Iβ2: The "methodological" aporiai and the program of Metaphysics Γ and following

Iβ2a: "Methodological" and "substantive" aporiai

Metaphysics A has told us some things about how to search for wisdom. Beginning from some manifest effect and examining its causes, we must search for the ἀρχαί, for causes that are genuinely first; and we can expect that these first causes should be eternal, that they should be distinct from and prior to bodies (though this was only assumed and not properly argued for), and that they should include the good. But A says too little about the ἀρχαί to show us where to begin, and how to proceed, in looking for them. B, by contrast, sets a definite agenda for the rest of Metaphysics, by asking successive questions about the ἀρχαί, and raising difficulties against each possible answer:[1] any project of searching for the ἀρχαί must confront these difficulties, difficulties which have in fact defeated the projects of our predecessors. To give a particular answer to each question, and to resolve the difficulties raised against that answer, is to choose a particular path toward the ἀρχαί.

I am making two claims about the unity of the Metaphysics. First, the questions of B are the questions that the subsequent books (including ZHΘ and Λ) are designed to answer.[2] Second, B itself is not simply a grab-bag of problems (and the Metaphysics is not simply a collection of essays on different problems, to which B would provide as it were the chapter-headings).[3] Rather, B is a collection of questions and difficulties specifically about the ἀρχαί--asking what kind of things the ἀρχαί are and how they are causes of other things, and therefore also asking what discipline will lead to knowledge of the ἀρχαί. The questions are designed to bring out the choices we must make in choosing a path to the ἀρχαί; the difficulties are designed to bring out the reasons why the disciplines of Aristotle's predecessors--physics, dialectic, and mathematics--cannot succeed as means to wisdom, and thus to motivate Aristotle's own positive program as the only satisfactory solution. My claims here about the Metaphysics are programmatic, and can be proved or disproved only in the course of the interpretation both of B and of subsequent books. They contrast in particular with the view, put most explicitly by Jaeger but fairly widely held, that B describes only an early stage of Aristotle's metaphysical program, which he had left behind by the time of writing ZHΘ.[4] Jaeger agrees that B, and even more the even earlier parallel K1-2, are raising questions about ἀρχαί, but he thinks that Aristotle's mature interest is in the question of οὐσία rather than in the question of the ἀρχαί; by contrast, I think the metaphysical project continues to be guided by B's questions about the ἀρχαί. Readers often have the sense that B's questions somehow emerge from the context of the Academy, and this is not wrong. But this does not mean either that Aristotle is just reporting internal disputes from the Academy, or

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[1] note terminology of questions vs. difficulties, two aspects of an aporia. note here if not before some bibliography on B, chiefly Madigan, Aubenque (the book and the essay in Aristote et les problèmes de méthode), Suzanne Mansion (the essay in Autour d'Aristote), also the Symposium Aristotelicum volume if available; various 19th-century scholars use B to try to determine the authentic core of the Metaphysics (meaning not just what books are by Aristotle, but what books are intended as parts of his treatise on first philosophy and in what order): cite in particular Brandis and Natorp

[2] refer back to previous section for disagreements with Jaeger (and Ross) on the one hand, Owens on the other. this does not, of course, mean that the subsequent books contain first an answer to #1, then, when that is finished, an answer to #2, and so on in order through #15

[3] this latter is the view suggested by Frede-Patzig in their introduction to Z

[4] cross-reference earlier mention in Iβ1

that his guiding question is whether the Academics are right to posit non-physical ἀρχαί. Rather, he is asking questions which the different paths to the ἀρχαί, whether Academic or physical, will answer in different ways, and raising difficulties which all these paths must encounter. He finds the different Academic paths most promising, most immediately attractive to himself and his primary audience; for that reason he gives them closer scrutiny, considering different Academic options and apparently sometimes using arguments that different Academics had directed against each other, but he never rules out physical paths to the ἀρχαί simply because they are physical, and ultimately he thinks that neither the Academic nor the physical paths can overcome the difficulties.[5]

It is not immediately obvious that all the aporiai of B are about the ἀρχαί, and the aporiai seem to divide into groups with rather different concerns. Most strikingly, aporiai #1-#4 are framed in very similar terms, and stand out from the rest of the aporiai (the questions are: whether there is a single science of all the kinds of causes, and, if not, which of these different sciences is wisdom; whether this science considers only the ἀρχαί of οὐσία, or also the ἀρχαί of demonstration; whether it is a single science of all kinds of οὐσίαι, and, if not, which kind of οὐσίαι it is about; and whether it is only about οὐσίαι or also about their attributes).[6] Since these aporiai ask about the science of wisdom itself (and specifically about the unity of this science), they are often described as "methodological" aporiai, by contrast with the "substantive" aporiai #5-#15, which do not ask about wisdom, but ask particular questions that wisdom will have to answer.[7] This contrast has been questioned, and I will question it myself, but it gives a useful label to begin with. In the present section, after some general comments about the series of aporiai, I will concentrate on the "methodological" aporiai, which have caused the greatest difficulty for understanding the overall program of B; I will examine the "substantive" aporiai in detail in the following section Iβ3.

Of the "substantive" aporiai, six (#6, #7, #9, #10, #14, #15) explicitly raise questions about the ἀρχαί (in #14 "τὰ στοιχεῖα", in #6 "στοιχεῖα καὶ ἀρχαί", elsewhere just "ἀρχαί"); the other five raise questions about whether there are οὐσίαι other than the sensible οὐσίαι (#5) or other than individuals (#8), or whether things that Aristotle's predecessors have claimed to be οὐσίαι really are οὐσίαι or really exist separately (Platonic forms or genera, #5, #8, and #13; being and unity, #11; mathematicals, #12). But these five aporiai about οὐσίαι are closely integrated into the main argument of the "substantive" aporiai, developing difficulties about the ἀρχαί:

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[5]note on ways of enumerating the aporiai; I follow the order of B2-6. d give tabular presentation, and note discrepancies (i) between B2-6 and B1 (which Ross sometimes follows); (ii) with K; (iii) with other ways of dividing it up (note the issue about "#13," vs. the Symposium Aristotelicum volume; Alexander/Syrianus divide into 17; Natorp divides differently). I will generally cite the aporiai by aporia-number, followed by Bekker pages if appropriate, disregarding the chapter division of B (except that I will say "B1" for the B1 versions of the aporiai)

[6]there is a problem in the interpretation of B#3-4: when Aristotle speaks of different kinds of οὐσίαι, and contrasts οὐσίαι with their συμβεβηκότα, are the kinds of οὐσίαι the different genera of substances, and their συμβεβηκότα the nine categories of accidents, or are the different kinds of οὐσίαι the ten genera (categories) of beings, and their their συμβεβηκότα universal attributes of being such as unity? I will return to this question in Iβ2b below. for now, in support of the second reading or at least against the first, note that the B1 version of B#4 asks "whether the study [θεωρία] is only about οὐσίαι or also about the per se συμβεβηκότα of οὐσίαι" (995b19-20): the nine categories of accidents cannot be described as per se συμβεβηκότα of substances, and συμβεβηκός must have not the categorial sense "accident" but the sense of the per se attributes of the subject-matter of some science (which is not to say that it yet has the fully determinate sense of "transcendental attributes of being" such as unity). on the other hand, note the presentation in B1 in connection with asking whether there are only sensible oujsivai or also others: here "different [kinds of] οὐσίαι" clearly doesn't mean the different categories

[7]so e.g. Ross, Introduction, p.xvi

Aristotle's intention in each of these five aporiai is to challenge a claim of the form "X is an ἀρχή" by arguing that X is not an οὐσία, or does not exist χωρίς or καθ᾽ αὑτό, and therefore cannot be prior to everything else. Thus consider #11, "whether being and the one are οὐσίαι of things-that-are, and whether each of these is not, being something else, one or being [respectively], or whether we must ask what being and the one are, there being some other underlying nature [of which these are predicated]" (1001a5-8).[8] Aristotle presents this as a dispute between Plato-and-the-Pythagoreans, who think that being and unity are οὐσίαι, and the physicists, who think that being and unity are always predicates of something else (1001a9-19).[9] If it can be shown, against Plato and the Pythagoreans, that being and unity are not οὐσίαι but predicates of some other underlying nature, then this will prove that they are not ἀρχαί: "if the ἀρχή of all things cannot have anything prior to it, it would be impossible for the ἀρχή, being something else, to be an ἀρχή: for instance, if someone said that white, not quâ something else but quâ white, is an ἀρχή, but that nonetheless it is καθ᾽ ὑποκειμένου, and, being something else, is white" (N1 1087a31-36), since in this case its substratum would be prior to it, and it would thus not be the first of all things.[10] Thus the negative arguments of B#11, even without using the word ἀρχή, serve as arguments against the claim that unity and being are ἀρχαί. The parallel aporia in Metaphysics K makes Aristotle's intention explicit: "if someone posits the ἀρχαί that seem most of all to be unmoved, [namely] being and the one, then, first, if these do not signify a this and an οὐσία, how will they be separate and καθ᾽ αὑτάς? But we expect the first and eternal ἀρχαί to be of this kind [sc. separate and καθ᾽ αὑτάς]" (1060a36-b3).

I will return to B#11 in Iβ4 below. My point for now is that #11, and the aporiai asking whether Forms or mathematicals are substances or have separate existence (#5, #8, #12, #13), are parts of a series of critical questions about things that earlier philosophers had posited as ἀρχαί. All these questions are, at the same time, questions about disciplines that earlier philosophers had put forward as ways to wisdom. If the Forms exist and are prior to bodies, then either the Forms will all themselves be ἀρχαί, or the first ἀρχαί of the Forms (where these are, perhaps, maximally universal Forms such as being and unity) will be the ἀρχαί of all things: if so, then the study of dialectic should lead to knowledge περὶ ἀρχῶν, and so to wisdom. If, as Speusippus thought, mathematicals, and specifically mathematical numbers (with their ἀρχαί, the one and plurality) are the first of all things, then arithmetic should be wisdom. On the other hand, "if there is no other οὐσία beyond the ones constituted by nature, then physics would be the first science" (Metaphysics E1 1026a27-29), that is, physics would be wisdom. So when Aristotle asks in B#5, opening the series of "substantive" aporiai, whether there are only the sensible substances, or also mathematicals or Forms, he is also asking whether the present inquiry, in searching for wisdom, should pursue physics or mathematics or dialectic; the K parallel makes this explicit by asking, not what substances there are, but "whether the science we are now

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[8] for problems about the syntax and interpretation of this sentence, see the detailed treatment of this aporia in Iβ4 below (οὐσία τῶν ὄντων is not partitive). Aristotle in #11 freely interchanges "X is an οὐσία", "X is the οὐσία of something", "the οὐσία of X is to be X", "X is not predicated of some other underlying nature", "X is κεχωρισμένον", "there is an αὐτό X", and, in the parallel in Metaphysics K, "'X' signifies τόδε τι καὶ οὐσίαν" and "X exists χωριστὸν καὶ καθ᾽ αὑτό" (1060a37-b2). for discussion of the meaning of these phrases, and of Aristotle's justification for interchanging them or inferring from one to the others, see Iβ4

[9] this refers back to the discussion in A5-6 of the Pythagorean and Platonic claim that unity and its contrary are ἀρχαί: "[Plato] said, similarly to the Pythagoreans, that the one is an οὐσία, and that it is not, being something else [i.e. having some other underlying nature], [also] called one" (987b22-24; for the Pythagoreans see 987a14-19)

[10] cite parallel from the first paragraph of Physics III,5, on the conditions for τὸ ἄπειρον to be a principle; discussed in detail Iβ4

seeking is about the sensible substances, or not, but about some others: if others, it would be either about the Forms or about the mathematicals" (1059a39-b2).[11] Aristotle's own solution will reject all three options, but in B he merely develops the difficulties with his predecessors' solutions, rather than announcing his own. In the series of aporiai beginning with #6, he asks whether the true ἀρχαί of things are the kind the physicists were looking for, the material constituents, or rather the kind that Plato proposed (the genera, as #6 says, and higher universals going up to being and unity; and the mathematical boundaries of bodies discussed in #12, leading up to the point and the unit as ἀρχαί). Aristotle argues that the ἀρχαί sought by the physicists are insufficient, and expresses sympathy with the Platonic search for some higher ἀρχή, but he also presents a series of (in his opinion unanswerable) dilemmas confronting the Platonic position. Once again, the K parallel makes it more explicit that these questions, in asking about the ἀρχαί, are asking which course we should take in seeking wisdom: thus the K version of B#6 asks, not whether the ἀρχαί are of one kind or the other, but rather whether "the science we are seeking" is about constituents or about universals (1059b21-25).[12]

