressed in the Metaphysics that the soul is not to be defined in terms of anything else. The difference seems to lie primarily in the physicist's concern to understand the soul as a principle and cause of the physical phenomena associated with life. This perhaps explains Aristotle's rather cryptic remarks at the beginning of DA 2.2 to the effect that one must understand not only the fact but also the cause (413a11-20). Aristotle does not mean by this that it is necessary to inquire into the causes of the soul: the soul is a cause, rather than something that has causes. It is necessary rather to understand the soul in relation to the phenomena whose cause it is, something which the definition of DA 2.1 apparently does not do, or at least not adequately.

133 Some parts of what Aristotle understands as life are straightforwardly motions, e.g., nutrition and locomotion. For some other activities, e.g., sensation and intellection, their status as motions is less clear; see, e.g., DA 2.5.417b2-7, 3.7.431a4-7. For arguments that the soul is unmoved see DA 1.3 passim.

134 This is consistent with Aristotle's identification of the ὀψια of a sensible substance with its formal φύσις (1041b28-31), i.e., the formal principle of its characteristic motions. I owe the suggestion that being in sensible things may be identified with their motions to discussion with Stephen Walker.
Aristotle himself identifies with primary ωσια and actuality. The substance taken as a whole has an actuality, but is not itself an unqualified actuality: just as a sensible substance is a composition of form and matter, so it is a composition of substantial actuality and potency. The effect of this composition is the life and hence the being of the composite.

This raises the difficult question why kinetic actualities should be considered instances of “being” in the first place. If being in sensible substances is a kind of motion, does this not collapse the science of being into physics? The most useful passage for addressing this question is Aristotle’s account of the relation between the actuality and composite in *Meta* 8.3:

> We should not ignore the fact that sometimes we are unaware of whether a name signifies a composite substance, or the actuality or form, for example, whether “a house” signifies the composite, that is, a covering made of bricks and stones laid in such-and-such a manner, or, the actuality or form, that is, a covering . . . ; and whether “an animal” signifies a soul in a body or a soul, for it is the soul which is the ωσια and actuality of a certain body. The name “an animal” may be applied to both, not as having the same formula when asserted of both, but as related προς ἐν. (8.3.1043a29-37)

In itself, the passage indicates only that the definitions of a sensible composite and its form are distinct, and that they are related προς ἐν. However, the passage suggests that we may also find a προς ἐν relationship between the being and substantiality of a sensible substance’s form and actuality and that of the substance itself. Substantiality exists primarily in form and primary ωσια, secondarily in the composite whose cause the form is.

The existence of a προς ἐν relation between the sensible composite and its actuality suggests that the relation between the form and the composite is a προς ἐν relation between a composite and its primary ωσια, analogous to the προς ἐν relation often supposed to exist between sensible ωσια and god. We have argued that a sensible substance’s form and essence is the cause of its being some intelligible “this.” The primary ωσια of a human being is the soul, and it is this in virtue of which the composite is (and

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135 Aristotle is not ideally clear which is the primary instance in this προς ἐν relation. That Aristotle means the form to be the primary instance is suggested by the fact that the form is the αἰτιον τοῦ εἶναι of the composite and the latter is dependent for its intelligibility on the form. Cf. *Meta*. 4.2.1003b16-17: the primary instance is that ἐξ ὁ δὲ ἄλλα ἴρηται, καὶ δὴ λέγονται.
is called) a human being. As we saw in our Meta. 8.6 passage, the form or essence is immediately just a being-something; as we saw in Meta. 7.17 this in turn is the cause of beingness (αὐτήν τοῦ εἶναι) for the matter or the composite. Substantiality in its primary instance is form; the word may also apply in a derivative sense to the motions and activities that constitute life for a specific organism.

The solution we have proposed drives home the extent to which a πρῶς ἔν account of being and substantiality prohibits univocality among the various instances of substance. The nature of being and substantiality is found in primary οὐσία. The motions that constitute the being of a sensible substance are in no way “substantial” in themselves: apart from their relation to primary οὐσία, there would be no reason to think of these motions as constituting some instance of being. An account of the being of a sensible substance in terms of certain kinds of motion also makes intelligible the possibility that an eternal unmoved substance that is in the first instance a cause of motion is also, as a cause of continuous motion and generation, a cause of the sort of eternity, i.e., the sort of being that the sublunary world can possess.

Our solution also explains why the composite is not the attractive candidate for primary substance that it appeared to be in Meta. 7.3. To sensation, sensible composites and their matter appear to be very good candidates for primary being and substantiality. However, the requirement that primary substance be τι ἐν εἶναι rules out sensible substance as a candidate for primary substantiality. The πρῶς ἔν character of substantiality requires that what is called “substantiality” in sensible substances actually be something quite different from substantiality as it is found in primary οὐσία. The composite may appear “more real” to sensation, but reflection on the nature of being and substantiality reveals that in truth the composite has “little or no being” (1029b9-10): the nature of being is found in form and essence, to which the composite is not identical. 136

136 Graham (1987: 275-89) accuses Aristotle of an illicit reductionism in his identification of substance with the form rather than the composite: on Graham’s view, the fact that it is the composite that best fulfills the criteria for substantiality should imply that the composite is “more real” than its form and thus should be primary substance. On our account of the relation between the composite and its form, by contrast, the composite cannot be more real than its form because its being is not being in the primary sense but really a kind of motion.
We began this chapter by proposing that Aristotle’s project in the central books of the *Metaphysics* is to identify the nature and principles of being. We have argued that in chapter 6, Aristotle identifies the nature of being with primary ὄσια and primary ὄσια with essence (τι ἐν ἐναι). Essence may be found either as unqualifiedly separate, as in Aristotle’s god, or as the essence of a sensible substance.

For most of the chapter we have been concerned with the question why the form and essence of a sensible substance should be considered an instance of primary ὄσια. There are at least two reasons to think it should not be primary ὄσια. First, it is difficult to see how both separate and immanent form can be called “primary”: presumably one or the other should be primary ὄσια, but not both. Second, it appears *prima facie* that the composite is a much better example of a substance than its form and essence.

Our solution to both objections is to focus on what is necessary for a sensible substance to have the characteristics that Aristotle associates with substantiality in *Meta.* 7.1, i.e., to show that being a τι ἐστι and a τόδε belongs to sensible substances not in their own right but owing to the causality of their essences, each of which is a “cause of being” (ὁτιον τοῦ ἐναι) for that substance. Sensible substances have these characteristics only in dependence on the causality of their essences and, because of the πρὸς ἐν character of substantiality, only in the derivative sense of having “life,” i.e., the activities determined by the substance’s ὄσια in its capacity as form and φύσις.

Likewise, although the form is separate only in λόγος whereas the composite is separate unqualifiedly, the composite is dependent on the form’s definitional separation for its unqualified separation. The fact that the composite meets the criterion of separation more fully than its form does not make it prior to the form, because the fact that the composite meets any criterion of substance in the first place is due to the causality of its form. The essence of a sensible substance is “primary” ὄσια just in the sense that there can be no further cause of these aspects of sensible substance’s substantiality. In other words,

137 See notes 50, 56, and 108 above. As we have pointed out, one of the peculiarities of Aristotle’s metaphysics is that Aristotle’s most developed account of the principles of being does not include the entity that one would expect to be his best candidate for the nature of being, i.e., separate form.
immanent form and essence has a claim to primacy alongside separate form, because there are phenomena associated with the science of being that cannot be explained by separate form.

It is in this way that Aristotle solves the problems associated with the conflicting demands of his account of substantiality. In *Meta*. 7.6, 7.10-11, 7.17, and 8.6 Aristotle argues for a certain characterization of primary ὀὐσία. Primary ὀὐσία must be immediately a being and immediately a unity, and its intelligibility as a kind of thing must depend on nothing other than itself. Therefore, it must be unqualifiedly identical to some essence and have no intelligibility apart from that essence. By contrast, experience shows that sensible substances such as biological organisms are not essences and simple unities but rather unified pluralities. Every human being will have a multitude of parts and accidents that are not unqualifiedly identical to humanity. Although these parts and accidents are intelligible only in terms of humanity (or some genus to which humanity belongs), to be a human heart or to be musical (for instance) is something different from just to be human. 138 Since motion and generation require a ὑποκείμενον distinct from their termini, it follows that these too require complexity within substance. 139 *Meta*. 7.6 has shown that some instance of ὀὐσία, primary ὀὐσία, must be identical to its essence; but the phenomena of plurality and change require that sensible ὀὐσία, with its attributes and material components, not be this primary ὀὐσία. 140

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138 I take this to be the implication of *Meta*. 7.4.1029b16-22 and 7.6.1031a19-28; though this needs more argument than space permits here. If my reading of Aristotle is correct, his reasons for denying the identity of sensible substance and essence are essentially Parmenidean: if something is simply 𝑥 primarily and identitatively, there is no basis for it also to be anything distinct from 𝑥; but both the matter and the accidents of a sensible substance are distinct from what it is to be that substance essentially. On the definition of parts and accidents in terms of substance see *Meta*. 7.5, 7.10.1035b3ff., 7.11.1036b28-32.