The "substantive" aporiai are thus as much methodological as substantive. They are asking, not just particular questions about the ἀρχαί that the wise man should be able to answer, but what kind of thing, and what kind of cause, the ἀρχαί will be, and, therefore, in what direction we should search for the ἀρχαί, and what discipline will be wisdom. And, looking back to aporiai #1-#4, we can see that these "methodological" aporiai are methodological in the same way that the "substantive" aporiai are: they are not retrospectively methodological, asking second-order questions about a science already constituted, but prospectively methodological, asking which causal path the inquiry should pursue in order to find the ἀρχαί. Aporia #1 is asking whether, in seeking wisdom, we should pursue the efficient, final, formal or material causes of things, just as #6 will ask whether we should pursue their material constituents or the universals they fall under.[13] Somewhat less obviously, #3 ("is there one science or many sciences of all the [kinds of] οὐσίαι? if there is not just one, what kind of οὐσία should we say that this science is about?", B2 997a15-17) and #4 ("is the θεωρία only of οὐσίαι or also of their attributes [συμβεβηκότα]?", 997a25-6) are also asking which causal path we should pursue. This becomes clear from the way Aristotle states the "methodological" aporiai in B1: here #2 asks "does it belong to the science to consider only the ἀρχαί of οὐσία or also the ἀρχαί from which

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[11]cp. discussion in Iα3 above. note that K1-2 is, on the accounts of Jaeger and Madigan, earlier than B and more concerned with ἀρχαί, so that we might expect an aporia about the science in B to become an aporia about the ἀρχαί in K (as in B#11, cited above, an aporia about substance in B becomes an aporia about the ἀρχαί in K): here we find the reverse. so K's testimony to the equivalence of methodological and substantive formulations of the aporia is not undermined by K's bias toward archaeological formulations: it is strengthened by going contrary to any such bias. {note however that B#5 is not stated in terms of ἀρχαί but of οὐσίαι, so Jaeger and Madigan might not find it so strange that K rewrites this; Jaeger says that the mature Aristotle replaced the middle-period question about ἀρχαί with a question about οὐσία; however B#6, which I discuss just below, is indeed about ἀρχαί, and K rewrites this too. note however Aubenque's malicious claim that K is looking around for an object for the otherwise unemployed science of wisdom; see the appendix on K }

[12]here once again K reformulates an aporia about the ἀρχαί as an aporia about the science, contrary to expectations, and so once again its testimony to the equivalence of methodological and substantive formulations is strengthened

[13]Objection: on this reading, wouldn't #6 just be duplicating #1, or rather the part of #1 on the formal and material causes? No: #6 is concerned with the search for ἀρχαί as στοιχεῖα: part of what this means is that a single manifest thing will have many different στοιχεῖα, each of which will be an ἀρχή, but none of which will be a total material or formal cause of the given thing (as a word is composed of many different letters: for Democritus, atoms of different shapes, for Plato, different genera entering into the definition); by contrast, #1 gives no sign that a thing will have more than one cause of the same type, or that looking for partial causes is useful for getting to the ἀρχαί. for more discussion of #6, see Iβ3 below

everyone [i.e. the practitioners of every science] demonstrates [such as the law of contradiction]?" (995b6-8), and then #3 picks up one half of the antithesis by asking "if it is about οὐσία, then is there one or several [sciences] about all [the kinds of οὐσία], and if several, are they all akin, or should we call some of them wisdoms and some of them something else?" (995b10-13). Aporia #2 is presupposing that wisdom will be about ἀρχαί, and asks whether it will be about ἀρχαί of οὐσία or (also) about the ἀρχαί of demonstration; so when #3 picks up the first half of this antithesis, "if it is about οὐσία", that means "if it considers the ἀρχαί of οὐσία [rather than the ἀρχαί of something else]." Assuming that wisdom does consider ἀρχαί of οὐσία, #3 asks whether it considers ἀρχαί that are ἀρχαί of all οὐσίαι universally, or ἀρχαί only of some particular domain of οὐσίαι, and #4 asks whether these ἀρχαί are ἀρχαί only of οὐσίαι, or also of the attributes of οὐσίαι. So aporiai #2-#4, like #1, are posing practical questions that we must answer in deciding how to pursue wisdom: #1 asks what kind of causes we should seek, #3-#4 ask what effect we should be seeking the causes of (οὐσία in general? some particular kind of οὐσία? the attributes of οὐσία as such, or of some particular kind of οὐσία?), and #2 asks whether we should be looking for causes of effects at all, rather than for principles of demonstrations.

The approach I am suggesting to the "methodological" aporiai #1-#4 is at odds with the approach of most commentators (notably Ross, Owens, Aubenque, Reale), who see these aporiai as primarily questions about the unity of metaphysics, and as challenges to Aristotle's project of an entirely universal science. The first four aporiai all ask "does a single science treat both X and Y?": obviously, the interest is not in sciences in general, but specifically in wisdom, to know whether wisdom is a single science treating both X and Y, or, if not, whether the science of X or the science of Y has a better claim to be wisdom. Most commentators think that Aristotle's conception of wisdom requires an affirmative answer to all these questions, and that the arguments he raises against the possibility of a single science of wisdom treating both X and Y are challenges against the fundamental project of the Metaphysics, difficulties which Aristotle expects his readers to feel and which he must somehow resolve: Aubenque, expressing a common view, says "une réponse positive à chacun de ces problèmes conditionne à chaque fois l'existence même de la sagesse."[14] But this interpretation depends on unjustified assumptions about wisdom, and misses Aristotle's main point in the "methodological" aporiai. At the beginning of B, all we know about wisdom is that it is knowledge about the ἀρχή or the ἀρχαί, where this means simply what is (temporally, or in some more refined sense) first of all things. We do not, for instance, know that wisdom is a science of being quâ being. The historical inquiries of Metaphysics A have given us reason to expect that any ἀρχή will be an efficient, final, formal or material cause of some manifest effect, but they give no reason at all to believe that a single ἀρχή will be simultaneously an efficient, final, formal and material cause, or that the ἀρχαί will include one efficient cause, one final cause, and so on. The bare fact that all these kinds of causes exist does not imply that these kinds of causes are among the ἀρχαί: the only way to be sure how the ἀρχαί are causes is to find the ἀρχαί, and the only way to find the ἀρχαί is to pursue some particular causal path. We may, of course, carry out several different causal investigations, in order to see which path leads to wisdom, or simply in order to acquire other kinds of theoretical knowledge: Aristotle is not trying to stop us from investigating anything, as long as we know which causal question we are asking at any given time. But the result of

[14]Aubenque, p.308. For all commentators except Aubenque, this implies that Aristotle thinks the answer to all of these aporiai is positive (that there is, indeed, a single science meeting the different conditions). Aubenque himself, since he thinks the project of wisdom is impossible, is not committed to this conclusion

successfully carrying out these different investigations will be several different ἐπιστῆμαι, several different habits of knowledge, and Aristotle is asking which of these ἐπιστῆμαι will be the knowledge of the first things, and thus the most intrinsically desirable ἐπιστήμη.

Aristotle does indeed ask whether wisdom can be a single science that treats both X and Y, and sometimes his answer is yes.[15] But he is not asking whether a given science is allowed to treat two different topics--as if he were asking permission, say, to treat two different topics in a single course of lectures. It is a Socratic question whether the ἐπιστήμη of X and the ἐπιστήμη of Y are the same, that is, whether the person who knows X necessarily also knows Y and vice versa (so that, e.g., it is the same person who can write both tragedies and comedies). It is said several times in the Platonic dialogues that the knowledge of good and the knowledge of evil are the same, or in general that the knowledge of contraries is the same: Aristotle cites this as a standard thesis of the dialecticians, and he maintains, more generally, that the science of opposites is the same (whether the opposites are contraries, contradictories, correlatives, or possession and privation).[16] The science of X and the science of Y will also coincide, in a different way, when they are the knowledge of a single cause that causes both X and Y. If it is plausible that wisdom is the science of X (that is, that the science of X is the most desirable knowledge), and also plausible that wisdom is the science of Y, then it is important to know whether these are one science or two. If it turns out that the science of X and the science of Y are the same, then we do not have to pursue two separate investigations and to decide which yields the better kind of knowledge: we will have to carry out a single investigation of X and Y together, though sometimes we can do this simply by investigating X, and get the knowledge of Y as a byproduct (if the science is of X primarily and of Y only derivatively, as when Y is dependent on X, or when Y is the privation of X). Metaphysics Γ1-3 will give "positive" answers to the second, third, and fourth aporiai--that is, there will be a single science, wisdom, that treats all the kinds of beings, treats both beings and their per se attributes, and treats both the principles of substances and the principles of demonstration; by contrast, Aristotle's answer to the first aporia will be negative, that is, wisdom will not be a science of all four kinds of causes, but only a science of final and efficient causes. Aristotle's treatments especially of the third and fourth aporiai in Γ have the effect of laying down a program for the subsequent books of the Metaphysics, namely the investigation of the causes of being (in EZHΘ), and of unity and the other per se attributes of being (in Iota); in addition, the first aporia, which is not resolved in Γ, remains the single most important question for these later books to answer, as they pursue diverging investigations into the material, formal, efficient and final causes of being, with the aim of examining which of these causal paths leads to the desired ἀρχαί and so to wisdom.[17]

Iβ2b: The second through fourth aporiai and their answers in Γ

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[15]note that this kind of question is not restricted to the "methodological" aporiai, but recurs in #6, 998b11-14

[16]references in Plato and Aristotle (Metaphysics M4 1078b25-7 with an implied reference to Plato). in Plato it's in Phaedo 97d1-5, the ἐπιστήμη of the better and of the worse is the same; cp. Charmides 166e7-8 where the ἐπιστήμη of ἐπιστήμη must also be ἐπιστήμη of ἀνεπιστημοσύνη; add from Republic I and the Hippias Minor. the following list of passages for the knowledge of contraries being the same is based on Bonitz' Index (some of these mention this as a standard question, rather than affirming it as a doctrine): Prior Analytics I,1 24a21, I,36 48b5, Topics I,14 105b5-6 and 105b23-4, II,3 110b20, VIII,1 155b29-34 (with the extension to all opposites), 156b11-14, VIII,13 163a1-3 and 163a17-21 (these two adding all opposites), SE 10 171a39, SE 15 174b37, Metaphysics B2 996a20, K3 1061a19, Physics VIII,1 251a30, De Anima III,3 427b5, NE V,1 1129a13, 1129a17 {so far I've checked only the passages from the Topics}

[17]the interpretation here given of the status of the first aporia is controversial, and will be defended in Iβ2c

The presentations of the second through fourth aporiai are so highly compressed, both in the brief listing in B1 and in the slightly fuller exposition in B2, that to grasp their meaning it is often necessary to look at how Aristotle answers them in Γ; so here, far more than with the remaining aporiai, I will present the aporiai and their solutions together. I will start with the third and fourth aporiai, which Aristotle treats together in Γ1-2, and which are particularly important in motivating the course of argument that he will pursue in ΓΔΕΖΗΘΙΛ. To recall, B#3 had asked, in the shorter version in B1, "if [the science we are seeking] is about οὐσία [i.e. if it is about the ἀρχαί of οὐσίαι rather than axioms or ἀρχαί of demonstration], then is there one or several [sciences] about all [the kinds of οὐσία], and if several, are they all akin, or should we call some of them wisdoms and some of them something else" (995b10-13), and B#4 had asked "is the study [θεωρία] is only about οὐσίαι or also about the per se attributes [συμβεβηκότα] of οὐσίαι" (995b19-20); to see what the difficulties are on both sides, we will have to turn to B2. The first chapter of Γ, without as yet solving any difficulties, announces an answer to both questions:

> There is a science that considers [θεωρεῖ] being quâ being and the things that belong to it per se [τὰ τούτῳ ὑπάρχοντα καθ᾽ αὑτό]. This is not the same as any of the "particular" sciences, since none of these investigate being universally quâ being, but rather they cut off some part of it and consider its attribute [συμβεβηκός], as the mathematical sciences do. But since we are seeking the ἀρχαί and the highest causes, it is clear that they must be [causes] of some nature per se. So if those who sought the στοιχεῖα of beings were also seeking these ἀρχαί, the στοιχεῖα must be of being, not per accidens but quâ being: so that it is of being quâ being that we too must grasp the first causes. (Γ1 1003a21-32)[18]