139 Cf. *Phys*. 1.7-9; *Meta*. 7.7-9, 12.2-3. The terminus of generation is form and essence.

140 Irwin seems unaware of these problems when he identifies sensible substance with essence (1988: 217-19); he does not discuss the *Meta*. 8.6 passage. Scaltsas, by contrast, is aware of the difficulties presented by the identification. He argues, in effect, that substance is a plurality only in abstraction; in actuality the various components (form, matter, and accidents) that have independent identities in abstraction are unified by being "re-identified" by the form, which is itself to be identified with the substance. See Scaltsas 1994: 3-4, 61-9, 83-7, 97-120, 191-8. This is in effect to make the concrete actual substance a simple unity: the problem of a unity-in-plurality in sensible substance is solved by denying the plurality. It is difficult to see, however, how something can acquire intelligible content in abstraction that it did not have in the concrete actuality that it was abstracted from; certainly Scaltsas realizes that the components that are separated in abstraction cannot be "simply creations of our own mind" (p. 190). Scaltsas's explanation of this multiplicity in terms of truth-conditionality (pp. 118-20) posits the explanandum as the
Aristotle’s aim is thus to preserve the substantiality and intelligibility of sensible \( \varphi\varphi\sigma\alpha \) by positing essences and primary \( \varphi\varphi\sigma\alpha \) that are such as to be able to be causes of the substantiality of the sensible substances whose essences they are. In this way Aristotle attempts to circumvent the classical Platonic and Parmenidean dichotomies between what is and is intelligible on the one hand, and the sensible world of opinion on the other hand. Plato thought it necessary to draw a sharp distinction between being and becoming: the sort of thing that becomes (i.e., the sensible world) cannot also be the sort of thing that is. Corresponding to this distinction is the dichotomy between knowledge (\( \varepsilon\pi\sigma\tau\tau\mu\eta \)) and opinion (\( \delta\omicron\xi\alpha \)): the object of knowledge is being and \( \varphi\varphi\sigma\alpha \), whereas the object of opinion is the sensible world that is in the process of becoming.\(^{141}\) There are undoubtedly many reasons for Aristotle’s rejection of the dichotomy: it is clear enough from his criticisms of Plato’s Forms that, even apart from any other considerations, Aristotle rejected the metaphysics of Platonism on grounds of internal incoherence. It would appear that a significant additional motivation must have been the desire to achieve some sort of scientific intelligibility for the sensible world: there is not only a “likely story” of the sensible world but a science (\( \varepsilon\pi\sigma\tau\tau\mu\eta \)) of physics and sensible substance.\(^{142}\)

Nevertheless, there are several reasons why the search for primary \( \varphi\varphi\sigma\alpha \) cannot stop at immanent form. First, immanent form does not unqualifiedly meet the criteria of substantiality. It is separate only in \( \lambda\omicron\gamma\omicron\omicron \), and a substrate only in the qualified sense of not being an attribute of another substance. Second, while the essence of a sensible substance \( x \) is primary-being-\( x \), it is not primary being simpliciter, the being in terms of which the being of all other beings are to be understood. Finally, the causality of immanent form is restricted to making a substance a \( \tau\iota \ \varepsilon\sigma\tau\iota \) and \( \tau\omicron\delta\omicron \ \tau\iota \) while that substance is in existence. The causal activity of the essence assumes that the substance has already been brought into existence; had the substance not come into being, its essence would not have had the

\(^{141}\) This distinction is found particularly at Rep. 5.476e-480a with 6.485ab, passing references throughout Rep. 7 (525b, 525c, 526e), Rep. 7.533e-534b, Tim. 27d-29d, 51d-52c.

\(^{142}\) Tim. 29b3-d3 (\( \tau\omicron\omicron \varepsilon\lambda\omicron\sigma\alpha \mu\omicron\theta\omicron\omicron \nu \), d2). Notice that the reason for the unreliability of Timaeus’s account of the sensible world is precisely the latter’s character as an image of the eternal and intelligible world. Cf. Meta. 6.1.1025b26-1026a6.
opportunity to be a cause of its being. Likewise, despite the fact that it is a cause of being, the essence of a sensible substance does nothing to prevent the eventual perishing of that substance. This is an especially serious shortcoming if, as Aristotle thinks, the principles of being are principles of scientific intelligibility, and the objects of science must be eternal. There are thus several reasons to think that the search for primary ὄσια must continue to include separate form, as Aristotle himself suggests in *Meta* 6.1. Our last chapter shall be concerned to determine the extent to which Aristotle successfully deploys separate form as the nature of being and a principle of being.
Chapter 9
Separate Form as a Principle of Being

Our last three chapters have shown how Aristotle attempts to develop an account of the principles and causes of being, one of the tasks of the science of being qua being. Although we have argued that immanent form and essence plays an important role in the science of being as the primary ὀυσία and αἴτιον τοῦ ἐίναι of the sensible substance whose essence it is, Aristotle's account of the principles of being consistently suggests that the nature of being is to be found in separate form, or Aristotle's god. This is in evidence as early as Meta. 6.1, where the science of being is identified with first philosophy and theology, and is supported by the limitations that Aristotle puts on the sense in which immanent form can be primary being and a cause of being. Immanent form and essence is primary being-something and the cause of a sensible substance's intelligibility as that thing, but primary being-something is not primary being simpliciter nor is the being of a sensible substance fully explained by immanent form.¹

Our last task is thus to determine to what extent Aristotle develops an account of separate form as the nature of being and a principle of being. We have already suggested, and shall argue here at length, that Aristotle does not provide an ex professo account of the role of separate form in the science of being. Although Aristotle does provide a lengthy account of separate form in the treatise that has come down to us as book 12 of the Metaphysics, in this account separate form is treated merely as an unmoved principle for physics. We shall argue that although the book's substantive doctrine is broadly consistent with that of the rest of the Metaphysics, from a methodological point of view the book "is not conceived or adapted to form an integral part of the procedure

¹ See chapter 8, pp. 271-2 above. Note also Meta. 7.11.1037a10-17 and 7.17.1041a6-9, which unequivocally suggest that the τέλος of Aristotle's inquiry into sensible substance is an account of unqualifiedly separate substance (Meta. 7.3.1029b3-12 supports this interpretation but does not unequivocally point to separate form as the terminus of the investigation). Note also that in Meta. 9.8, the priority of separate form is the "more dominant" case in which actuality is prior to potency (1050b6ff.).
undertaken there." Nevertheless, it is possible to see hints of the direction Aristotle may have been pursuing, especially in several texts outside the *Metaphysics* proper.

I

The relation of book 12 to the *Metaphysics* as a whole is not easy to determine. The book’s conclusions about the existence and nature of a pure thinking actuality are what one would expect from the central books’ identification of primary ὑσία with essence and essence with actuality. If one may identify unqualifiedly primary ὑσία with Aristotle’s god, then it is not surprising that *Meta.* 6.1 should identify the science of being qua being with theology. The question is whether book 12 completes Aristotle’s project in the way anticipated by these texts.

Even at the superficial level of literary structure, several oddities raise doubts. Apart from book 12, the treatment of the principles and causes of being forms a reasonably intelligible continuous whole from *Meta.* 6.1 to *Meta.* 9.9. *Meta.* 6.1 introduces a study of the causes of being, *Meta.* 6.2-4 narrows the field of study to exclude accidental being and being as truth, *Meta.* 7-8 studies the nature and causes of being as they are found in sensible substance, and *Meta.* 9.1-9 undertakes an investigation of actuality and potentiality, apparently for the purpose of clarifying the nature of substantial actuality. One would expect the treatment of separate actuality as a nature and principle of being to be part of this continuous treatment. In our *Metaphysics,* however, book 9 is followed by two books that contribute nothing more to the discussion at hand: book 10 is the treatment of unity and its attributes demanded by *Meta.* 4.2, while book 11 is a (possibly spurious) summary of the methodological books and several passages from the *Physics.* With book 10 Aristotle has moved on to a different task (though still one that

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2 Owens 1978: 454; see also Kahn 1985a: 323. The exclusion of book 12 from the “main series” of the *Metaphysics* is thus not limited to nontheological interpretations of Aristotle’s project. Although Gerson (1990: 120-41) takes *Meta.* 12 to be part of the project introduced in the methodological books, he argues that it fails to achieve the task it was intended to do. For more positive evaluations of the role of this book, see, e.g., Reale 1980, Rist 1989.
3 Chapter 10 (on being as truth) gives the impression of having been attached to book 9 in the absence of any better place for it.
4 Aristotle’s discussion of the priority of eternal actualities to potencies in *Meta.* 9.8 would seem to provide the logical transition. (It is possible to envisage chapter 9 as a brief digression.)
his part of his conception of the tasks of metaphysics); with book 11, we appear to have
moved into the "appendices." If book 12 is meant to be the fulfillment of Aristotle's
project in the *Metaphysics*, its placement in its current position is peculiar.\(^5\) The situation
is not really improved by transposing book 12 after *Meta*. 9.9. The book's treatment of
separate substance is an integral part of a treatment of substance in general, including a
treatment of sensible substance (chapters 2-5). If *Meta*. 12 is meant to follow the central
books, any further treatment of sensible substances would surely be superfluous.

The significance of the presence of a treatment of sensible substance in book 12 is
best appreciated when one considers it in the light of Aristotle's methodological remarks
at the beginning of the book. The book is introduced as a study of the principles and
causes of \(\omega\sigma\iota\alpha\) (1069a18-19). Given the \(\pi\rho\varsigma\varepsilon\) \(\epsilon\nu\) reduction of being to substance, this
seems to indicate an inquiry into the principles and causes of being.\(^6\) This indication is
contradicted by what follows, however: Aristotle does not suggest that there is a science
of substance qua substance, nor does he distinguish the science of substance from physics.
Rather, Aristotle divides the study of substance among several different sciences, one of
which is physics. The study of sensible substance belongs to physics, that of immaterial
substance to another science.\(^7\) Physics is the study of sensible *substances* (1069a30-3, a36-

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\(^5\) Owens (1978:\(^3\): 89-91) further points out that book 12 contains no certain references to (or from) the
"main series" (i.e., roughly, the methodological and "central" books of the *Metaphysics*).

It is true that appeals to macro-structure cannot be decisive, given the fact that we do not know to
what extent the current order of our *Metaphysics* reflects that intended by Aristotle. On the other hand,
our exposition up to this point suggests that (with the exception of book \(\alpha\)) the first ten books of the
*Metaphysics* follow an intelligible if not very elegant order of presentation. AB are preliminary, \(\Gamma\)
troduces the science of being and two of its tasks, EZH\(\Theta\) introduces and begins to undertake the third
task, and I undertakes one of the tasks introduced in \(\Gamma\). The position of \(\Delta\) is slightly odd but intelligible if
one assumes Aristotle felt the need for lexicon somewhere shortly after the introduction of the science of
being. Perhaps the organization is determined to some extent by a desire to avoid either very long or very
short books. So \(\Gamma\) includes not only the methodology but also the development of Aristotle's treatment of
the common axioms (introduced in \(\Gamma\)\(^3\)) in order to avoid two very short books, but not the development of
the *se* attributes of unity (introduced in \(\Gamma\)\(^2\), undertaken in I) in order to avoid being unreasonably long.
\(\Theta\) is added on to \(\Theta\)\(1\)-\(9\) because the former is too short to stand on its own, and the latter is short enough
to have plenty of "room" left over for it. It is also of interest that the longest book of the *Metaphysics* (\(Z\))
is followed by one of its shortest books (only \(\alpha\) and \(E\) are shorter than \(H\)). The division between \(Z\) and \(H\)
may be determined partly by the undesirability of a longer book \(Z\).

on this basis that *Meta*. 12 is part of the science of being.

\(^7\) More precisely, unmoved substances "belong to another science, if there is no common principle between
[sensible and unmoved substances]" (1069a36-b2). It is difficult to read this as a reference to a science of
being qua being (as Rist appears to do in 1989: 278). The implication of this sentence is that if there *is* a
b1), and so part of the study of substance as Aristotle understands this study in book 12. The ensuing treatment of sensible substance is exclusively physical, and there is no suggestion that sensible substances may have principles and causes qua substances and beings. Meta. 12.1 introduces the book not as an investigation into the being and substantiality of substances, still less an investigation into separate form as a principle and cause of this being, but rather as a general treatment of substances that crosses over between physics and first philosophy.

When it comes to establish the existence and nature of an unmoved substance, Aristotle continues to leave aside the considerations to which one would expect him to refer if Meta. 12 were part of the science of being. The argument for the existence of an eternal substance (1071b5-11) is very brief and wholly dependent the argument for the unmoved mover in Phys. 8. In Phys. 8.6, Aristotle attempts to show that continuous motion requires a principle that is itself unmoved both essentially and accidentally. In Phys. 8.10 Aristotle locates this mover on the outer circumference of the universe and shows that it cannot itself have magnitude (267b17-26), but otherwise tells us very little about it, indicating neither the kind of causality it exerts nor whether it is wholly separate from matter.

common principle, unmoved substances do not belong to a different science and hence also belong to physics. Thus if we are meant to understand that there is a common principle, the passage is most naturally read either as a statement that the unmoved mover is in a sense an object of physics (i.e., in its capacity as a cause of motion). If we are supposed to understand that there is no common principle, a reading like Gerson's (1990: 282 n. 72) is suggested—but this is unlikely to be compatible with the view that Meta. 12 is intended to be part of a science of being qua being. Pace Ross (1924: ii.346), the unqualified assignment of sensible substance to physics in Meta. 12.1 is not equivalent to Aristotle's statement in Meta. 7.11 (1037a14-17) that sensibles are "in a sense" (κρόκον τύπο) objects of physics. 8 Pace Gerson (1990: 121), who maintains that Aristotle is drawing a contrast between metaphysics as the study of being and substance and physics as the study of nature.

9 Cf. our discussion in chapter 3, p. 77.
10 Phys. 8.6.259b22-8. As Pegis (1973: 76-7) and Gerson (1990: 116 and n. 59) point out, this rules out the interpretation according to which the unmoved mover reached in Phys. 8 is somehow moved by the unmoved mover described in Meta. 12 (cf. Paulus 1933). Pegis believes that the two treatments refer to the same entity, Gerson that the unmoved mover of the Physics is "demoted" to the plurality of movers of the spheres in Meta. 12.8 (pp. 132-3).
11 Gerson (1990: 118-20) argues that the "weight of evidence" support the view that in Phys. 8 the unmoved mover is an efficient cause. It is possible that as a matter of biographical fact Aristotle was conceiving the unmoved mover as an efficient cause at the time of writing Phys. 8, which would account for the indirect evidence that Gerson cites. On the other hand, Aristotle's failure to mention any kind of causality may well reflect uncertainty on this point. We need not suppose that at the time of writing Phys. 8 Aristotle had developed a clear account of the causality of the unmoved mover which he has simply not
The *Meta*. 12.6 argument is distinguished from the *Physics* argument mainly by the question it asks: is there an eternal *substance*? If there were no eternal substance, Aristotle argues, everything would be perishable since everything is either a substance or dependent on a substance. But motion and time (which is an attribute of motion) are not perishable. Furthermore, since time is continuous, the motion of which time is primarily an attribute must be continuous.\(^{12}\) The implication is that there must exist some substance on which eternal continuous motion is dependent. Aristotle does not explicitly state that it is precisely as a *mover* that an eternal substance is required: nothing in 1071b5-11 requires anything more than an eternal moved substance, and the transition to an eternal mover at b12 is abrupt.\(^{13}\) Not only the cogency of the argument but even its very character as a progression from an effect (eternal continuous motion) to a moving cause is dependent on the background in *Phys*. 8. The entity described in *Meta*. 12 is posited for the reasons that Aristotle presents in *Phys*. 8.6-10.\(^{14}\)

When it comes to establish the nature of this unmoved mover, Aristotle continues to appeal to physical considerations. The character of the mover as a cause of eternal and continuous motion requires both that it have in it a principle that can cause motion (b14-

revealed to us. Thus the ambiguity about the nature of the unmoved mover’s causality in *Phys*. 8 may have both a methodological and a chronological explanation: the study of unmoved entities in themselves properly belongs to first philosophy, which is chronologically posterior in the order of investigation both from a methodological point of view (because unmoved entities are shown to exist through arguments in physics) and in Aristotle’s particular case. The study of the unmoved mover in first philosophy may require revision of physical hypotheses made before that study has been undertaken.


\(^{13}\) That is, motion can be dependent on substance in two ways, either as a further actuality of some moved substance or as the effect of a distinct mover.

\(^{14}\) This indicates that, although Aristotle may characterize the unmoved mover slightly differently in *Phys*. 8 and *Meta*. 12, it would be wrong to say that *Meta*. 12 reaches a different mover from that reached in *Phys*. 8. Thus I follow Pegis rather than Gerson (see note 10 above) on the relation between the two treatises at least for the first unmoved mover. This does not, however, prevent Gerson from being right in maintaining that any additional movers posited to account for complex motions must be “demoted,” e.g., to souls of the spheres and thus efficient causes of their motion (1990: 131-4). The reason for this demotion, however, lies in Aristotle’s account of the unmoved mover as a pure actuality without matter, which (according to 12.8.1074a31-8) rules out the possibility of a plurality of such movers. *Phys*. 8 proves that a mover of the sort later described in *Meta*. 12 must exist; the account of the nature of this mover in *Meta*. 12 shows that there can be only one such mover, so that if other movers are posited for empirical reasons they must somehow be different from the first one. This would also imply that the secondary movers, because they cannot themselves be pure actualities, must depend to some extent on the unqualifiedly unmoved mover for their activity. Presumably their ὀρεκτικά would be moved by the unqualifiedly unmoved mover in its capacity as ὀρεκτόν. See note 24 below.
16), and that this principle be continuously active. For this reason, the mover cannot be something distinct from this principle, with the potency of sometimes moving and at other times not.\(^{15}\) Rather, the mover must simply be this principle as an actuality (b17-20).\(^{16}\) Given this identification it seems almost superfluous to add, as Aristotle does, that since the mover is eternal it cannot have matter (b20-2). The rest of the chapter is devoted to the objection that the first mover cannot be an actuality, since potency is prior to actuality. Aristotle’s reply is simply that the premise on which the objection is based is false: in at least some senses, actuality is prior to potency (1072a3-4).\(^{17}\)

In chapter 7 Aristotle moves on to consider the causal activity of the unmoved mover.

\[\ldots\] there is something that is always moved with an unceasing motion, which is circular; and this is clear not only from arguments but also from the facts. So, the first heaven must be eternal; and there is something that moves it. And since that which is moved and is a mover is an intermediate, there is something that causes motion without being moved, and this is eternal, a substance, and an actuality. And this is the way in which an object of desire [τὸ ὀρέκτόν] or the intelligible object moves, namely, without itself being moved. (1072a21-7)\(^{18}\)

\[^{15}\] Gerson (1990: 122) suggests that we should understand Aristotle as implicitly arguing that if the mover were only potentially a mover, something else would be necessary to actualize that potential, with a vicious causal regress as a result. As it stands Aristotle’s argument is vulnerable to criticisms concerning the nature of possibility; see Gerson, pp. 107-8, 116-17. Gerson’s interpretation makes the argument much stronger without departing from anything Aristotle might have meant to imply: as we have pointed out, much of the argument up to this point is extremely sketchy.

\[^{16}\] It is this, and not the fact that it is the primary instance of being, that demands that the mover be a pure actuality (pace Gerson 1990: 133). Notice also that Aristotle repeats the Physics argument that the unmoved mover cannot have magnitude at Meta. 12.7.1073a5-11.

\[^{17}\] The basis for this conclusion is disputed: at 1072a4 Aristotle simply says that he “has said how” actuality is and is not prior to potency. This might be a reference to Meta. 9.8 (as Apostle, comm. 25 ad loc. thinks); but following Bonitz, Ross (1924: ii.371) argues that this is too brief to be a reference elsewhere. (Also, Rist dates Meta. 9 after Meta. 12, though he does not take account of this particular passage.) Moreover, the discussion in which the reference is found is dialectical and not very sophisticated, which is not what one would expect were Aristotle in a position to refer us Meta. 9.8. For these reasons I am inclined to follow Ross and Bonitz in seeing a reference rather to 1071b22ff.

\[^{18}\] The text here is at least slightly corrupt. I follow Ross’s reconstruction, which is largely reflected in Aristotle’s translation. However I follow Ross and the ROT in translating ἐστιν τοῖνον τι ἐκεῖ (a23-4) as “there is something that moves [it]” rather than “there is something which [it] moves.” As Ross points out, the inference from a moved first heaven to a mover is valid, but not that from a moved first heaven to something moved by it—that there is something moved by the first heaven is part of Aristotle’s empirical “data.” Ross’s reading also provides the most natural transition to the discussion of the unmoved mover.
The argument recalls *Physics* 8.5: for every moved mover there must be another mover that is unmoved, whether this be the soul of the moved mover or something wholly separate from it. *Meta.* 12.6 has already shown that an unmoved mover must be an actuality without matter, which indicates that the mover must be wholly separate. Finally, Aristotle concludes that the unmoved mover must move as an object of desire.