This chapter is not, as it has been too often considered, a new beginning.[19] When the first sentence says that "there is a science that considers being quâ being," this announces an answer to B#3's question, "is there one science or several sciences of all the [kinds of] οὐσίαι?" (997a15-16, cp. B1 995b10-11): while there are of course particular sciences about particular kinds of οὐσίαι, there is also a single universal science that applies to them all. Likewise, when the first sentence of Γ adds that this science also considers "the things that belong to [being] per se," it is announcing an answer to B#4, "whether the study [θεωρία] is only about οὐσίαι or also about the per se συμβεβηκότα of οὐσίαι" (B1 995b19-20, cp. 997a25-6). The context in B helps clarify some aspects of what Aristotle is asserting in Γ1. First, when B asks whether the science of X and the science of Y are the same, it is asking whether wisdom is the science of X or the science of Y, or whether the question does not arise because these are the same science: this is clear when B#3 asks, in the B1 version, supposing that there are different sciences of the different kinds of οὐσίαι, "whether [these sciences] are all akin, or whether we should call some of them wisdoms and some of them something else" (995b12-3); likewise in the B2 version, on the same assumption, "about which kind of οὐσία should we posit that this science is" (997a17), where "this science" must mean "wisdom" or "the science we are seeking." So when Γ1 answers

[18]note some textual issues

[19]quote from Kirwan as in "The Editors of the Metaphysics" (Buhle made Γ the beginning of the Metaphysics, refs in my Zeller paper). on the other hand, Bonitz and Ross take Γ1 to be replying to the methodological aporiai. there is duplication here with Iα1--refer back, and eliminate something if the duplication is excessive

B#3 by saying that there is a single science that treats the different kinds of beings, it is saying that wisdom is a science treating these different kinds of beings.[20] Second, the context in B makes clear that the science is about ἀρχαί: there is a question whether they are axioms or ἀρχαί of οὐσίαι, and if the latter, then ἀρχαί of this or that kind of οὐσία or of all οὐσίαι; to say that there is a science that considers being quâ being is to say that there is a single science which knows causes of being quâ being, as Aristotle indeed makes explicit at the end of Γ1, and to say that this science also considers the per se attributes of being is to say that it also knows the causes of these attributes. Aristotle is not defining a new science from scratch: rather, he assumes that we are already "seeking the ἀρχαί", and that these will be found as "the highest causes," as we determined already in A1-2; then he asks what these will be causes of; and he answers that they will be causes of being quâ being and its per se attributes. To say that the ἀρχαί are αἰτίαι τοῦ ὄντος, causes of what is, is to say that they are causes to all things universally, rather than only to some one "part" of what is, such as geometrical figures. When Aristotle adds that the ἀρχαί are causes of beings quâ being, rather than under some other description, he is presupposing that the ἀρχαί must be causes "of some nature per se," because causality is a triadic relation: "X is a cause of Y" is shorthand for something of the form "X is a cause, to Y, of its being Z" ("the sun is a cause, to the wax, of its melting").[21] In such a case, X may be a cause of Y only per accidens, but it is a cause of Z per se, that is, it is a cause, to what is Z, of its being Z. To say that the ἀρχαί are causes of being and not merely of some one genus of beings is to say that they are causes, to everything that is, of some predicate Z; but then in order to find the ἀρχαί, we must first specify the predicate Z that they cause beings to have. To say that wisdom is a science of being, not per accidens but quâ being, is to say that the ἀρχαί will be causes of being quâ being, that is, causes to the things that are, of the fact that they are. To say that wisdom is also a science of per se attributes of being such as (let us suppose) unity and difference is to say that the ἀρχαί will also be causes, to the things that are, of the facts that they are each one, that they are different from each other, and so on.

Aristotle does not give a positive argument, either that "those who sought the στοιχεῖα of beings" were seeking causes of beings under the description "being," or that we should follow in their path. But it is the only plausible path to pursue, once we have rejected narrower descriptions of what the ἀρχαί cause. Every science must seek to explain something, some broader or narrower range of beings falling under some common description, and seek to explain why beings of this kind have the characteristic attributes that they do; and once we have decided that the ἀρχαί that wisdom treats are causes not just of one genus of beings, but of everything, then being and its per se attributes such as unity are the only plausible effects from which to begin the investigation. But how do we know that "the ἀρχαί and the highest causes" are not just the causes of one genus, that wisdom is not one of the "particular" sciences which "cut off some part of [being] and consider its attribute [συμβεβηκός], as the mathematical sciences do"? The underlying thought must be the same here as in A2, that the person who "knows all things, so far as possible, without having knowledge of them individually" (A2 982a8-10, cited Iα2 above) will be the person who knows the highest causes, since the highest causes will be the causes of the most universal effects. And indeed, if there are universal causes, to all things that exist, of the

[20] this is the majority view, but is opposed to Aubenque; also to Dorion in Hecquet-Stevens. but there are complications and difficulties, well brought out by Dorion, for which see below

[21] this is the standard Stoic formulation, but is also found in Aristotle (e.g. EE I,8); the Stoics are just preserving an Academic formulation, which they have particular reasons for regarding as most expressive of the ontological structure of causal relations

fact that they exist, it seems right that such causes must be prior to the causes of more particular effects that are investigated, for example, by geometry. Geometry tries to understand figures in the plane by searching for causes, to these figures, of attributes peculiar to plane figures or to particular kinds of plane figures (such as equalities and proportions of areas), not for causes of the existence of plane figures (geometry assumes the existence of its subject-matter, though it proves the existence of the complex figures, assuming the simple ones), and also not for causes to plane figures of the attributes common to all beings (there is no specifically geometric explanation for these attributes, and so geometry simply assumes them).[22] Thus the causes that geometry treats can explain attributes of geometrical objects only once these objects already exist and already have the basic attributes (sameness, difference, and so on) that are presupposed by geometrical reasoning: and existence and sameness and difference and so on are the effects of universal causes, which will be prior to the specifically geometrical causes.

What is controversial, however, is whether there are causes of being quâ being (or of its per se attributes): a philosopher who thinks that wisdom studies only one genus of beings will say, not that the causes of this particular genus are superior to the universal causes of being, but that there are no causes beyond the causes within a genus, and thus that the highest causes can only be the causes of the highest genus and of the attributes proper to that genus. Aristotle's chief opponent here is surely Speusippus, who denies that there are common causes of things in different genera, and concludes that the highest ἀρχαί are causes only of the highest genus, namely unity and plurality as causes of mathematical numbers. (The reason that Aristotle cites the example of the mathematical sciences, and denies that wisdom is any of these, is to reject Speusippus' claim of the priority of arithmetic.) Once again, what Aristotle says in Γ1 is not intended as a conclusive argument that his description of wisdom must be right, but only as a sketch of a plausible program for wisdom: on the hope that there are indeed universal causes, of being or of some coextensive attribute, the program will be to study being and its per se attributes, distinguishing their senses if they are equivocal, and then to examine what kinds of causes they have, in order to see whether some causal chain leads up from these effects to the ἀρχαί. And this is indeed the program carried out in Metaphysics ΔΕΖΗΘΙΛ. MN, by contrast, will examine paths up to the ἀρχαί not from the broadest effect but from the (allegedly) highest effect, eternally unmoved οὐσίαι.

From this standpoint it seems easy enough to see Aristotle's reply to the difficulties in B#3-4. B#3 had argued that, if there were a single science of all οὐσίαι,

> there would also be a single science that demonstrates the attributes [συμβεβηκότα] about all things, since every science that is demonstrative about some subject [ὑποκείμενον] considers its per se attributes out of the common opinions [i.e. the principles of demonstration described in B#2]. So to consider the per se attributes of the same genus out of the same opinions will belong to the same science: for that about which [i.e. the genus, namely οὐσία] belongs to one science, and those out of which [i.e. the opinions, namely the principles of demonstration] belong to one science, whether the same science or another, so that these sciences, or one of these sciences, will also consider the attributes.

[22] references in E1 and parallels, esp. Posterior Analytics on existence and essence of simples and complexes; also Γ etc. on what the geometer assumes

(997a18-25)[23]

The answer is that a science that considers all οὐσίαι (and the principles of demonstration) must demonstrate the attributes that are common to all οὐσίαι, but it will not demonstrate all attributes of οὐσίαι, because it will not demonstrate the attributes that are peculiar to a particular genus of οὐσίαι; just as the science that considers all quantities quâ quantity, namely universal mathematics (as witnessed in Euclid's Elements Book V), demonstrates attributes common to all quantities as such, but not all attributes of quantities, because it does not demonstrate the attributes peculiar to particular genera of quantities such as numbers, lengths, plane figures, solids, or weights. So the universal science will not usurp the roles of all the particular sciences. It seems even easier to answer B#4, whether the study [θεωρία] is only about οὐσίαι or also about attributes, e.g. "if the solid is an οὐσία, and lines and surfaces" (997a27-8), is it the same science that knows these οὐσίαι and their attributes? It seems yes, but then the difficulty is that "the [science] of the οὐσία too will be demonstrative, but it seems that there is no demonstration of the τί ἐστι" (997a30-32). The obvious answer is that, if the science of the attributes and the science of the οὐσία are the same and the science of the attributes is demonstrative, it follows that the science of the οὐσία is demonstrative, but not that it is demonstrative of the οὐσία: it may exhibit knowledge of the οὐσία precisely by demonstrating that the attributes belong to the οὐσία, and this is what geometry and so on will do. But Aristotle need not limit knowledge of the οὐσία to this: the science of οὐσία X might also demonstrate the existence of X, and simultaneously manifest (without demonstrating) the definition of X, if it grasps causes of being to X, and demonstrates the existence of X through these causes, as astronomy, by knowing the cause of being to eclipses, demonstrates the existence of eclipses and manifests their definition.[24] And indeed the science of being that Aristotle goes on to pursue is not mainly concerned with demonstrating the attributes of being (e.g. with showing that every being is one), but rather with examining the causes of being.

However, there is an important divergence between Γ1 and the aporiai as Aristotle has formulated them in B#3-4, in that he now speaks of a science of all ὄντα, and of per se attributes of τὸ ὄν, whereas in B#3 he asked about a science of all οὐσίαι, and per se attributes of οὐσίαι or of particular kinds of οὐσίαι. At first sight there seem to be two quite divergent possibilities of interpreting B#3-4. Perhaps (1) Aristotle is using "οὐσία" here in a loose non-technical way,

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[23]there are several unclarities here. I take the argument to be inferring that there would be a single science of all attributes, not necessarily that the single science of all οὐσίαι would itself also be a science of all attributes. the issue about whether the science of οὐσία and the science of the principles of demonstration are the same (and, if not, which of them is wisdom) was raised in B#2, which leads into the B#3 question whether there is a single science of all οὐσίαι (and if not, and if the science of some kind of οὐσία is wisdom, then which one). in a24 there is a textual issue αὗται or αὐταί or αἱ αὐταί (note Alexander on this): I think αὗται is correct. the last words ἐκ τούτων μία (translated above "one of these") might instead mean "one science derived from both of these," i.e. from the science of οὐσία and the science of the principles of demonstration

[24]E1 and PostAn if not sufficiently covered in note above. the K1 parallel to B#4 also asks, assuming that the science of οὐσίαι and of the attributes are not the same, which of these is wisdom: the science of οὐσίαι has the advantage of being about the primary objects, whereas the science of the attributes has the advantage of being demonstrative. here, as in the B#3 question, if there isn't one science of all οὐσίαι, which of them is wisdom, and the B#2 question, if the science of οὐσία and the science of the principles of demonstration aren't the same, which of them is wisdom, and in the B#1 question, if the sciences of the four causes aren't the same, which of them is wisdom, it's a mistake to see this as an argument against the disunity thesis. rather, our main interest is in what wisdom is, whether it's a science of X or a science of Y, or whether they're the same science so the question doesn't arise

as equivalent to "being," so that the different "genera of οὐσίαι" will be the different categories, and the attributes common to the different genera of οὐσίαι will be unity and sameness and difference and so on: in this case Γ1-2 will answer B#3 by saying that wisdom is a single science of beings in all the categories, and B#4 by saying that this is also a science of trans-categorial attributes such as unity, what medieval philosophers call the "transcendentals." Or perhaps (2) he is using "οὐσία" in its technical sense, so that the different genera of οὐσίαι are (say) sublunar and celestial bodies and the different kinds of mathematicals and Forms if these exist, and the opposition between οὐσίαι and συμβεβηκότα is between substances and the other categories: in this case Γ1-2 will answer B#3 by saying that "it belongs to a science which is one in genus to consider the species of being,[25] and it belongs to the species [of the science to consider] the species" (Γ2 1003b21-2), i.e. while we may say that philosophy (a genus covering several particular sciences) treats all οὐσίαι, each particular kind of οὐσία is treated by a particular philosophical science such as physics or theology, and there is no specifically single science that treats all οὐσίαι. We will then presumably answer B#4 by saying that accidents are treated by the same genus of science that treats οὐσίαι, philosophy, and that each particular kind of accident is treated by the science of the particular kind of οὐσία that is the natural subject of that kind of accident;[26] and, if there is no single science of all οὐσίαι, wisdom cannot be such a science, but will presumably be first philosophy or theology.