What is somewhat puzzling is the reasoning from the fact that the first mover is an unmoved mover to the fact that it is a final cause.\(^\text{19}\) Perhaps the conclusion is partly the result of a failed attempt to conceive an immaterial mover as an efficient cause, though if so Aristotle does not provide the arguments that led him to reject the latter alternative.\(^\text{20}\) It is perhaps equally to the point by the time Aristotle is writing *Meta.* 12 that the unmoved mover is *unmoved*. The last sentence from the paragraph quoted above (1072a26-7) could be making this point: at least in naturally occurring motion and generation, the kind of thing that is an unmoved mover is an object of desire or a final cause.\(^\text{21}\) It is not clear that Aristotle always held this view: as we have seen, *Physics* 8 may implicitly conceive of the unmoved mover as an efficient cause, and several passages in the *GC* appear to maintain that efficient causes can be unmoved.\(^\text{22}\) On the other hand, *Phys.* 2.7 strongly suggests that efficient causes must be moved movers (198a27), and explicitly indicates that at least in

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\(^{19}\) By contrast, immanent form is introduced precisely as a terminus of generation and thus as a final cause.

\(^{20}\) For this suggestion see Rist 1989: 117. Similarly Gerson (1990: 124) appeals to the fact the [that] unmoved mover is a pure actuality, going on to maintain that the conclusion "is drawn from psychology and ethics and rests on plausible reasoning rather than any demonstration." But presumably the analogy from psychology and ethics draws not on the fact that objects of desire are pure actualities but rather on the fact that they are unmoved. See *DA* 3.10 and note 24 below.

\(^{21}\) In τέχνη it appears that the form in the mind of the artisan, which is in a sense the same as the τέχνη itself, is the efficient cause: *Meta.* 7.7.1032a32-b30 (esp. b21-3), 12.4.1070b28-35 (but notice that it is the man, and not his soul, that generates another man). However, τέχνη are possible only because the human soul can move the human body. From the point of view of this natural motion the εἴδος (whether it be of a house or of health) would presumably serve as an ὑπερτόν and hence as an unmoved object of desire.

In the *MA* (chaps. 2-4) Aristotle writes that motion caused by moved movers is possible only if there is an unmoved entity to provide resistance, but he does not call this entity a "mover." In fact *MA* 3 specifically rules out the presence of such an object in the explanation of the movement of the spheres.

\(^{22}\) *GC* 1.3.318a1-10, 1.7.324a30-b19. Both of these passages are puzzling in appearing to exclude the final cause from the class of physical movers (318a1-3, 324a15).
the case of immanent form an unmoved mover will be a final cause (b4-5). Aristotle is likely also relying on the analogy to the role of the ὀφεκτόν as an unmoved mover in the explanation of desire and movement in animals.

Up to this point what we have seen is an investigation into the nature of an unmoved entity based on the effects it is meant to explain. First philosophy uses considerations drawn from physics, ethics, and psychology to show that the first unmoved cause of motion must be an unqualifiedly separate entity that moves as a final cause. In the last half of 12.7 Aristotle argues that the activity of the unmoved mover “is like the best that we can have but for a little while,” which is thinking (1072b14-19). The argument seems to draw once again on ethics and psychology. What is noticeably absent from these considerations, however, is an argument for the nature of the unmoved mover precisely as the nature and primary instance of being. There is nothing in the text that explicitly indicates that Aristotle “is working towards the conclusion that [the unmoved mover] is the nature of being and the demonstration that this nature is derivatively expressed in absolutely every case of being.”

Aristotle’s discussion in Meta. 12.6-10 rather reflects a quite different approach to first philosophy, one which we have already seen him advocate in the Physics passages we discussed in chapter 7. Aristotle’s arguments in Phys. 8.6-10 indicate that there must be an unmoved mover and that this mover cannot have magnitude. The Physics, however, is not interested in the nature of the unmoved mover. Since it is unmoved, it is not an object of physics and inquiry into its τι ἐστι properly belongs to a different science. Meta. 12.6-10 reflects this division of labour: after a brief summary of the Physics argument for the

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23 τέλος γὰρ καὶ ὀφεκτόν refers at least to immanent form and possibly also to the unqualifiedly unmoved mover.

24 Meta. 12.7 1072a26-31. Cf. also MA 5.700a25-701a1. As Gerson points out (note 20 above), the analogy is not a demonstration. On the ὀφεκτικόν as a moved mover see DA 3.10 (esp. 433a31-b21), MA 10.703a4-9. See also Richardson 1992: 387-95. By the “object of desire” we should probably understand “the object of desire qua grasped by intellect or φαντασία”; in addition to the passages already cited see DA 3.7.431a8-14. Note that the souls of the first heavens, insofar as they are movers, are not unqualifiedly unmoved: their ὀφεκτικόν is a moved mover. The ὀφεκτικόν moves the body and is itself moved by the ὀφεκτόν. It is the ὀφεκτόν, and not the ὀφεκτικόν, that is wholly unmoved with respect to the motion it causes. The account of the soul as an efficient cause of motion is thus compatible with the view that unqualifiedly unmoved movers are final causes.

25 Pace Gerson 1990: 123.

26 See section I of chapter 7, above.
existence of the unmoved mover, Aristotle moves on to a detailed discussion of its τι ἐστὶ and causal activity. Physics can establish that an unmoved entity must be posited to explain the phenomenon it studies, motion; but the investigation of this entity in itself belongs to first philosophy. On the other hand, there is no sign that, as it conceived in *Meta*. 12, first philosophy is also a universal science of being.

We must conclude from this that *Meta*. 12.6-10 is not the treatment of separate form demanded by Aristotle's identification of the science of being with first philosophy. Nevertheless it is easy to see how, having arrived at the existence of an entity of this sort, Aristotle might have been tempted to put this entity to use in a science of being. Against a Platonic background that conceives being in terms of permanence and intelligibility, nothing is a better candidate for the nature of being than something that is both unqualifiedly unmoved and eternal and is not only intelligible but actively thinking itself. In other words, without itself making the identification between god and the nature of being, Aristotle's conclusions in *Meta*. 12 may well have suggested the train of thought that by *Meta*. 6.1 has led to the identification of metaphysics with theology and first philosophy. In what follows we shall examine some texts that suggest how Aristotle might have developed this account of separate form into an account of the nature and principles of being.

II

A metaphysical account of separate form must explain two things: how separate form is the nature of being and how it is a principle of being in other things. Although

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27 The treatments of the unmoved mover in physics and first philosophy are thus distinguished by the fact that the former establishes that (ὅτι) such a principle must exist, whereas the latter establishes its τι ἐστὶ. The relation between the two sciences thus somewhat resembles Aristotelian subordination (*APo* 1.13.78n32-79a16). This solution to the problem of the relation between *Phys*. 8 and *Meta*. 12 is due originally to Averroes (*in Meta*. 1420-36, trans. Genequand 1984: 72-80); and is re-stated and attributed to Aquinas by Pegis (1973). See also Kahn 1985a: 318-19.

28 This requires the assumption that *Meta*. 12 predates *Meta*. 6.1. This is not unreasonable given the complete absence of any unequivocal mention of a science of being. Alternatively, one might see the book as an attempt an investigation of substance that simply abstracts from the question of their being and substantiality. Such an approach may have been necessary if Aristotle had wanted to write something about the existence of separate substance but had not yet worked it into a science of being to his satisfaction.
there is no explicit account of separate form in the central books, the treatment of
immanent form in these books seems to be aimed ultimately at clarifying how the nature of
substance is to be found in separate form. In *Meta.* 7.6, Aristotle identifies primary
οὐσια with τι ἢν εἶναι; in *Meta.* 7.10-11 and 8.2-3 the τι ἢν εἶναι of a sensible
substance is identified with its form and actuality.

As we saw in chapter 8, two obstacles prevent immanent form from being the
nature of being and substantiality. First, *Meta.* 7.1-3 introduces three criteria for primary
substantiality which apply to immanent form only qualifiedly: substances must be
unqualifiedly separate, a "this," and a υποκείμενον. Immanent form is separate in λόγος
and a τόδε τι; and is a υποκείμενον in the qualified sense of not being predicated of any
other substance. Thus, while immanent form retains causal priority over the composite, it
seems clear that it cannot be unqualifiedly primary υσια. If there were some essence and
actuality that did possess these characteristics unqualifiedly, then presumably that would
be unqualifiedly primary υσια.

The second obstacle to locating the nature of being in immanent form is the fact
that immanent form is (at least) a specific plurality. By *Meta.* 7.11 Aristotle has identified
primary υσια with essence and the essence of a sensible substance with its form; but the
form and essence of a sensible substance is always the form and essence of some specific
kind of thing. As Aristotle puts it in *Meta.* 8.6, essences of sensible substances are
"immediately just a certain unity as well as just a certain being," but they are not
immediately just being itself. The form and essence of a dog, we have argued, is the
principle in a dog that is unqualifiedly being-dog and unqualifiedly one-dog. But to be the

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29 This is confirmed by Aristotle's own remarks in *Meta.* 7.11 and 7.17: see note 1 above. I think it is the
substantiality of immanent form, and not that of the composite, that is the substantiality that Aristotle is
using as a model for that of separate form, for the following reasons: First, primary υσια is essence, and
we have argued that it is the form and not the composite that is identical to its essence. Second, we have
argued that it is the form that is the actuality of a sensible substance: the composite is a "mix" of actuality
and potency. The composite possesses certain characteristics unqualifiedly that the form possesses only
qualifiedly, but (1) we have argued that the composite possesses these characteristics not in its own right
but only in causal dependency on the form, and (2) the form does possess these characteristics qualifiedly
whereas the composite is in no sense identical to its essence and hence in no sense primary υσια.

30 This account of immanent form is developed in our eighth chapter; see esp. pp. 248-9 above.

31 *Meta.* 8.6.1045a36-b1: εὔθος δὲπ ἐν τι . . . , ὡςπερ καὶ δὲπ ἄν τι. On this passage see chapter 8,
pp. 268-9 above.
entity that is unqualifiedly being-dog and one-dog is not the same as to be the nature of being and unity. The central books tell us that primary being and substantiality is form, essence, and actuality, but they never move beyond the essences of specific sensible substances to something that is just form, essence, and actuality itself.