In support of the second interpretation, B#3-4 are presented, particularly in the short version in B1 (where the order is #3-#5-#4) as continuous with B#5, whether there are only sensible οὐσίαι or also others beside [παρά] these, where it seems that "οὐσία" must be taken in its technical sense; also in support of the second interpretation, when B#3 (in the B1 version) asks, on the assumption that there are different sciences of the different οὐσίαι, "are they all of a kind, or are some of them to be called wisdoms and the others something else?" (995b12-13), Γ3 seems to answer this in saying "physics is a wisdom [σοφία τις], but not the first" (1005b1-2),[27] which makes sense only if the οὐσίαι are sensible and non-sensible substance, rather than the different categories. However, it is clearly impossible for the οὐσία/συμβεβηκός distinction in B#3-4 to be the categorial substance-accident distinction, since Aristotle passes freely back and forth here between speaking of "συμβεβηκότα" and of "καθ᾽ αὑτὰ συμβεβηκότα"--which will not generally be accidents in the categorial sense--and it speaks of each science as demonstrating that the συμβεβηκότα hold of the οὐσία. Furthermore, Γ2 says that "these [sc. 'the same and other and contraries,' 1004a27, fuller list 1004a16-22] are πάθη per se of the one quâ one and of being quâ being" (1004b5-6), and that therefore "it belongs to one [science] to give an account of these things and of οὐσία: this was one of [the things discussed] in [the book of] aporiai, and it belongs to the philosopher to be able to consider all of them" (1004a31-b1).[28] So the per se

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[25]for the text here--deleting the extra ᾗ ὄν--see discussion below

[26]Alexander takes οὐσία and apparently also συμβεβηκός in B#3-4 in their categorial senses; by contrast, Bonitz in paraphrasing B#3 speaks of it asking which of "genera entis" wisdom is about (not "genera substantiae")--he thus assimilates B#3 to the language of Γ1, which suggests that he takes these genera entis, the οὐσίαι of B#3, to be the categories. also note, if not elsewhere, on the different construals which have been given for Γ2 1003b21-2; discussed in Dorion's article in Hecquet-Stevens. (are the species of being the categories or the kinds of substance? is there a phrase τὰ εἴδη τῶν εἰδῶν?)

[27]σοφία occurs only twice in the plural in Aristotle, and the other occurrence, NE 1141a29-31, is a reductio ad absurdum, "if so there will be many σοφίαι"; "σοφία τις" seems to echo the [accusative plural] "σοφίας" of B#3

[28](i) with Ross and Jaeger deleting ὅπερ ἐν ταῖς ἀπορίαις ἐλέχθη in a32, missing in A^b (and noted in E as missing in some manuscripts), as a duplicate of a33-4 τοῦτο δ᾽ ἦν ἓν τῶν ἐν τοῖς απορήμασιν: for Jaeger, as usual, these are variae lectiones. more likely one of them is a gloss. in any case, both cannot remain, and it makes no difference which does; (ii) cite also Γ2 1005a13-18

attributes of being, or of οὐσία, are not categorial accidents but the "transcendentals." Furthermore, while Γ2 may be referring back here in the first instance not to B#4 but to a passage in B1 without direct parallel in B2-6, "about the same and other and like and unlike and contrariety, and about prior and posterior, and all other such things, about which the dialecticians try to inquire, inquiring on the basis of accepted opinions [ἔνδοξα] alone, to whom does it belong to consider all these?" (995b21-5),[29] still, if these are per se attributes of being, as Γ2 says they are, then the question whether it belongs to the same science to study οὐσία and to study these will also fall under the question that Aristotle is raising in B#4.[30]

The solution must be that the οὐσία-συμβεβηκός distinction in B#3-4 is neither anything so precise as the distinction between the category of substance and the other categories, nor anything so precise as the distinction between beings in the categories and the transcendentals. The συμβεβηκότα that Aristotle is mainly interested in are the transcendentals, which are the συμβεβηκότα that belong to all οὐσίαι, but each particular science investigates some domain of οὐσίαι, or as Aristotle says some οὐσία, and demonstrates its συμβεβηκότα: so there are συμβεβηκότα of broader and narrower ranges of οὐσίαι. None of this presupposes the Aristotelian theory of categories, but accidents in the sense of the theory of the categories should also be συμβεβηκότα in the sense of B#3-4. Thus shape, which is in the category of quality, would be a καθ' αὐτὸ συμβεβηκός of two- or three-dimensional extension, since it necessarily applies to every two- or three-dimensionally extended thing, and does not apply to anything not so extended; and even and odd, also in the category of quality, would be καθ' αὐτὰ συμβεβηκότα of number, because one or the other of them applies to all numbers and only to numbers or numbered things.[31] Likewise, οὐσία here is not restricted to its technical sense in Aristotle's theory of categories: "an οὐσία," that is, a kind of οὐσία, seems to be whatever domain a science marks out as its object--which in some cases, such as arithmetic and geometry, will not in Aristotle's own judgment fall under the category of substance.[32] However, in Γ Aristotle is bringing his theory of categories to bear on the aporiai. Γ1 says that there can be a science of all beings, and of the attributes belonging to all beings as such, but does not mention the categories, but Γ2 explicitly claims that there is a single science of beings in all categories. There are thus two problems to be solved: how, and how far, a single science can apply to beings in different categories, and how, and how far, a single science can apply to different genera within the category of οὐσία.

One reason that Aristotle now raises the issue of the categories is that he thinks that the problem of finding common ἀρχαί of things in the different categories poses a serious difficulty especially for Platonic projects of finding causes of all beings. When in Γ1 he calls as witnesses on behalf of a universal science "those who sought the στοιχεῖα of beings" (1003a28-29), he is referring both to Plato and to the physicists, as he had described them in B#6.[33] The physicists

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[29]Aristotle adds, "and also the attributes of these very things [sc. sameness, otherness, contrariety etc.], i.e., not only what each of these is, but also whether one thing has [only] one contrary" (995b25-7). this is also taken up in our passage of Γ2: "if it does not belong to the philosopher, who will investigate whether Socrates and Socrates seated are the same, or whether one thing has [only] one contrary, or what 'contrary' is or in how many ways it is said?" (1004b1-4); here too the question is whether these questions can be left to the dialectician. see discussion below

[30]cross-reference and avoid duplications or contradictions with Iα1 pp.8-9 n17

[31]cite (in full) Γ2 1004b10-17

[32]it seems to be possible for something to be both an οὐσία and a συμβεβηκός: note cases here and in Γ of attributes of attributes, and knowing not only τί ἐστι some attribute (i.e., apparently, its οὐσία) but also its further συμβεβηκότα. perhaps also a note on disjunctive attributes, per se secundo modo

[33]in context in Metaphysics Γ1, "those who sought the στοιχεῖα τῶν ὄντων" refers back to B#6, where it seems to describe both sides of that aporia, Plato and the φυσικοί (see fuller discussion in Iβ3 below). thus at 998a30-32

took for granted that, in looking for the causes of what exists by nature, they were looking for the causes of everything that exists, though they may not have specified that these causes would be causes of the predicate "being," and so may not have searched explicitly for causes of beings quâ being.[34] Plato, however, in recognizing both sensible and non-sensible things, and seeking a common ἀρχή of them all, is especially concerned to look for causes of predicates that are not peculiar to changeable things, but apply both to sensibles and to Forms; and at A9 992b18-24 Aristotle specifically describes Plato as looking for the στοιχεῖα τῶν ὄντων common to all genera of beings, not only substances but also qualities or actions or passions. And in at least two senses, Plato is looking for a cause of being specifically quâ being. First, he is looking for the formal cause or essence, the αἴτιον τῆς οὐσίας of a thing: this is (as Aristotle says at Δ8 1017b15) the αἴτιον τοῦ εἶναι of the thing, in the particular sense that it is the cause, to the thing that is F, of the fact that it is F, and thus the cause, to F, of the fact that it exists.[35] Plato is especially interested in the parts of the essence, i.e. the universals that occur in the definitions of different things and are thus στοιχεῖα whose combinations yield the different essences; he thinks that sufficiently universal things will be (partial) causes of οὐσία to things in different genera, and that the highest universals, such as being and unity, will be causes of οὐσία to everything. Second, one ἀρχή for Plato is the form of being-itself, which is supposed to be the cause, to all other beings, of the fact that they are beings, so that a knowledge of this ἀρχή especially will be a science of being quâ being.

However, Aristotle thinks that there are serious, indeed decisive, objections to Platonic dialectic as a way of finding universal causes of being; and his immediate burden in Γ2 in defending his answer to the third aporia will be to show that there is a different way of finding universal causes of being, one immune to the objections raised against Platonic dialectic. Aristotle is responding, in the first instance, not to any specifically Speusippean objection, but to a point he himself had raised in his series of objections against Plato in A9:

> In general, if we seek the στοιχεῖα of beings without distinguishing, though they are said in many ways, it is impossible to find them, especially if we seek in this way, [namely by asking] out of what kinds of στοιχεῖα they are [composed] [ἐξ οἵων ἐστὶ στοιχείων]. For it is not possible to grasp what things acting or being acted on or the straight are [composed] out of, but, if at all, only for substances: so it is not right either to seek the στοιχεῖα of all beings or to think that one has found them. (A9 992b18-24)

Aristotle is here objecting to Plato's search for στοιχεῖα that will be στοιχεῖα of all beings universally, where this includes not only substances but also beings in the accidental categories. He himself in Γ1 is undertaking to look for ἀρχαί of all beings universally, and in Γ2 he makes clear that this includes accidents as well as substances, but he wants to show that his way of

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Empedocles says that the στοιχεῖα are ἐξ ὧν ἐστι τὰ ὄντα ἐνυπαρχόντων and not γένη τῶν ὄντων, although the στοιχεῖα are not themselves directly called στοιχεῖα τῶν ὄντων; further down, Plato says that the στοιχεῖα τῶν ὄντων are being and the one and the great-and-small. for the phrase στοιχεῖα τῶν ὄντων compare Plato Statesman 278d4-5, speaking of the letters of "the large and difficult συλλαβαὶ τῶν πραγμάτων" (as opposed to ordinary spoken or written letters). note A6 987b18-20 and A5 98b23-26 on what Plato and the Pythagoreans thought were the ἀρχαί and στοιχεῖα of all beings. but cf. esp. A9 992b18-24 for a criticism of Plato's search for στοιχεῖα τῶν ὄντων.

[34] note Γ2 1004b5ff, Γ3 1005a29-b2

[35] see discussion in Iγ1c below

looking for these ἀρχαί is immune to the objections against Plato's way. Already here in A9 he is implying that the difficulties arise "especially if we seek in this way." One clue is in the word "στοιχεῖον", which Aristotle uses in A9 in describing the project he is criticizing, but which he is careful to distance his own project from in Γ1, where "we" are seeking ἀρχαί and causes of being, while "those who sought the στοιχεῖα of beings" are spoken of in the imperfect. ("Since we are seeking the ἀρχαί and the highest causes, it is clear that they must be [causes] of some nature per se. So if those who sought the στοιχεῖα of beings were also seeking these ἀρχαί, the στοιχεῖα must be of being, not per accidens but quâ being: so that it is of being quâ being that we too must grasp the first causes," 1003a26-32.) Στοιχεῖον, "letter of the alphabet," is one particular metaphor for the ἀρχαί, used by some physicists and also by Plato; for Aristotle it connotes one particular way of conceiving the ἀρχαί, namely as simple constituents [ἐνυπάρχοντα] of things, out of which [ἐξ ὧν], in different combinations, different things are composed.[36] Aristotle consistently attributes to Plato the view that the genera or the parts of the definition of a thing are the στοιχεῖα out of which the thing is composed. Here in A9 he is criticizing specifically the claim that we can find the ἀρχαί of all things by discovering universals which appear as στοιχεῖα in the definitions of widely diverse things, even of things in different categories: but it can be the same στοιχεῖον in the definitions of different things only if it is said univocally of all of them, and nothing can be said univocally of things in different categories. Aristotle's objection is not (as might seem from the A9 text) that accidents cannot be out of anything, but rather that they cannot be out of the same things that substances are out of, and that this way of finding ἀρχαί common to all things therefore fails. This becomes clear from a parallel in Metaphysics Λ4, where Aristotle returns to the A9 passage in the process of cleaning up the aporiai from earlier books:

> Someone might raise the aporia whether the ἀρχαί and στοιχεῖα of substances and of relatives are the same or different, and likewise for each of the categories. Indeed, it is absurd if they are the same for them all: for relative and substances would be out-of [ἐκ] the same things. But what will this [common constituent] be? For there is no common [κοινόν = universal] thing besides [παρά] substance and the other categories, and the στοιχεῖον is prior to the things of which it is a στοιχεῖον [sc. and a common στοιχεῖον of substances and relatives, being prior to both, would have to exist παρά both]. But neither will substance be a στοιχεῖον of relatives, or any of these [be a στοιχεῖον] of substance. (1070a33-b4).[37]

Aristotle is in fact willing in Λ4 to say that beings even in accidental categories are ἐκ στοιχείων, and that these στοιχεῖα are analogically the same in all categories (they are in each case matter, form and privation): but Plato's project was to find common στοιχεῖα that would be specifically and indeed numerically the same, and Aristotle's main aim both in the A9 and in the Λ4 passages is to show that this project fails. But Aristotle is also preparing in Λ4 for his own way of finding a numerically single ἀρχή of all things (which he will present in Λ6-10), by pointing out that not all ἀρχαί are στοιχεῖα: "since not only constituents [ἐνυπάρχοντα] are causes, but also external things like the mover [efficient cause], it is clear that ἀρχή and στοιχεῖον are different" (Λ4 1070b22-3), and thus the arguments against things in different

[36] see discussion in commentary on B#6 in Iβ3 below
[37] for this passage and its context see IIIβ1

categories having common στοιχεῖα do not show that they do not have a common ἀρχή.

In Metaphysics Γ2 Aristotle's first task is to defend, against the criticisms he himself has made in A9, the project announced in Γ1 of seeking the ἀρχαί as causes of all beings, and thus of beings in all categories. While he is perfectly aware of the solution he will present in Λ, and is deliberately laying the groundwork for that solution, he does not as yet make any explicit mention of the ἀρχή/στοιχεῖον distinction, which he will introduce only later in the Metaphysics, where he is able to motivate it as the only way to solve aporiai that confront the physicists and the dialecticians. Aristotle first uses the distinction in Z17, although in Γ1 he uses "στοιχεῖον" only for the ἀρχαί of his predecessors, carefully avoiding it for the ἀρχαί he himself is seeking, and although the definition of στοιχεῖον in Δ3 makes explicit that στοιχεῖα, unlike ἀρχαί in general, must be ἐνυπάρχοντα. (While the ἀρχή/στοιχεῖον distinction as Λ4 presents it turns on the contrast between the external efficient and the internal material and formal causes, Γ never notes anywhere that cause is said in different ways.)[38] Nonetheless, in Γ2 Aristotle is showing how there can be a single ἀρχή of beings in different categories, despite the fact noted in A9 that things in the different categories are called beings in different ways.

In Γ2 1003a33-b19, Aristotle defends the possibility of a science of being on the ground that being is said πρὸς ἕν, primarily of substances and derivatively of non-substances: these non-substances are, especially, beings in the different categories of accidents, but also negations and privations (1003b8-10), which do not fall under any of the categories. These different things are all said to be, neither all in the same way, nor merely equivocally, but as that "everything that is related to health [πρὸς ὑγίειαν], whether by the fact that it preserves health or that it produces health or that it is a sign of health or that it is receptive of health, is called healthy [ὑγιεινόν]" (1003a34-b1). While Aristotle never says explicitly what it means for something to be said πρὸς ἕν, his examples make it fairly clear what he means. The opening of the Categories (1a1-12) says that X is said univocally of Y and Z if the same definition [λόγος] of X applies both to Y and to Z, whereas X is said equivocally of Y and Z if the same name "X" applies both to Y and to Z but the same λόγος of X does not. We can add that X is said of Y and Z πρὸς ἕν, primarily of Y and derivatively of Z, if the λόγος of X in the primary sense applies to Y, and the λόγος of X in the sense that applies to Z contains and refers to the λόγος of X in this primary sense.[39] Thus

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[38] Z17, by contrast with Λ4, does not count the form as a στοιχεῖον; for discussion of this difference, see IIε on Z17 and IIIβ1 on Λ4

[39] note on the evidence (from particular instances of things said πρὸς ἕν), note on terminology ("focal meaning," "analogy of attribution"--and note Aubenque's polemic on analogy, he's technically correct but the point does not have the larger significance he imagines), note against the confusion with paronymy. Aristotle says here that being is said "πολλαχῶς, but πρὸς ἓν καὶ μίαν φύσιν and not ὁμωνύμως" (1003a33-4); the opposite of being said πολλαχῶς here is being said καθ᾽ ἑν. … Z4 1030a32-b3, which quote, also contrasts being said πρὸς ἕν, and also (another alternative), being said by πρόσθεσις and ἀφαίρεσις, with being said ὁμωνύμως … Θ1 1046a6-11 contrasts those powers which are called powers homonymously (= what Δ12 says are called powers by metaphor; Δ12 also talks about homonymy, but not clear it's the same thing there) with those that are somehow πρός the primary kind of powers … EE 1236a16-20, things said πρὸς ἕν aren't "entirely" homonymous (but at b25-6 they're not homonymous) … elsewhere, things that are said πρὸς ἕν are homonyms but not merely chance homonyms: this language at NE 1096b26-8 (perhaps the only Aristotelian text for "chance equivocals," although this becomes standard in the commentators, e.g. Boethius) … some references … this seems to be merely a terminological issue, but some people think it's important … note discussion in Annick Stevens' book (and references therein?) … also see Shields Order in Multiplicity (who thinks all non-synonyms are homonyms, with e.g. Owen and Owens); note his texts, including Topics 110b16-32 and GC 322b29-32 telling against his view, various texts from the Topics plus Categories c1, two texts from the Prior Analytics, and Physics 186a25-b12 (mostly collected Shields p.10 n2) supporting it … see if they're others, check Bonitz Index 514a45-9 and 615a45-6 … Alexander In Met. 241 seems to be a locus classicus: elsewhere Ar speaks of all these as homonyms, but here more carefully he says they're in

"healthy" is said primarily of animals, whereas a diet is called healthy because it falls under the derivative λόγος "tending to make an animal healthy," where the term "healthy" in this definition can be replaced by a definition of "healthy" in the primary sense. So too, Aristotle says, "some things are called beings because they are substances, others because they are attributes [πάθη] of substance or because they are a transition to substance or corruptions or privations or qualities or productive or generative of substance or of one of the things said in relation to substance, or negations of one of these or of substance" (1003b6-10). Just as a diet is called healthy, not in the primary sense but because it bears some appropriate relation to something that is healthy in the primary sense, so a quality like white is called a being, or is said to exist, because it bears an appropriate relation to something that exists in the primary sense, namely a substance. For a quality, the appropriate relation is simply to be the quality of a substance: whiteness is said to exist because Socrates exists and whiteness is in Socrates, and the white is said to exist because Socrates exists and Socrates is white. We will examine Aristotle's analysis of the different senses of being and their relations in more detail in Iβ4 and Iγ1 below, but for the purposes of Γ2 he does not think that more detail is needed.

Aristotle says that "it belongs to a single science, not only to consider things that are said in a single way [καθ᾽ ἕν], but also things that are said πρός a single nature, for these too are in a way said καθ᾽ ἕν: so it is clear that it also belongs to one science to consider beings quâ being" (1003b12-15): medicine studies all the different healthy things, even though they are not all called healthy univocally, because they are all related to the health of animals. The lesson Aristotle draws from the example of medicine is that "science is always principally about the first thing, that on which the others depend and on account of which they are called [what they are called, e.g. healthy]; so if [in the case of being] this is substance, the philosopher would have to grasp the ἀρχαί and causes of substances" (1003b16-19). That means: since only substances exist in the primary sense, and other things "exist" only in dependence on a substance, and only by having some relation to a thing that exists in the primary sense, the causes of substances will be the causes of everything that exists in any way. This conclusion justifies the claim of Γ1 that there are causes which are causes of all beings quâ beings, and thus that wisdom as knowledge of the ἀρχαί will be knowledge of the causes of all beings quâ beings; it also shows that the right way to discover these ἀρχαί is to begin by studying substances and then look for the causes, to these substances, of the fact that they are. (Substances themselves might, as Speusippus thinks, be too diverse to have an ἀρχή in common, but this is a different difficulty from the one Aristotle is answering here, and it can be resolved only in the course of the inquiry into the ἀρχαί of substances. The causes of substances may not be sufficient causes of all beings, and there may also be other causes which are peculiar to particular classes of beings, but the causes of substances will be necessary causes of all beings.) This is the key to Aristotle's positive explanation in Λ5 of how all things, even things in different categories, can have the same ἀρχαί, not merely by having analogically the same στοιχεῖα: "since some things are separate and others are not separate, the former are substances; and the causes of all things will be the same for this reason, because attributes [πάθη] and motions cannot exist without substances. And these [causes of substances, which will be the causes of all things] might be soul and body, or reason and desire and body" (1070b36-a3).[40] It is certainly not a new proposal to look for the

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between (Boethius will call them homonyms, distinguishing casu/consilio, taken up by scholastics) … my practice has been to use "equivocal" (= "homonymous") as shorthand for πολλαχῶς λεγόμενον, but maybe this is too crude

[40]recapitulated 1071a34-5, which perhaps quote. for discussion of the first passage, misinterpreted by most scholars including Ross, see IIIβ1

causes of all things by looking for the causes of substances: "the majority and the earlier [philosophers] thought that substance and being were body, and that the other things were attributes [πάθη] of this, so that the ἀρχαί of bodies would be the ἀρχαί of beings; whereas those who came later and are thought to be wiser than these [took as substances] numbers [so that the ἀρχαί of numbers would be the ἀρχαί of beings]" (B#12 1002a8-11).[41] But Aristotle is noting the implication that the ἀρχαί of all things that we find in this way will not be (as in the Platonic project criticized in A9) the στοιχεῖα of all things, but at most of substances; and this raises the possibility that the ἀρχαί will not be στοιχεῖα at all.

What I have given so far is perhaps a minimalist interpretation of the significance of πρὸς ἕν predication for the project of the Metaphysics. But that is all the significance it has. The Λ5 passage does not explicitly refer to the fact that being is said πρὸς ἕν, but only to the fact that the other things cannot exist without substances (though this is grounded on the fact that a non-substance is said to exist only through its relation to a substance). There are three more passages that draw more directly on the Γ2 analysis of the different senses of being (Z1 1028a13-31, Z4 1030a17-b6, and briefly Λ1 1069a21-4,[42] although only Z4 explicitly uses the notion of πρὸς ἕν predication), but they do not draw any lesson beyond the lesson of Λ5. Λ1, like Λ5, uses the posteriority and dependence of non-substantial beings to argue that we should pursue wisdom by seeking the causes of substances (rather than of something else); and Z1 uses the same premisses to argue, not that the causes we are seeking are causes of substance, but that "the question that is always asked and always disputed [ἀπορούμενον], both in former times and nowadays, 'what is being?' [τί τὸ ὄν]"--i.e. the disputes reported in the Sophist, about how many beings there are and whether they beings are changing or unchanging--"is the question 'what is οὐσία?' [τίς ἡ οὐσία] … so that we too must consider especially and most of all and as it were exclusively about what exists in this way [sc. as substance], what it is" (1028b2-7).[43] The aim of all of these passages is to dismiss non-substantial beings and to say that we need investigate only substances (what substances there are, and what their causes are); none of them suggest that, after investigating substances, Aristotle will return to illuminate the derivative modes of being of non-substances, and indeed he never does. In the one passage that calls up the full theory of πρὸς ἕν predication, in Z4, Aristotle tries to moderate his provisional conclusion that only substances are definable and have essences, by suggesting that definition and essence, like being, are said πρὸς ἕν, so that non-substances have definitions and essences in a derivative sense; "but which way one wants to speak of these things [i.e. to say that non-substances do not have definitions and essences or that they do so derivatively] makes no difference: and this much is clear, that the primary and unqualified definition and essence are those of substances" (1030b3-6).