One way there could be something that was just form (or essence), without being some specific form, is if there were a genus of form predicable univocally of all forms.\textsuperscript{32} We have argued that Aristotle rejects the view that genera are principles. There are especially good reasons to reject this view for some putative genus of form and essence. If there were a genus of form, it would have to be differentiated into species, for example, the form of a dog and the form of a cat. In \textit{Meta.} 7.12, however, Aristotle argues that it is precisely form that differentiates. Form must be precisely the entity that bestows difference and intelligible content: it cannot itself be the kind of thing that is differentiated.\textsuperscript{33} If there were a nature of form and essence, then, it would not be something predicable univocally of every kind of form.

The implication is that if there is a nature of being and substance, it will be something to which form and essence as it is found in sensible substance is related πρὸς ἐν: forms and essences in sensible substances would be so called owing to their πρὸς ἐν relation to some primary instance of form and essence. Although Aristotle does call separate form primary οὐσία and primary τί ἐστι (\textit{Meta.} 12.8.1074a35-6, b9), he does not attempt to establish a πρὸς ἐν relation between separate form and the multiplicity of immanent forms.\textsuperscript{34} Nevertheless, it is possible to see why Aristotle may have wanted to conceive separate νοῦς as the ἐν by virtue of which other instances of form and essence are forms and essences. Form is related to νοῦς as its object, and in actively thinking νοῦς

\textsuperscript{32} Likewise for a genus of essence, but we have argued that the essence of a sensible substance is to be identified with its form.

\textsuperscript{33} "The Aristotelian form . . . of its very nature denotes \textit{difference}, and therefore intelligible \textit{content}. The form of anything is most properly expressed by its \textit{ultimate difference}. Consequently, the form does not require anything else to differentiate it." Owens 1978: 458-9.

\textsuperscript{34} The context in \textit{Meta.} 12.8 makes no suggestion that separate form is the primary instance of a πρὸς ἐν equivocal. Rist (1989: 243, 277) argues that πρὸς μὲν γὰρ ἐν ἄκανθα συντάσσεται at 12.10.1075a18-19 is a reference to πρὸς ἐν equivocality, but does not explain how the suggestion that all things are ordered to one thing can imply that the thing to which they are ordered is the primary instance of the πρὸς ἐν equivocal that is being and substance. The context seems to be entirely that of physical teleology, not that of a science of being.
becomes identical with the object of thought. There is thus at least the temptation to conceive of god as containing all the forms virtually in its capacity as “thinking” and the highest object of thought.\textsuperscript{35} We have no ex professo account of this προς ἔν reduction is possible, perhaps because Aristotle was unable to solve the problems involved to his satisfaction.\textsuperscript{36} It is possible to see the destination pointed at by Aristotle’s account of being and substantiality in the central books, but it is not clear what path Aristotle intended to follow to arrive there.

III

We have argued that there are good reasons to think that Aristotle ultimately intended to identify the nature of being in separate form: to be, for Aristotle, is to be a form, essence, and actuality that at the same possesses unqualified separation, thisness, and substrateness. From this characterization of separate form we can infer that it must be the paradigm instance of an object of first philosophy: it is an essence and actuality without being the essence and actuality of some sensible substance, and so lacks any material principle. Lacking this material principle, it will be unqualifiedly unmoved and unqualifiedly eternal. If the nature of being and substance is to be found in this entity, then Aristotle would seem to be justified in identifying the science of being with first philosophy in Meta. 6.1.

Having made this identification, it is necessary to explain why the science of being is universal. The model of universality that we suggested in chapters 7 and 8 is one

\textsuperscript{35} Kahn (1985a: 326-8) and Lear (1988: 298-305) argue that god’s thinking is somehow the thinking of all intelligible objects taken as an indivisible whole (see esp. Lear, pp. 303-5; also de Koninck 1994.) This would seem to be the only way of avoiding making “thinking of thinking” an essentially empty concept.

This position is an attractive explanation of how god may be the primary instance of form but, as Gerson (1990: 139) points out, it is difficult to see how a multiplicity of intelligible contents can come together to be something simple and perfectly actual. In the absence of textual evidence, attempts such as those of Kahn and Lear (as well as attempts to decide whether the unmoved mover should be identified with the active intellect) can only be speculative as interpretations of the historical Aristotle. (They are, however, of philosophical interest as attempts to develop Aristotelian ideas, perhaps further than Aristotle himself was able. It seems likely that Aristotle himself did not have a developed account of these issues.)

\textsuperscript{36} Gerson (1990: 139-141) argues that the reason for Aristotle’s failure is his initial identification of being with существа и вечноν. Aristotle’s failure to identify primary being in separate form is thus the result of a fundamental error about what it means for something to be.
whereby generic univocity is replaced by causal priority and προς εν equivocity: the
science of unmoved substance is a universal science of substance because unmoved
entities are the cause of the derivative substantiality in sensible substances. In chapter 8 we
attempted to show how immanent form and essence is at once primary substantiality and
the cause of substantiality in sensible substances: thus the study of immanent form can be
a universal science of being because form is at once primarily one and something (τόδε τι
and a τι ἐστι) and the cause of this phenomenon in the sensible composite. The question
is whether this applies analogously for separate form. If separate form is the nature of
being and substance, it should be causally responsible for the presence of its nature
derivatively in other substances.

We saw in our account of the central books that immanent form and essence has
an important and sharply defined role in the Metaphysics: it is the principle in an existing
substance that is itself primarily a “this” and “what” and is responsible for the thisness and
whatness of the composite whose form it is. It seems clear that Aristotle regards the
substance’s form and essence as the first cause of this phenomenon: the essence’s own
thisness and whatness is not in need of explanation. If we are seeking to identify a causal
role for separate form in the science of being, we must look elsewhere.

In Meta. 12, as we have seen, Aristotle argues that the causal role of the unmoved
mover is that of a final cause of motion. As Gerson emphasizes, an entity whose sole
effect is motion seems unpromising as a candidate for a first principle of being.37 On the
other hand, our analysis of the causality of οὐσία in sensible substances suggested that it
too is a cause of being in its capacity as a cause of motion. Being for living things is life,
and the soul is οὐσία and a cause of being in composite living things in its capacity as the
cause of their life.38 At least in living things with matter, however, life is defined largely in
terms of certain characteristic motions (DA 413a23-5). On Aristotle’s view, the fact that
something is a cause of motion does not rule it out as a cause of being, if the kind of
motion it causes also constitutes the derivative beingness of some entity. Being in its

38 DA 2.4.413b12-14. For discussion of the issues raised by this passage see section VIII of chapter 8,
above.
primary instance connotes qualities that cannot belong to sensible substances; in particular, sensible substances cannot be per se intelligible, immovable, or, eternal. We should not be surprised, therefore, if being in sensible substances is matter and motion organized so as to imitate their principle in an immaterial entity.

In what follows we shall point to several texts outside the *Metaphysics* that suggest that Aristotle ultimately intended to conceive the unmoved mover as a cause of being in its capacity as a cause of the eternity of the species. As a cause of eternity, separate form is also responsible for the existence of eternal truths about sensible substances. Separate form thus serves to make the intelligibility given to an individual by its (immanent) form an eternal scientific intelligibility and the basis for demonstrating necessary truths. This confirms the suggestion that part of what it means to be is to be something eternal and unchanging.

Although there is evidence for this view scattered throughout the corpus, none of the relevant passages is found in a properly metaphysical context. Only one text explicitly draws a connection between eternity and being:

Generation and corruption will, as we have said, always be continuous, and will never cease owing to the cause we have stated. This has come about with good reason. For in all things, as we say, nature always desires the better. Now being (we have explained elsewhere the variety of meanings we recognize in this term) is better than not-being; but not all things can possess being, since they are too far away from the principle (δρχή). God therefore adopted the remaining alternative, and fulfilled the perfection of the universe by making generation uninterrupted; for the greatest possible coherence would thus be secured to existence, because the perpetual generation of generation itself is the closest there is to οὐσία.\(^{41}\)

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\(^{39}\) For discussions of the unmoved mover’s role as a cause of eternity, with varying degrees of emphasis on its role as a cause of being, see Kahn 1985a and 1985b, Owens 1978\(^3\): 460-5, Brague 1988: 403-13, Verbeke 1986, Owens 1979. Kahn (1985b: 186) maintains that the unmoved mover is necessary not only as a cause of eternal generation but also as a joint cause, with the form and οὐσία of a sensible organism, of that organism’s life. I suspect Kahn is correct on this count, though I am more concerned in this chapter with the additional explananda that only separate form is posited as a cause of. In general, Kahn’s articles should be consulted for an extended discussion of many of the issues that can only be touched on here.


\(^{41}\) *GC* 2.10.336b25-337a1; trans. ROT with modifications.
There are several reasons to think that this is not a mature statement of Aristotle’s views. The straightforward contrast between generation on the one hand and being and oũσία on the other reflects the Platonic dichotomy between the two, and Aristotle’s account of the continuous generation of the sensible world suggests the status of a mere imitation of being rather than a derivative instance of being. As Gerson points out, the passage and its context appear to assume an immanent efficient cause rather than a separate final cause. Nevertheless, the passage suggests there is something being-like in continuous generation and that some divine entity is causally responsible for this phenomenon. This may still be the case even after the development of Aristotle’s conception of this entity.

The same account of the phenomenon explained by the unmoved mover is found in two texts from the De anima and Generation of Animals:

The function of [the vegetative] soul is to reproduce and use food. For the most natural function of living things which are perfect and neither defective nor generated by chance is to produce another thing like itself . . . in order that they may partake in the eternal and divine as far as they can; for all [living things] desire [the eternal and the divine], and it is for the sake of this that those which act according to nature do so . . . Accordingly, since [such] living things cannot share in the eternal and the divine continuously (because no destructible thing, which is the same and numerically one, can last forever), they partake in the eternal and the divine only as far as they can, some sharing in these more, others doing so less; and what lasts forever is not that which is [numerically one and] the same, but something like it, i.e., something which is one not numerically but in ἐτέρωσις. (DA 2.4.415a25-b7)

Now some existing things are eternal and divine whilst others admit of both existence and nonexistence. . . . And soul is better than body, and the living, having soul, is thereby better than the lifeless which has none, and being is better than nonbeing, living than not living. These, then are the causes of the generation of animals. For since it is impossible for the nature [φύσις] of such a genus to be eternal, therefore that which is generated is eternal in the only way possible. Now it is impossible for it to be eternal numerically—for the oũσία of things is in the particular, and if it were such it [the particular?] would be eternal—but it is

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42 Kahn seeks to “de-Platonize” the passage by inserting “<always>” after “not all things can possess being” and by rendering oũσία as “being <forever>,” but I see no philological reasons for these modifications. Another difficulty is that the passage seems to be concerned only with elemental generations, not those of complex organisms; though cf. GC 2.11.338b14-17.