Thus in the context of the Metaphysics, and of the progressive determination of wisdom, the function of Γ2 1003a33-b19, and of other passages that draw on the same considerations, is not to unify the science of substance and sciences of other kinds of being, but rather to eliminate non-substances from consideration in the pursuit of wisdom. Realizing this helps us avoid two opposite errors in the interpretation not just of Γ2 but of the Metaphysics overall, one (represented in one way by G.E.L. Owen, in another way by Joseph Owens and Patzig, Frede draws on both) which takes the overall project of the Metaphysics to rest on a unification of the

[41] cp. A5 on the Pythagoreans on the ἀρχαί of number as the ἀρχαί of all things. compare also Λ1, both on the right answer and on the practice of earlier philosophers (divided, as here, into two camps); perhaps cite also De Anima II,1 on the primacy of bodies and especially of natural bodies

[42] not counting the K parallel to Γ2 and the retrospective summary at the beginning of Θ1

[43] see discussion in IIα. the questions τί τὸ ὄν and τίς ἡ οὐσία here are purely extensional

different senses of being, perhaps even a "reduction" of derivative senses to a primary sense or a "derivation" of these senses from a primary sense, and another (represented by Aubenque) which takes the fundamental lesson of the Metaphysics to turn on the failure of such a unificationist or reductionist project. Owen in particular, embedding Metaphysics Γ in a developmental story, thought that Aristotle's discovery of the πρὸς ἕν predication of being allowed him to overcome what he had previously thought were decisive objections against a universal science of being, and so allowed him to arrive at his mature metaphysical project. But it is not clear that Aristotle had anything to overcome. He does say in Eudemian Ethics I,8, in arguing that there is no Idea of the good because goodness is said in different ways in different categories, "just as being is not some one thing in[44] all the things which have been mentioned, so neither is the good, and there is not a single science either of being or of the good" (1217b33-5), but his point here is, first, that it does not belong to the same science to know what is good (e.g.) in diet and in battle, and, second, that there is no shared universal goodness in the many good things which could be grasped in a single cognitive act and might be imagined to exist apart. But Aristotle never has any ambition to discover a cognitive act whose content would be a being shared by things in all categories; the claim is rather that the causes of substances will be the causes of beings in all categories, so that to whatever extent it belongs to a single science to know the causes of all substances, it will also belong to a single science to know the causes of all beings.[45] Owen says that Metaphysics Γ1-2 is, if not in outright contradiction, at least in tension with a text from what Owen sees as an earlier stage of the Metaphysics itself, namely the passage we have cited from A9: Owen says that in A9 Aristotle "maintains that if the Platonists had recognized the ambiguity of the expression ta onta ('beings') they would have seen the futility of looking for the elements of all the things that are, for only the elements of substances can be discovered (992b18-24). This does not formally contradict the argument of the fourth book, but it is out of tune with the claim that a general inquiry into the elements of the things that are is legitimate and that those who had engaged in such an inquiry were on the right track (1003a28-32)" (Owen LSD p.192).[46] But there is no such discord: A9, at an early aporetic stage of Aristotle's argument, points out the impossibility of finding στοιχεῖα of all beings, and Γ1-2 resolves the aporia, not by saying that the inquiry into the στοιχεῖα of beings is legitimate, but by saying that we too, like those who

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[44]περί, but παρά is more likely, see the apparatus in Walzer-Mingay

[45]this passage was Owen's only serious evidence that Aristotle ever rejected a universal science of being. see Alan Code's critical review of Owen's evidence in his article "Owen on the Development of Aristotle's Metaphysics," in William Wians, ed., Aristotle's Philosophical Development (Rowman and Littlefield, 1996), and Code's discussion of the implications of the EE passage in particular. the passages which Owens cites from the Posterior Analytics (I,7 75b12-15, I,9 76a6-25, I,11 77a26-31) do nothing to support his case. goodness is in a somewhat different situation than being, since it is not clear that what is good in non-substance categories is so through the goodness of what is good in substance ("νοῦς and god," EE I,8 1217b30-31), whereas what is in non-substance categories is so through the being of substances (for white to exist is for some substance to exist and to be white). substances and their causes will not be sufficient causes of being to things in other categories, but they will be necessary causes. but none of this is Aristotle's concern in the EE

[46]Owen further contrasts both A9 and Γ1-2 with the assertion of Λ4 that things in different categories have the same elements "by analogy" (LSD pp.192-3); his main aim is to date Λ before Γ, before the discovery of the πρὸς ἕν predication of being and thus before the turn to a universal science of being. Owen is of course right that Λ4's thesis that the elements of all things are the same by analogy is different from Γ2's thesis that being is said πρὸς ἕν; but the thesis of Γ2 is intended as an argument for the positive result of Λ1-5, stated not in Λ4 but in Λ5, that the causes of substances are the causes of all beings. this is the only genuine path to the desired numerically single principle, while the negative argument of A9 and Λ4 is devoted to showing, against Plato, that the path to the ἀρχαί as στοιχεῖα of all beings can reach only analogically and not numerically (or even specifically or generically) single ἀρχαί

sought the στοιχεῖα of beings, should look for first causes of being quâ being, namely the causes of substance, which will be causes but not στοιχεῖα of all other beings as well. Furthermore, even if Owen were right that Aristotle had changed his mind between A and Γ on the possibility of a universal science of being, this would not have the importance that Owen suggests: Owen speaks in Jaegerian terms of Aristotle moving from special to general metaphysics (LSD pp.180-81), but the change Owen describes could not be from a science of divine things to a science of all beings, but only from a science of substances to a science of beings in all categories.[47] Even if Aristotle had decided that being was said purely equivocally of the different categories, the only consequence would be that the first science would be a science not of being in general but only of substance in general, and since the Metaphysics says almost nothing about the being of accidents anyway, this would not be a significant difference in practice. Frede thinks that Aristotle's program is, after determining the primary mode of being of substances, to descend to determine the derivative modes of being of non-substances, but of course Aristotle never does anything of the kind, and he also never promises to do so. The ἀρχαί will be found as causes of being to substances, and they will also be necessary causes of being to all things (causes without which these things could not exist), but they will not be sufficient causes of being to non-substances (indeed they may well not be sufficient causes of being to all substances): no downward way is possible, and, since Aristotle's interest in the modes of being seems to be purely instrumental to discovering an effective path to the ἀρχαί, there is no sign that he would want to pursue a downward way even if he could.[48]

Aubenque is thus right to speak of Γ2's account of the πρὸς ἕν signification of being as "isolated" within the Metaphysics, and to warn against mistaking Aristotle's programmatic statements in Γ1-2 for a description of what he actually does in the Metaphysics. But Aubenque draws the wrong lesson: it is not that Γ1-2 had a program for unifying the different senses of being, reducing them all to one primary sense or deriving them all from one primary sense, and that this program failed, that Aristotle was never able to give the account of accidents that would explain how their mode of being is related to that of substances. Rather, Aristotle has said all he needs to about accidents in Γ2, and does not need to return to them afterward, except to make some particular point with implications about substance, as in Z4-6 and in Λ4-5.[49] Aubenque is wrong to suggest that the description of being as said πρὸς ἕν in Γ2 is promissory, or that there remains a "problem of being" constituted by the plurality of categorial senses: whiteness exists because it is an affection of a substance, i.e. because some substance exists and is white, and this

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[47]Owen chooses to represent this move toward general metaphysics as a move toward Platonism rather than (as in Jaeger) away from Platonism, but that makes very little difference--it just depends which features of Plato you want to abstract out as "Platonism." on p.181 Owen says, mysteriously, that at the time of the Organon, EE, and Metaphysics A, Aristotle "for reasons of logic … confined his interest to the special sciences (of which theology is one)," but the "reasons of logic" that Owen describes restrict the domain of metaphysics only to substance, not to divine substance; if Aristotle had thought that there could be a science of divine substance but not of the larger domain of all substances, then the discovery of the πρὸς ἕν predication of being could not have helped him to overcome this limitation, unless he thought that being was said primarily of God and derivatively of other substances, which Owen never asserts. indeed, when he talks about the πρὸς ἕν signification of being, Owen adds, "Obviously I am concerned here only with the device by which A[ristotle] converts a science of substance into a science of to on hêi on, not with the quite different reasons for which he selects theology as the pre-eminent science of substance" (p.184 n14), which implicitly denies that being is said πρὸς ἕν of divine and non-divine substances. on what these "quite different reasons" might be, Owen keeps absolute silence

[48]note discussions in Iα, of Frede, upward and downward ways, individuating the science by the cause rather than the effect, of sufficient vs. necessary causes

[49]references to discussions of these chapters

is the only kind of "reduction" to substance that Aristotle promises to give or needs to give, and once this priority of substance to accident has been understood, "the question … τί τὸ ὄν is the question τίς ἡ οὐσία," with no further problem posed by accidents.[50]

In fact, much of the scholarly excitement about the relation between the knowledge of being and the knowledge of substance seems to be misplaced. I doubt that anyone seriously believes that Aristotle began by thinking that ousiology, poiotetology, and so on, were the ten maximally general sciences, and then discovered that he could vindicate the Platonic ideal of a universal science by bringing them all under the single science of ontology. The idea that Aristotle's discovery of the πρὸς ἕν predication of being allowed him to turn from "special metaphysics" to "general metaphysics" gets its persuasive power from the suggestion that being is said πρὸς ἕν primarily of divine substances and derivatively of material substances, so that the discovery of this πρὸς ἕν relation would allow the special science of divine things to be, at the same time, a general science of substances or of beings. This is the explicit view especially of Owens and Patzig and Frede (discussed in Iα1 above). But Aristotle never says, either in Γ2 or anywhere else, that being (or substance) is said πρὸς ἕν primarily of divine substances and derivatively of material substances (and thus that being is said even more derivatively of non-substances). Aubenque maintains that being and substance are said purely equivocally of divine and material substances, while Annick Stevens maintains that being and substance are said univocally of divine and material substances, and there is no real evidence to prove either of them wrong.[51] Aristotle may well never have considered the issue at all, and if he did, he must not have thought it was necessary for the project of the Metaphysics, for if he had, he would have said something about it somewhere. Certainly nothing in Γ addresses the issue. Γ1 says that archeology is ontology, and Γ2 identifies ontology with ousiology, but it does not identify archeology or ontology or ousiology with theology. There are texts in Γ which we could put together to infer that the ἀρχαί which are the objects of wisdom are eternally unchanging, and therefore that the science of them must be not physics but a theology or first philosophy distinct from physics, but Γ does not itself draw this conclusion (or at most does so briefly and tangentially); this belongs rather to the next stage of Aristotle's progressive determination of wisdom, and of the ἀρχαί that wisdom is about, in E1. In Γ he is arguing about what the ἀρχαί are causes of (of all beings, and more directly of substances), rather than about what kinds of things the ἀρχαί must themselves

[50]references. also note that Aubenque, like Owen, contrasts the Λ4-5 account of analogically identical ἀρχαί with Γ2's account of the πρὸς ἕν predication of being; except that while for Owen this is evidence that Λ is chronologically prior to Γ, written before Aristotle makes his fundamental discovery, for Aubenque it is evidence that Aristotle does not and cannot carry out the reductionist program of Γ2, and that this failure has led him to discover something deeper, the ontological structures of contingent existence presupposed in nature, in practical reasoning, and in dialectic. Aubenque, however, is aware that Λ5 says that the causes of all things are also the same in another way, because the causes of substances are the causes of all things; but he seems to think that this is a temporary relapse to Platonism, that it is incompatible with the analogical theory of ἀρχαί elsewhere in Λ4-5. but there is no incompatibility: wisdom is seeking numerically single eternal ἀρχαί, Λ4-5 goes through some attempts and argues that they do not work, that they yield only analogically identical ἀρχαί, and then isolates the one path that does work, which will be further pursued in Λ6-10. NB give cross-references to IIIβ1 and Iα1, avoid duplication with Iα1, esp. esp. p.6 n10 {which is perhaps too long to be a footnote, perhaps bring some up into the text--the point about the minimality of πρὸς ἕν, and perhaps about the relation between πρὸς ἕν and analogy, are there}

[51]NB avoid duplication with Iα1 n10. Stevens--check whether she's drawing on Leszl--just uses the fact of that all substances fall under the same category and that categories are supposed to be genera and thus univocal {but that would seem to show equally that substance is univocal to matter, form, and composite, which can't be true}; Aubenque apparently bases everything on the thesis of Iota 10 that corruptible and incorruptible things can't be the same in genus {which would seem to show that celestial and sublunar bodies can't be univocally bodies or substances}

be: in E and later books he will use the description of the ἀρχαί as eternally unchanging substances to narrow down which kinds of causes of being to pursue (only those causal chains which will lead up to eternally unchanging substances), but Γ has almost no discussion of causality, never even distinguishing material and formal and efficient and final causes. Neither in Γ nor in E does the issue of what substances are the objects of wisdom turn on a claim that being (or substance) is said πρὸς ἕν, primarily of some substances and only derivatively of others.

This does not mean that Γ has nothing to say about the relation between ousiology in general and theology. But it does not say what E says. The argument of Γ2 1003a33-b19 about the πρὸς ἕν predication of being establishes that the science of being quâ being is the science of substance, but it does not determine whether the science of substance is itself a single science, or rather several sciences falling under the same genus. Then, in what is most likely to be the correct order of the text, Aristotle writes:[52]

> Of every genus there is a single sense-perception and a single science, as grammar, being one, considers all vocal sounds; for this reason also to consider however many species of being [there are] belongs to a generically single science, and to consider the species belongs to the species [of the science].[53] And there are as many parts of philosophy as there are [kinds of] οὐσίαι, so that there must be first and a second among them. For being immediately has [i.e., divides into] genera;[54] for this reason the sciences too will follow these. For the philosopher is like the so-called mathematician: for it [sc. mathematics] too has parts, and there is a first and a second science and the others in sequence among the mathematical [disciplines]. (1003b19-22, 1004a2-9)

The genera of being, to which the different sciences correspond, cannot be the categories, since, as Aristotle has just finished arguing, the science of substance is the science of all beings in all categories; so the "genera" or "species" of being must be the different kinds of substance. The science of these kinds of substance is called philosophy. This concept of "philosophy" is important in Γ, and picks up on something in B#2-4. In B#2, on the assumption that the science of (the ἀρχαί of) οὐσία and the science of the ἀρχαί of demonstration are not the same, he asks which of these sciences is prior and so has the better claim to be wisdom: "for the axioms are most of all universal, and ἀρχαί of all things; and if it does not belong to the philosopher, to whom else will it belong to consider what is true and false in them?" (997a12-15). Here it is taken for granted that the philosopher is the person who studies οὐσία (where this may not yet

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[52]Alexander proposes to read 1004a2-9 after 1003b19-22; Ross and some others prefer to put 1004a2-9 before 1003b19-22 (which probably won't make too much difference to the sense); Jaeger (following Schwegler and Christ, he says, but check) takes 1003b22-1004a2 as a later insertion, so he reads 1003b19-22, 1004a2-9 as being originally continuous, as I have translated them here. Myriam Hecquet-Devienne, in her edition of Γ in Aristote: Métaphysique Gamma, Édition, Traduction, Études: Introduction, texte grec et traduction par M. Hecquet-Devienne, Onze etudes réunies par A. Stevens, prints the text in the order 1003b22-1004a2, 1003b19-22, 1004a2-9, 1004a9ff, thus again reading 1003b19-22, 1004a2-9 continuously. Louis-André Dorion in his article in the same collection gives a survey of views; he himself prefers to take 1004a2-9 before 1003b19-22

[53]text issue: in 1003b21 I read τοῦ ὄντος ὅσα εἴδη with E and the original reading of J, rather than τοῦ ὄντος ᾗ ὂν ὅσα εἴδη with A^bM and a second hand in J; (ii) τά τε εἴδη τῶν εἰδῶν means that the species of the science consider the species of being, not that the science considers the species of being "and the species of the species" (M agrees with A^b throughout this passage)

[54]in 1004a5 deleting καὶ τὸ ἕν with Ross and Jaeger (following Natorp)--although it is not a scribal error, but seems to have been added to justify the transposed text, or as Jaeger sees it the later insertion of 1003b22-1004a2

mean precisely "substance"), and it is not yet clear whether the study of the axioms also belongs to the philosopher, that is, whether the person who knows οὐσία also thereby knows the axioms. Who the philosopher is implicitly being opposed to here becomes clearer from B1 995b21-5: "about the same and other and like and unlike and contrariety, and about prior and posterior, and all other such things, about which the dialecticians try to inquire, inquiring on the basis of accepted opinions [ἔνδοξα] alone, to whom does it belong to consider all these?" (cited above). The question here is whether it belongs only to the dialectician to inquire into these things, and thus whether these things can only be examined on the basis of ἔνδοξα and never scientifically, or whether there is also someone else who treats them and can treat them scientifically--in which case the most plausible candidate is the philosopher, the person who studies οὐσία. When Γ speaks of "philosophy," it is in the sense determined by these passages of B; except that the introduction of the categories adds that philosophy is the science of οὐσία in the more precise sense of "substance," and therefore also knows (causes of) beings in other categories as well.[55] Philosophy so understood will immediately break up into sub-sciences, as mathematics does. So while Γ2 clearly gives an affirmative answer to B#3 taken as asking whether the different categories belong to the same science, it does not seem to give a clear answer to the aporia taken as asking whether the different genera of substance belong to the same science, and, if not, which genus belongs to wisdom. Γ2 determines wisdom as a science of substance, but does not further determine which science of substance it will be: will the different sciences of the different genera of substance each be equally and independently a kind of wisdom ("if [wisdom] is about οὐσία, is there one [science] about all οὐσίαι or are there several, and if several, are they all of a kind, or are some of them to be called wisdoms and the others something else," B1 995b10-13, partly cited above); or will wisdom be the science of the noblest kind of substance, having precedence over the other branches of philosophy as arithmetic has precedence over the other branches of mathematics (which is what Γ2 1004a2-9 would most immediately suggest); or will wisdom be the science of universal truths about all substances, having no one genus of substances for its particular domain, as universal mathematics is the science of universal truths about all quantities, having no one genus of quantities for its particular domain? E1 will give a clear programmatic answer to these questions, identifying wisdom with theology, the science of eternally unchanging substances (if there are such substances), and saying that this science "is prior and first philosophy, and universal in this way, by being first: and it would belong to this to consider being quâ being, both what it is and what belongs to it quâ being" (1026a30-32). Metaphysics Γ does not say this, but, as we will see, Γ3-8 take important steps in the direction of E1.

Unity and the other per se attributes of being

However, the immediate agenda of the rest of Γ is to resolve B#4, whether the science of οὐσία (which is also the science of beings in all categories) is also the science of the per se attributes of being, and B#2, whether the science of οὐσία is also the science of the principles of demonstration; as we will see, Aristotle thinks these issues are closely connected. There are in fact two issues about the per se attributes of being. B#3 had objected, against a single science studying "all [kinds of] οὐσίαι", that then a single science would also be able to demonstrate all συμβεβηκότα, including those that are the domains of many different sciences; but the answer is easy, that a single science can treat the per se attributes of being in general, without being able to treat those attributes, such as odd and even or male and female, that are per se attributes of some

[55] I take it that just this is what is said at 1003b16-19, which quote if not quoted elsewhere

particular domain of beings, and are treated by some particular science. B#4 raises the further issue whether the single science of being as such and the single science of its per se attributes are the same or different. Aristotle had asserted at the beginning of Γ1 that there is a single science which treats both of being quâ being and of its per se attributes, but the actual arguments of the sections we have examined so far (Γ1-Γ2 1003b22 and the probably immediately following Γ2 1004a2-9) speak only of the science of (and causes of) being quâ being, not of the attributes. The remainder of Γ2 argues that this same science also treats the per se attributes of being. The most important such attribute for Aristotle's argument is unity, and he shows that other attributes also fall under the science by deriving them in some way from unity and its contrary plurality; in effect, his criterion is that something is a per se attribute of being iff it can be derived from unity or plurality. If unity and so on are per se attributes of being, then there will not be one cause to X of the fact that X exists, and another cause to X of the fact that X is one: the knowledge of the causes of being to X will also allow us to demonstrate that X is one.[56]

Fundamental theses of the remaining part of Γ2 (1003b22-1004a2, 1004a9-1005a18) are that unity is a per se attribute of being, and that "being and unity are one and the same nature," if not as meaning the same then by necessary mutual implication (1003b22-6), so that "the οὐσία of each thing is one, not per accidens but [rather, it is essentially a one] in the same way that it is essentially a being [ὅπερ ὄν τι]" (b32-3). Here we must distinguish between a premiss that Aristotle takes over from Plato, and conclusion that he directs against Plato. Plato maintains, most emphatically in the Parmenides, that "if [anything] is, it must, so long as it is, be some one thing [ἕν τι], and cannot be nothing [μηδέν]" (Parmenides 144c4-5), so that "being is not deprived of unity nor unity of being, but these two are always coextended [ἐξισοῦσθον] across all things" (144e1-3; cp. 142e6-7 and Sophist 237c10-e2). Since this is a necessary consequence of what it is for something to be, Plato is saying (to put it in Aristotelian technical terms) that unity is a per se attribute of being. But the conclusion Aristotle draws is directed against the fundamental assumption of this part of the Parmenides, that "being and unity are not the same thing, but belong to the same thing" (Parmenides 142d2-3), so that being and unity are two distinct Forms in which all things participate, each coming to exist through participation in being, and each coming to be one through participation in unity. Against Plato, Aristotle says that "being and unity are one and the same nature" (Γ2 1003b22-3) and that "unity is nothing else apart from being" (b31-2). His argument in the present passage is that

> "One man" and "man" are the same, and "existing man" and "man," and the reduplicated expression "[a] man is [a] man" does not signify anything different from "[a] man is" (and clearly it is not separated either in coming-to-be or in passing-away), and similarly for "one"; so it is clear that the addition [of "one" or "existing"] in these cases signifies the same thing, and unity is nothing else apart from being [οὐδὲν ἕτερον τὸ ἓν παρὰ τὸ ὄν]. (1003b26-32)[57]

[56]note earlier treatment of the difficulties raised in B#3-4

[57]I follow the text apparently presupposed in Alexander's commentary (247,37-248,5). see Ross for a discussion of the problems with various readings (WARNING: Ross' report of William of Moerbeke is wrong, as is his report of EJ; Jaeger's report of EJ is correct; but Ross seems to be right, and Jaeger wrong, about what Alexander read). the usual objection to Alexander's reading is that "man is man" is a tautology, true even if there are no men. but Aristotle has just said that "man" and "existent man" are the same, so "man is man" should be equivalent to "man is existent man" and should thus imply "man exists." Aristotle says elsewhere that for X to be is for it to be X (or to be YZ, where "YZ" is the λόγος of X): so e.g. Metaphysics H2. My best guess is that Aristotle wrote τὸ ἔστιν ἄνθρωπος ἄνθρωπος καὶ ἔστιν ἄνθρωπος, which is apparently what Alexander read; that an ancestor of the α

Aristotle is arguing here that, since "one F" and "existent F" signify no more than "F," "one" and "existent" cannot signify two different things: "one" does not signify anything παρὰ τὸ ὄν, and neither "one" nor "being" signifies anything παρά the many things (man and so on) that they are predicated of. The only way to find a cause, to F, of its existing or of its being one, is to find the cause of there being an F, that is, the cause, to the thing which is F, of its being F. To take one case, Aristotle will argue in the De Anima that since, as we know from Posterior Analytics II, the οὐσία of F (the answer to "what is F?") is the cause of the fact that F is, and since "for living things, to be is to live, and the cause and ἀρχή of [living] is the soul," the soul must be the οὐσία of living things (De Anima II,4 415b12-14).[58] But the argument of Γ2 itself does not depend on what the οὐσία of (say) an animal, the cause of being to an animal, turns out to be: it may be an Aristotelian enmattered form or a separate Platonic Form or something else, but the point of the present argument is that in any case it cannot be a Form of being or unity.