43 Gerson 1990: 287 n. 109. Additionally, Gerson argues that a cause of eternal generation and corruption is not a cause of being. We are arguing, by contrast, that undergoing eternal generation and corruption is precisely part of the derivative sense in which sensibles are beings.
possible for it [to be eternal] in ἐιδωλ. This is why there is always a genus of men
and of animals and of plants.  

Reproduction is for the sake of “the eternal and the divine.” Consistently with Aristotle’s
approach in Meta. 12, separate form is conceived as a final cause. It is, however, not just a
final cause of motion but specifically of the kind of motion that gives the sensible world
some resemblance to separate form: it is the final cause of continuous generation and
hence of the eternity of the species.

The passages do not, of course, identify the eternity of the species as part of the
“beingness” of the sensible world: the context of these passages is that of biology rather
than that of the science of being. If, however, one is prepared to accept the thesis that
being as it is found in the sensible world is in effect motion and generation of certain
specific kinds—notice how being and life are again implicitly identified in the GA
passage—then one should not be surprised if the derivative being that is the explanandum
of metaphysics is a certain kind of motion. The passages do not explicitly identify the
eternity sought by sensible organisms with their (derivative) beingness, but they prepare
the way for a treatment of separate form as a cause of being.

Another difficulty concerns the kind of causation that should be attributed to the
unmoved mover as a cause of this phenomenon. Meta. 12 requires that the unmoved
mover be a final cause, and our DA and GA passages tend to confirm this position. As
Gerson points out, however, only the soul of the first moved mover can straightforwardly
be said to “desire” or seek to imitate the unmoved mover. If one is to say that the
unmoved mover is a genuine final cause, it is necessary that the eternity of the species
through reproduction not only be similar to that of the unmoved mover but rather be
caused by its eternity. The difficulty may perhaps be solved if one allows the unmoved

44 GA 2.1.731b24-732a1, trans. ROT with some modifications for the sake of consistency. Cf. also GC
2.11.338b14-17.
45 This interpretation becomes all the more plausible if one accepts Rist’s chronology, according to which
our Metaphysics is a relatively late work and the DA and GA among Aristotle’s last works. Thus the DA
and GA open the way for a treatment of the causal role of separate form, which had it been written would
have completed Aristotle’s metaphysical project.
47 In other words, as Gerson (ibid) points out, it cannot imitate the unmoved mover merely in the same
mover to be directly the final cause of the eternal activity of the first moved mover and indirectly the final cause of the activity of other moved entities through a chain of efficient causes beginning with the first moved mover. It is not clear whether this is consistent with Aristotle's overall account of final causality, however, and at any rate Aristotle does not himself offer any explicit solution to the problem. 48

What does emerge from these passages, however, is that if there can be a clear account of the causality of separate form, the latter can play an important role in the science of being as a cause of the eternity and hence scientific intelligibility of the species. We saw in our last chapter that the form and essence of a sensible substance is responsible for the substance's being an intelligible "this." It is not immediately clear, however, why and how the form of an individual sensible substance should also be shared by other substances of the same kind, so as to make possible a science of this kind of substance. If separate form guarantees the eternity of the species, however, it allows there to be a science of substances that considered individually are destructible.

Separate form may thus serve as a solution to the aporias concerning the universality or particularity of principles of intelligibility. The ninth and twelfth aporias show there are good reasons to think that the principle of intelligibility for sensible substances—i.e., in the event, its form—is both a universal and not a universal. 49 Scientific knowledge requires that there be universality, that one thing be predicable univocally of many instances; and the form is the principle of scientific intelligibility. On the other hand, form is also the principle of "thisness" in a substance and is what makes each substance a unity. Form must be a "this" and not merely a "such." 50 As Aristotle writes at various

48 As Kahn (1985b: 189) points out, this solution seems to be suggested by the GC 2.10 passage and its context (cf. also pp. 198-200). The difficulty with this view is that the unmoved mover will act as a final cause of movements in the sublunary world (particularly, reproduction) only through the efficient causality of other entities. Determining whether or not this is a insuperable obstacle to a solution to the problem in these terms would require a lengthy treatment of the nature of final-causal activity. How the final cause acts as a cause is not completely clear even with immanent final causes; see Gotthelf 1976 on some of the issues involved.

49 The universality or particularity of immanent form is one of the central issues in recent scholarship on the central books; for a short list of references see Bostock (1994: 186-7). The aporias are not explicitly about the universality or particularity of form; form is rather part of the solution to the difficulties raised in the aporias.

50 Meta. 3.6.1002b7-12, 7.13.1038b34-1039a2.
points, that of which the οὐσία is one must itself be one: if there were one οὐσία of a whole species, presumably that species would itself be a numerical unity.\(^{51}\)

There is no explicit treatment of this problem in *Meta.* 7–9.\(^{52}\) The problem is explicitly addressed, however, in two other texts that are part of our *Metaphysics.*\(^{53}\) Both treatments are rather brief, and neither gives the appearance of being Aristotle's last word on the subject. Nevertheless, both passages indicate how the causality of the unmoved mover may be necessary for an account of immanent form that gives it all the characteristics it must have to play the causal role it does. The first passage is found in *Meta.* 12.5:

[The principles of substances] are distinct even in the same species [of substance], not distinct in kind [εἴδους] but because they are principles of different individuals, as in the case of your matter and your form and your moving cause, on the one hand, and mine, on the other, although in universal formula they are the same [τὸ καθόλου λόγῳ ταὐτά]. (1071a27-9)\(^{54}\)

The text suggests a solution whereby the principle of intelligibility may be the same in λόγος without being numerically a single principle. A similar view is expressed in *Meta.* 13.10:

Now if, as for example in the case of the elements of speech, nothing prevents the existence of many A’s and B’s even if there is no A-Itself and B-Itself apart from the many A’s and B’s, then in view of this there can be an infinite number of similar syllables. (1087a7-10)

Aristotle believes that this is possible, and so that a multiplicity of things of the same kind can exist without there being some principle that is both numerically one and directly the cause of their intelligibility as these kinds of thing. Likewise, scientific knowledge need not have something that is actually universal as its object, only something that is potentially universal:

\(^{51}\) *Meta.* 3.4.999b20-2, 7.13.1038b14-15, 7.16.1040b16-17.

\(^{52}\) Book 7 does contain texts that would seem to imply one view or the other (e.g., *Meta.* 7.10.1035b34-1036a1 and 7.11.1036a28-9 in favour of the unqualified identification of form and universal; *Meta.* 7.13 passim against), but none of these texts constitutes a solution to the problem.

\(^{53}\) *Meta.* 12.5.1071a24-9 and 13.10, esp. 1087a7-25. Because they are not obviously continuous with the central books, it is possible to raise the question whether these passages are compatible with the doctrine expressed there. For arguments contra see Code 1984: 14-17, Scaltsas 1994: 252-8.

\(^{54}\) Trans. Apostle w/ modifications.
For "knowledge," like "knowing," has two meanings, one exists in potency and the other in actuality. Potentiality, like matter, being universal and indefinite, is concerned with the universal and indefinite; but actuality, being definite and a this, is concerned with some definite thing and some this. (1087a15-18)

There need not be something that is actually universal as the object of scientific knowledge, only something the knowledge of which is potentially the knowledge of other things of that kind.

It is clear that, as something separate in λόγος from individual particulars, immanent form is the sort of thing the knowledge of which could be potentially the knowledge of a whole species. It is, however, unclear from these texts both why there should be a multiplicity of things of the same kind and how scientific knowledge of one individual can be potentially eternal and necessary universal knowledge of a whole species. In order to be truly scientific knowledge, knowledge must be necessary and eternal, and it is difficult to see how there can be knowledge that is necessary and eternal unless there is some necessary and eternal object of knowledge. If one is to avoid Platonism, it is necessary to explain how there can be an eternal object of knowledge that is not something itself numerically one.

It is clear from Meta. 12.3 that Aristotle believes he can explain generation without appeal to Platonic Forms:

Moving causes exist prior to what they generate, but a cause in the sense of λόγος exists at the same time as that of which it is a cause. For when a man is healthy, it is at that time also that health exists; and the shape of the bronze sphere exists at the same time as the bronze sphere. . . . It is evident, then, at least because of all this, that there is no necessity for the Ideas to exist; for it is a man that begets a man, an individual that begets an individual, and similarly in the case of the arts, for the art of medicine is the λόγος of health.

The form is passed on from the organism to its offspring through reproduction, from the craftsman to his product through τέχνη. There must be some form that can be passed on from one individual to another while retaining the same intelligibility, but the form need

55 On the requirement that scientific knowledge and its object be eternal, see esp. Apo. 1.8 and Meta. 7.15.1039b20-1040a5.
56 Meta. 12.3.1070a21-30; cf. 7.8.1033b26-1034a5.
not be something numerically one and unqualifiedly separate from the things whose forms it is.\textsuperscript{57}

If there is some cause that guarantees that reproduction will continue to occur eternally, then the form passed on through reproduction will serve as the eternal intelligible object that makes for the possibility of scientific knowledge. Knowledge of one particular is potentially knowledge of the species, because the form that makes the particular the thing it is eternally has been passed on from and will be passed on to all other members of the species.\textsuperscript{58} The form is eternal in the same sense as it is the same in all the particulars to which it belongs: our \textit{DA} and \textit{GA} passages indicate that the form is eternal in \textit{εἴδος}, our \textit{Meta}. 12.5 passage that it is the same in \textit{λόγος}.\textsuperscript{59} If there is one principle, immanent form, that \textit{can} be passed on with the same intelligible content eternally through reproduction, and another principle that guarantees that it \textit{will} be passed on in this way, then the problem of universals can be solved without introducing principles that are themselves separate universals.

It is also in this way that the ninth aporia may find a solution. The aporia asked whether the principles were one in kind or also one in number. The answer implied by our discussion here is that there must ultimately be a principle that is one in number to account for a multiplicity of things that are one in kind, but it need not be the same principle that gives each individual its intelligibility. A similar division is helpful for solving the tenth aporia: an immanent principle that is eternal in \textit{εἴδος} but not in number, combined with an unqualifiedly eternal cause of continuous generation, allows individual sensible substances to be destructible while safeguarding their eternity as objects of scientific knowledge. The moral of Aristotle’s \textit{Metaphysics} is that a more complex account of the principles of being and intelligibility is needed than Plato’s intuitively appealing but metaphysically problematic theory of Forms.

\textsuperscript{57} The crucial point here is “while retaining the same intelligibility”: as Lennox (1985) points out, this is the principal objection to Balme’s anti-essentialist interpretation (1980) of Aristotle’s biology.
\textsuperscript{58} This solution does not, however, directly explain why there are simultaneously many particulars belonging to the same species.
IV

If the discussion up to this point in this chapter and the last one is correct, Aristotle's approach to the science of being is to posit the unmoved entities that are directly objects of first philosophy as primary being and the causes of the being and substantiality of entities that are material and moveable. As Aristotle's answer to the eleventh aporia suggests, being (and unity) are to be understood and causally explained in terms of something more known: being is substance, and substance is form, essence, and actuality. The explanation of the being of the sensible world is thus the explanation of the fact that the sensible world possesses derivatively a nature found in the first instance in form, essence, and actuality as it is found when unqualifiedly separate from matter and potency. Thus the by-now familiar characterization of the explananda of a science of being: the presence of entities that are persisting intelligible "theses," separate and independent from other entities and scientifically intelligible as members of an eternal kind.

Conspicuously absent from this characterization of being is any conception of real existence over and above these characteristics. The separate entity that is wholly actual and in need of no further actualization is primary τί ἐν ἔνα. Conversely, the principle that is seen as introducing potency and hence as an impediment to unqualified actuality is matter. The explanandum of metaphysics is not existence conceived as the contingent actuality of some essence, but rather being conceived as derivative sharing in the characteristics that belong in the first instance to separate form and actuality. Our treatment thus tends to support Owens's claim that in the *Metaphysics* Aristotle is "not concerned with existence in the sense of something *contingently* pertaining to the notion of a thing."\(^{60}\) In the *Metaphysics* Aristotle is not concerned to identify a cause that would explain why some particular things are existing at one time and other things at different times. The beingness of an entity lies rather in its belonging to an eternal and scientifically intelligible species, and the principles of its being are the principles of this rather than of its contingent existence at any given time.

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\(^{60}\) Owens 1978: 291.
Thus while Aristotle’s *Metaphysics* undertakes an explanation of the being of things, it is probably misleading to describe it as a metaphysics of creation. First, although form (separate and immanent) is responsible for certain truths about the sensible world, neither principle is responsible specifically for the fact that this particular entity has come to be and is at this particular time. The contingent existence of any particular sensible entity is accidental to the causality of these principles. Secondly, for Aristotle matter is a principle of motion that is independent of form. Although the form of an entity is responsible for the matter’s taking on some intelligibility and thus being some entity, the form is not responsible for the fact that there is such a thing as matter in the first place. Matter is not dependent on some principle of being for its existence just as *matter*. Even if matter is found only in composites that have taken on a form—even if matter can exist only in some form—it nevertheless remains a principle distinct from form. In other words, there is something in the Aristotelian cosmos that is not dependent on Aristotle’s principle of being, because in the strict Aristotelian sense of being it does not have being.⁶¹

V

Our account of the role of separate form as the nature of being and a principle of being has necessarily been brief, partly due to limitations of space and party due to the absence of relevant texts. Aristotle himself provides at most a sketch of the role of

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⁶¹ Cf. Gilson 1952: 156: "... in its own way, matter is a first cause in the metaphysics of Aristotle. ... Now, if it is so, you cannot say that metaphysics is both the science of true being and the science of all beings through their causes, for there is at least one cause, that is, matter, which does not truly deserve the title of being. In short, because the God of Aristotle is one of the causes and one of the principles of all things, but not the cause nor the principle of all things, there remains in the Aristotelian domain of being[,] something which the God of Aristotle does not account for, which is matter, and for this reason the metaphysics of Aristotle cannot be reduced to unqualified unity.”

While agreeing that matter must for Aristotle remain an independent principle, I do not think this has the implications that Gilson thinks it does, at least not according to Aristotle’s own conception of being and the science that studies it. For Aristotle, the principles studied in metaphysics should not be the cause of all things that are true about all phenomena—this would be a flagrant violation of the methodology of the *Analytics*. The principles studied in metaphysics are not just simply the principles of all things but rather the principles of a nature that is found πρὸς ἐν all things, i.e., being and substantiality. Taken in itself, matter is neither a being nor a substance; because it has none of the characteristics associated with being and substantiality. There is no reason why an Aristotelian science of being should study the being of matter, since Aristotelian matter does not in itself have being in the Aristotelian sense of being. Matter has being only in a sensible composite, where it is caused to be an intelligible “this” by its form.
separate form in a science of being: to develop this sketch fully and to assess its adequacy is a greater task than can be attempted here. Nevertheless, this chapter and the previous one provide the materials for a conspectus of Aristotle's account of the nature and principles of being.

We have two sources for Aristotle's characterization of being and substantiality. On the one hand, *Meta.* 6.1 and *Meta.* 12.6-10 together suggest that being in its primary sense is god: beingness is to be understood in terms of eternity, immobility, unqualified separation, νοῦς, and actuality. On the other hand, *Meta.* 7 develops an account of being and substantiality in terms of thisness, separation, substrateness, and identity with essence. *Meta.* 7.15 adds eternity and *Meta.* 8 actuality to this list. Aristotle never explicitly indicates how these characteristics are to be drawn together. Nevertheless it is possible to see how the imply each other. We saw in chapter 8 that thisness, separation, and whatness mutually imply each other; furthermore, intelligibility as something implies intelligibility as something persistent. *Scientific* intelligibility, moreover, implies necessity and thus eternity. Intelligibility, eternity, and immutability all imply separation from matter, and so separation from any potency-introducing principle. These characteristics belong unqualifiedly to god, in various derivative senses to sensible substance, its form, and the genera and species that are predicatable of it by virtue of its form. A complete explanation of the presence of these phenomena in sensible substances will require both immanent and separate form as principles.
Conclusion

In the foregoing we have attempted to show that the inquiry carried out in Aristotle’s *Metaphysics* should be conceived as a science modeled broadly after the account of scientific explanation developed in the *Posterior Analytics*. We shall review the influences of the *Posterior Analytics* on the *Metaphysics*, and recall the salient departures from the *APo.* model of science. We shall also point to areas where Aristotle’s account seems incomplete and consider some possible objections to the interpretation we have proposed.

I

We argued in chapter 3 that what crucially links all the objects of investigation in metaphysics is their ἄναμμα relation to a nature, which is initially conceived simply as “being.” Metaphysics is thus the science of being qua being, which is to say that it is the science of all things insofar as they are beings. If there is a nature of being, we may expect that there will be demonstrable attributes that are καθ’ ἄναμμα and ἄναμμα to that nature. We argued in chapter 5 that *Meta.* 4.2 introduces an investigation that appears to conform substantially to the account of the demonstration of per se attributes developed in *APo.* 1.1-10. The *APo.* also introduces an investigation into the τί ἐστι and causes of substance, and identifies the τί ἐστι of an entity with its causes. In chapters 6-9 we argued that the *Metaphysics* refines the inquiry into the causes of substances into an inquiry into the nature of being and the causes that belong to it καθ’ ἄναμμα and ἄναμμα. Finally, the axioms that are assigned to dialectic in the *APo.* are shown to be ἄναμμα to being and hence objects of the science of being. Chapter 4 examined the texts that make this assignment, and offered a general evaluation of the uses and limitations of dialectic in science generally and metaphysics in particular.
It is possible to identify several significant differences between the *Posterior Analytics* and the *Metaphysics*. The first is one of emphasis. The *APO* gives the impression that scientific knowledge is to be identified with demonstrative knowledge, and implies that scientific explanation is always a matter of demonstrating attributes to belong to subjects. The existence and definition of the subject itself must be assumed by any demonstration of its attributes. By contrast, while the *Meta* recognizes a place for the investigation of the attributes of being, Aristotle's primary concern seems to be with the principles of being and substance: the investigation into ωσία that begins as early as *Meta*. 1.3 is an investigation into ωσία as a principle and cause of the being of substances.

A second important departure is the abandonment of generic univocity as the basis for scientific universality in metaphysics. This departure is obvious as early as *Meta*. 4.2: the first task of the science of being proper is the προς ἔν reduction of being to substance. We have argued that Aristotle’s abandonment of the generic account of the principles of substance supports a further reduction of substantiality to primary ωσία. Although being remains a specific nature, this nature is not to be predicated univocally of all beings. There is no being-itself that is the cause of being in all beings. Rather, the being of sensible substances is to be understood in terms of the characteristics of a specific entity, separate form.

A final difference concerns the introduction of a new explanatory structure for a task for which the *APO* methodology of demonstration proves inadequate. The explanatory structure presented in *Meta*. 7.17 has certain affinities to demonstration, but differs from it both in its conception of the subject and of what must be “predicated” of the subject as its cause. No univocal genus can be the cause of the intelligibility of the things that belong to it, and a very different account of the principles than that implied in the *APO* is required. Aristotle is not very explicit on the methodology appropriate for grasping the common axioms, but the inclusion of the axioms in the science of being

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1 Aristotle's extremely brief foray into substantial explanation in *APO*. 2.2 seems to ignore this requirement.
indicates that his conception of ἐπιστήμη in the *Metaphysics* is wide enough to include principles that cannot be known through ἀπόδειξις.

II

It is possible to get a sense of strongest and weakest links in Aristotle’s attempt to develop a science of being by considering the relative bulk of his treatment of various issues. Not surprisingly, the issues that receive the most extended treatments are generally those whose treatment is most satisfactory. As we have already suggested, Aristotle’s principal interest throughout the *Metaphysics* appears to be with the nature and principles of being and substance. The *Metaphysics* provides an extensive summary and dialectical examination of his predecessors’ views on these issues, followed by a strong argument for identifying being with form and essence and a clear account of form as an immanent principle and cause of being. (We pointed to the inadequacy of Aristotle’s account of the role of separate form in this investigation in our last chapter.) Aristotle is also careful to show how each of the tasks he assigns to the science of being earns its place there by the ἃνατημόν relation of its objects to being and substance, even if it is not always clear why the fact that something belongs ἃνατημόν to being additionally entails that it belongs ἃνατημόν to substance.² The extent of Aristotle’s dialectical argumentation surrounding the axioms is such as to create the (mistaken, we argued) impression that dialectic is the methodology for establishing the common axioms.

Apart from the absence of an adequate treatment of the role of separate form in the science of being, there are several serious lacunae in Aristotle’s account of the science of being. There is no extended treatment of the nature of πρὸς ἐνequivocality and why it should generate a universal science of being. Aristotle’s treatments of πρὸς ἐνequivocality suggest an account whereby the secondary instances are defined in terms of the primary instance and are hence definitionally posterior to it, but it is not clear whether everything defined in terms of some other entity should be a derivative instance of that entity, or whether something more is required for a πρὸς ἐνequivocal. Nor is it clear from anything

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² Thus it is easy to see why the common axioms belong ἃνατημόν to being, but more difficult to see why they should belong ἃνατημόν to substance more so than to other beings: Meta. 4.3.1005a21-b2.
Aristotle writes in the *Metaphysics* in what sense nonsubstantial beings are objects of metaphysics. Clearly, they must be objects of metaphysics in some sense if it is right to call the science of substance a science of being.

It would be helpful for Aristotle to have been more explicit about some questions of methodology. We inferred from Aristotle’s exposition of the study of the per se attributes of being that its methodology should be demonstrative, but Aristotle does not indicate this explicitly. It can be inferred from Aristotle’s references to ἀπόδειξις throughout the *Metaphysics* that he continues to regard the demonstration as the proof-structure appropriate for the explanation of per se attributes, but it is not clear to what extent Aristotle wishes to retain the technical formulations of demonstration and the syllogism developed in the two *Analytics*. Although (we have argued) there are proofs in *Meta. 10* that seem to be attempting to follow the methodology developed in the *Analytics*, there is no argument presented in the *Metaphysics* in such a way as to strictly conform to the structure required by the *Analytics*. Relatedly, one would like to see more on the role of induction and νοῦς, especially as they apply to investigation into the axioms and the principles of substance. More generally, *Meta. 4.2* leads one to expect a more extended treatment of the topics introduced there than that found in *Meta. 10*.

Having said this, it remains the case that the most serious obstacle to giving a coherent account of the *Metaphysics* as a whole is Aristotle’s almost complete silence on the role of separate form. We can infer from *Meta. 6.1* that separate form should play an important role in a science of being, but the hypothesis we presented in our seventh chapter to explain this role finds no explicit verification anywhere in the corpus. An explicit treatment of separate form in the science of being would not only make clear the role of *Meta. 7–8* in Aristotle’s project as a whole, but would also presumably make possible a more integrated presentation of the tasks of the science than the somewhat divergent developments of *Meta. 4.1* found on the one hand in *Meta. 4.2–3* and on the other hand in *Meta. 6.1*.

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3 For a list of occurrences see chapter 5, note 22 above.

4 The best evidence for its correctness, if our inclusion of immanent form among the objects of first philosophy is correct, is Aristotle’s use of immanent form as a principle of being in *Meta. 7.17*. One would expect something analogous to *Meta. 7.17* to elucidate the causal role of separate form.
In the foregoing we have attempted both to elucidate the methodology Aristotle intended for the science of being and to see that methodology at work in Aristotle’s metaphysical practice. We have attempted the latter partly because it seems necessary for the credibility of our claims about Aristotle’s methodology, and partly because his substantive views particularly on the nature and principles of being are of philosophical interest. The latter task in particular required that we defend some interpretations that many will find controversial. We shall conclude by briefly considering what role some of our more controversial interpretations play in our interpretation of Aristotle’s project as a whole.

Two of our principal theses, that Aristotle’s philosophical methodology is not primarily dialectical and that there is a strongly causal aspect to Aristotle’s procedure in the central books, have already received credible defenses in the recent literature. Two developments of these theses will be found more controversial. The first is that Aristotle intends a precisely demonstrative methodology for the treatment of the per se attributes of being in Meta. 4.2. This position is not novel—as we pointed out in chapter 5, it is found in all the Greek commentators—but it is nevertheless problematic given the very stringent criteria for syllogisms and demonstrations in the two Analytics and Aristotle’s apparent unconcern for these criteria in Meta. 10. However, even if these considerations lead one to reject the terminology of “demonstration” to describe Aristotle’s methodology in treating the per se attributes of being, it is nevertheless the case that Aristotle is introducing a nondialectical treatment of these issues that resembles demonstration in certain crucial respects. In particular, Aristotle emphasizes the priority of substance to its attributes, and bases his proofs in Meta. 10 on the definitions of the attributes and their subject in the manner that one would expect from his treatment of these issues in the Analytics. We have already alluded to the fact that Aristotle continues to use “demonstration” to refer to the proof-structure for the explanation of per se attributes. If there is a shift from the APo. to

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the Meta., it would seem to lie not in the abandonment of demonstration but in a wider conception of what proofs can be demonstrations.⁶

The second point that will be controversial is the identification of immanent form as an object of first philosophy alongside separate form. We argued that, being identical with the essence and primary ὀὐσία of a sensible substance, immanent form contains something of the nature of being and is a principle of being. This allows part of a solution to the problem of the identification of the science of being with first philosophy. Aristotle clearly regards immanent form as a principle of being; therefore, if immanent form is an object of first philosophy then there is a clear case of an object of first philosophy being used as the primary ὀὐσία and αἰτίων τοῦ ἔννοια for sensible substances. The texts in Phys. 2.7 and 1.9 that we examined in chapter 7 strongly suggest that immanent form is an object of first philosophy, a fact that has often been overlooked by discussions of the physics–first philosophy relation.⁷ It must be admitted, however, that while no text explicitly rules out our interpretation, texts such as Meta. 6.1 and Meta. 12 seem to be assuming that god is the only object of first philosophy.

If one denies that immanent form is an object of first philosophy, it becomes difficult to understand how the latter part of Meta. 6.1 (1025b18 ff.) fits into Aristotle’s project. The first section of Meta. 6.1 (1025b3-18) points to immanent form as a principle of being: immanent form seems to be a necessary part of any explanation of the τι ἐστὶ and thus the εἰ ἔστι of substances. Given Aristotle’s approach in the aporias, Meta. 6.1, and Meta. 7–8, it is difficult to see how an inquiry into the principles of being could fail to be at least in part an inquiry into the causes of intelligibility and τι ἔστι. The role of immanent form would likely be much clearer if we had an account of separate form as a principle of being, which would presumably explain their respective roles as primary ὀὐσία and causes and would give a more explicit explanation of Aristotle’s grounds for the identification of the science of being and first philosophy. Given the texts available to us, all that can be said definitely is that the hypothesis we posited to explain the

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⁶ Cf. Meta. 6.1.1025b13: ἀποδείκνυσιν ἢ ἀναγκαστέρον ἢ μαλακότερον. (But one would expect the science of being, as one of the most accurate sciences, to demonstrate ἀναγκαστέρον.)

⁷ The Phys. 2.2 text we discussed arguably makes the most sense under this interpretation but does not require it.
identification of the science of being with first philosophy seems to require that immanent form be included among the objects of first philosophy, and that this inclusion is supported by several texts where the relationship between physics and first philosophy is defined.

A last conclusion that may seem controversial is that Aristotle’s *Metaphysics* is incomplete. In *The Doctrine of Being*, Owens argued for this position on the grounds that the *Metaphysics* “lacks an account of the derivation of Being from the separate Entities to all other things.” We have argued that Aristotle does present an extended account of the derivation of being from primary όὐσία as it is found in immanent form to the being of the sensible composite. Nevertheless, we do follow Owens in maintaining both that Aristotle’s project requires an account of separate form as the nature of being and a cause of being, and that the *Metaphysics* lacks such an account. The most likely explanation of this absence seems to be chronological. The most informative hints of Aristotle’s projected account are found in *GA* 2.1 and *DA* 2.4, works that by most accounts date from the very end of Aristotle’s career. Presumably, any attempt to give an account of separate form as a cause of being would build on the doctrines in these passages. In our last chapter we raised doubts about the very possibility of such an account: at the very least, the task would be a difficult one. In the circumstances, Aristotle’s failure to complete the project envisioned in the *Metaphysics* is hardly surprising.

**IV**

Few of Aristotle’s works devote as much space to methodological considerations as the *Metaphysics*. It should not be surprising, then, that a careful examination of these passages and their relations to the *Analytics* should shed light on Aristotle’s project in the *Metaphysics* as a whole. We have argued, in particular, that careful examination of Aristotle’s methodological texts rules out two common views about the character of the *Metaphysics*. The first, best expressed in the work of Irwin and Leszl, is that metaphysics is a second-order investigation, to be contrasted with first order causal and demonstrative sciences. The second, which is frequently found alongside the first, is that the central

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8 Owens 1978:xii.
books constitute an ontology of sensible substance essentially similar in its basic purposes to the ontologies of contemporary analytic philosophy. Like the special sciences, the science of being is causal investigation, demonstrative where the attributes of being are concerned and using a structure analogous to that of demonstration for the explanation of the being of sensible substances. An understanding of Aristotle's project and doctrines in the *Metaphysics* is crucially dependent on appreciating its dependence on the *Posterior Analytics*.
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