Plato would agree that every F is a one existing F, but he would resist saying that "one existing F" signifies no more than "F". What is important for him is that we can search for the ἀρχαί of a given thing by "spelling it out" into its στοιχεῖα, the constituents of the λόγος of the thing, so that the analysis of a thing which is one existing wingless biped animal would yield a series of ἀρχαί, One and Being and Animal and so on. When Aristotle says that in "one existing F," "one" and "existing" signify nothing παρά "F", his intention is precisely to deny that unity and being can be constituents of the λόγος of a thing, in the way that animal and biped can. While he does not properly argue for this conclusion in the Γ2 passage, another passage supplies an argument that brings out a basic objection to Plato's procedure. In the seventh aporia of B, Aristotle argues:

> It is impossible for either unity or being to be a genus of the things that are: for each of the differentiae of each genus must necessarily be and be one. But it is impossible either for the species of a genus, or for the genus without the species, to be predicated of its own differentiae: so that if unity or being is a genus, no differentia will be or be one. (998b22-7)[59]

The basic point is that a genus, such as animal, cannot "be predicated of," or be a constituent in the λόγος of, one of its differentiae, such as biped: "for if animal were predicated of each of its differentiae, many animals would be predicated of the species, since the differentiae are predicated of the species" (Topics VI,6 144a36-b1). That is: if animal were part of the λόγος of biped, so that the constituents of biped were animal and X, then the constituents of man = (say) animal + biped would be animal and animal and X. This paradox depends on the assumption of Academic dialectic, that when A is (essentially) predicated of B, A is a constituent of B, so that

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tradition corrupted this to τὸ ἔστιν ἄνθρωπος καὶ ἄνθρωπος καὶ ἔστιν ἄνθρωπος, and that the readings of the extant witnesses to this tradition (something on the order of τὸ ἔστιν [ὁ] ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος) are attempts to eliminate the absurd repetition of ἔστιν ἄνθρωπος; and that an ancestor of the β tradition corrupted Aristotle's text to τὸ ἔστιν ἄνθρωπος καὶ ἔστιν ἄνθρωπος, and that the reading of A^bM (τὸ εἷς ἔστιν ἄνθρωπος καὶ ἔστιν ἄνθρωπος) is again an attempt to eliminate the absurd repetition. The next clause of the text shows that the word εἷς, which the two traditions insert in different places, cannot have been in the original at all. Asclepius cites the text as τὸ ἔστιν εἷς ἄνθρωπος καὶ ἄνθρωπος καὶ ὢν ἄνθρωπος, which looks like another attempt to solve the same problem that the α tradition is trying to solve. I find Ross' and Jaeger's reconstructions unconvincing. (I am not sure how to explain Syrianus; I am also not sure exactly what Syrianus read) … check Cassin/Narcy and Myriam … update from Princeton comments on Oliver

[58] references to further discussion

[59] refer to treatment in Iβ3

if A is predicated of B by two different routes, two A's occur as constituents of B. It is perhaps not entirely absurd that animal should appear twice in the λόγος of man; but if, once we have spelled out biped as animal + X, X must again be spelled out as animal + Y, and Y again as animal + Z, then it is clear that we have an absurd regress. Aristotle is here applying this argument, in cryptic shorthand, to the case of being or existence (and the parallel case of unity), on the assumption that (say) being is a genus and existent animal is a species, composed of the genus, being, and the differentia, animal. It is absurd to say that this differentia does not itself exist, and that the species is composed of existence and of something non-existent. But if being is always a constituent of the differentia, then we have an infinite regress, spelling out X = being + Y, Y = being + Z, and so on. The only alternative is that (eventually) we reach some X which exists without having being as a constituent (and, likewise, an X which is one without having unity as a constituent). But if something can exist and be one without having being or unity as a constituent, then there was no reason to posit being or unity as constituents of the original object in the first place.[60]

For Aristotle, this regress brings out the absurdity of positing a being-itself and a one-itself as constituents of the λόγοι of things and causes to the things of the facts that they exist and are each one. Nor is this regress simply an absurdity which a clever opponent of Plato's could deduce from premisses that Plato must admit. On the contrary, Plato himself deduces such a regress in the Parmenides. What exists and is one has (at least) two parts, being and unity: but "of these two parts of the one being, unity and being, unity is not deprived of a part of being, nor being of a part of unity. And each of the parts again contains both unity and being, and even the smallest part turns out to be [composed] of two parts again, and so ad infinitum, whatever part arises always contains these two parts, for unity always contains being and being always contains unity: thus necessarily two things always arise, and there is never [just] one. So the one being would in this way be infinite in multiplicity" (Parmenides 142d9-143a3, rewriting the questions as assertions). For Plato, apparently, this is just an interesting consequence of positing the mutually participating Forms of being and unity, and helps to show how other things, including parts and wholes and infinitely divisible continua, can be derived from these ἀρχαί; for Aristotle, it is a reductio ad absurdum of Plato's starting-point.

Nonetheless, the second part of the Parmenides is the only systematic pre-Aristotelian attempt at a science of being and unity, and it helps to guide Aristotle's agenda in Γ2. Aristotle argues in Γ2 that philosophy, the generically single science of all οὐσίαι and thus of all beings, in addition to treating unity (1003b22-33), also treats "the species of unity … I mean e.g. the same [ταὐτόν] and like [ὅμοιον] and other such [attributes]" (1003b33-6); he adds that these species of unity correspond to species of being (ibid.), i.e. presumably to the categories, so that sameness is oneness in substance, similarity is oneness in quality, equality is oneness in quantity, and so on. Next, "since it belongs to a single science to consider opposites"--whether these are contraries,

[60]this is closely connected with criticisms of Plato (or other Academics) that Aristotle makes elsewhere: if unity or being is an ἀρχή, from which (with other ἀρχαί) all things are constituted, then things will have to be constituted out of being and what-is-not-being, and out of unity and what-is-not-one. so in B#11, and texts in MN. some of these passages have in mind the second part of the Parmenides or something very like it. the third hypothesis of the Parmenides derives things other than the one from unity and a nature entirely deprived of unity (which is infinitely divisible, since none of its parts can be one). possibly Plato also wants to derive existing things other than being-itself from being-itself and something non-existent: apart from the notorious question of the status of the one of the first hypothesis, relevant are the non-existent one of the fifth hypothesis and the non-existent στοιχεῖα of Socrates' dream in the Theaetetus. Aristotle in Metaphysics N2 attributes to Plato a view of this kind, but it is not clear what source he is drawing on. cross-references to your other discussions of these themes

contradictories, possession and privation, or correlatives--"and plurality is opposed to unity" (1004a9-10), it will also belong to the same science to consider plurality. And thus also "other [ἕτερον] and unlike and unequal" (1004a18), the opposites of the species of unity, will belong to the same science; and not only otherness, which is a negation of sameness, but also difference [διαφορά], which is a privation of sameness (since X can differ from Y only if they are in the same genus, so that they could have been the same, whereas X is still other than Y if they are not in the same genus), and contrariety, which is complete [τελεία] difference, or complete privation of sameness.[61] Later Aristotle adds rest and motion (1004b27-9) as well. He assumes as agreed a "reduction" or "tracing back" [ἀναγωγή] of all these attributes to the primary contrariety of unity and plurality, or to the even more basic opposition of being and not-being (so 1003b35-1004a2, 1004b27-9, 1004b32-1005a1, referring at 1004a1-2 to his lost Selection of Contraries for a fuller discussion);[62] "almost everyone agrees that the beings and οὐσία are composed out of contraries," where "the ἀρχαί of the contraries are the one and plurality" (1004b29-1005a5), and so the science of this contrary pair of ἀρχαί is the science of all the things that are. All of these pairs of contrary attributes, as well as the project of deriving them from being and unity and their contraries, are in the Parmenides. The second hypothesis of the Parmenides,[63] assuming unity and being participating in each other, argues that this one-that-is has a whole series of contrary attributes (notably, it is whole and parts, one and many, limited and unlimited, at rest and in motion, same and other, like and unlike and even contrary, equal and unequal, large and small); the third hypothesis, assuming that there are others that participate in the one, and inferring that the intrinsic nature of these others must be plurality and indeed infinite plurality, argues more briefly that these others, once they come to participate in the one, will have each of the standard list of contrary attributes. And Plato's positing in the Parmenides of a being-itself and one-itself as first causes of being and unity to everything else would be paralleled by his positing in the Sophist of Forms of being, sameness, and otherness, and by his positing in oral teaching of the One as a cause of all unity and sameness and of a material ἀρχή as a cause of all contrariety and difference (whether because it is contrary to the One, or because it itself consists of a pair of contraries, the large and the small). Aristotle rejects all of these accounts as inadequate attempts to grasp the causes of beings through dialectic alone. He denies that the distinction between being and unity is sufficient to generate the complex series of attributes that Plato deduces for the one-that-is, and he denies that there are any Forms of unity and being, both because "one existing F" signifies nothing παρά F, and because being and unity, and also plurality and so on, are said

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[61] there are a number of textual issues here, for which see most recently Myriam (check also Cassin-Narcy), d work through. Jaeger double-brackets 1004a10-16, and the passage is certainly a digressive explanation, provoked by the mention of ἀντικείμενα, explaining the different kinds of ἀντικείμενα and how they give us otherness and difference. even if it's an afterthought, it does correctly represent Aristotle's thinking on the issues (as we know it from Δ9-10 and Iota), and something like this is logically needed. 1004a16-17 τῷ δ᾽ ἑνὶ πλῆθος ἀντίκειται repeats from 1004a10, before the digression, and Ross and Jaeger bracket it (Cassin-Narcy and Myriam print it). I would print τῷ δὴ ἑνὶ πλῆθος ἀντίκειται, as resuming from before the digression. in addition there are textual problems within 1004a10-16, notably in the phrase τῷ ἑνὶ ἡ διαφορὰ πρόσεστι παρὰ τὸ ἐν τῇ ἀποφάσει (a13-14), which Ross and Jaeger dagger: the problematic part is τῷ ἑνὶ, and I've wondered whether it should be e.g. τῷ γένει, but I'm not sure what ἕν might mean--see the use at the beginning of a12--and I'm not sure what πρόσεστι to what: this is connected with the issue at the beginning of Z4. also at 1004a13 note the issue about ἐκεῖνο or ἐκείνῳ, on which note Myriam's correction of Jaeger: apparently all manuscripts (but not Alexander) have the dative

[62] ἀνάγειν is the standard term for reducing things in any domain to their ἀρχαί, and Aristotle indeed speaks of ἀρχαί here. note other references to the Selection of Contraries, and dubious attempts to identify it

[63] cite page-numbers for the second and third hypotheses, maybe have some general scheme of how you (following Cornford, I suppose) are dividing up the dialogue

non-univocally of things in different categories and therefore cannot exist παρά the main categories (both of these objections would still hold even if the theory of Forms were generally true). It remains possible that there is some single thing which is a cause of being to all beings, or a cause of unity to every being, or a cause of the fact that there is a plurality of beings, and if there is such a thing it will certainly be an ἀρχή; but to discover whether there is such an ἀρχή requires a careful causal investigation, first distinguishing the different senses of being and unity and plurality and so on, then examining the different kinds of causes of these effects, to see whether any of the causal chains leads up to a universal first cause. This project occupies the rest of the Metaphysics.

In Γ2 Aristotle calls in particular for a study of the attributes of being: in the case of each attribute "since everything is referred to the first [signification of that attribute], as everything which is one is said in relation to the first one, we must say that it holds also in the same way for same and other and contraries: so that after dividing in how many ways each [attribute] is said, we must answer in relation to the first thing in each predication [i.e. the first signification of each attribute] how [the other significations of that attribute] are said in relation to it: for some things will be said through having [ἔχειν] it, others through making/doing [ποιεῖν] it, and others through other such figures [τρόποι]" (1004a25-31).[64] (He later adds among the attributes which the science will examine, alongside "contrary or complete or one or being or same or other"--presumably "complete" gets in because of the characterization of contrariety as "complete difference"--also "prior and posterior, genus and species, whole and part and others of this kind," 1005a11-18.) Γ2 is not itself a sample of the science of the attributes of being, but merely a programmatic announcement of such a science. The texts we have just cited are looking forward in the first instance to Metaphysics Δ, which does indeed give an account of the many senses of being (Δ7), one and many (Δ6), same and other and different and opposite and contrary (Δ9-10), complete (Δ16), prior and posterior (Δ11), genus (Δ28), whole (Δ26) and part (Δ25), typically noting a primary signification of each attribute and explaining how the other significations arise in relation to that primary signification (for discussion of Aristotle's procedure in Δ and of doubts about whether Δ is an intended part of the Metaphysics, see Iγ1 below). But Δ too is not really a sample of the promised science, merely a necessary preliminary, since Δ does not investigate the causes of being and its attributes (although Δ1-3, on ἀρχή, cause, and στοιχεῖον, are again intended as a necessary preliminary to such an investigation). As EZHΘ examine the causes of being, so Iota examines the causes of unity and the other attributes of being; and Iota helps to show what kind of investigation Aristotle is calling for in Γ2 (for detailed discussion of Iota see Iγ2 below).

Thus Iota 1-2 give a systematic discussion of unity; Iota 3-4 discuss plurality and the attributes "traced back" to unity and plurality in Γ2, sameness and otherness, likeness and unlikeness, equality and inequality, difference and contrariety as complete difference; Iota 5-10 apply the results of Iota 1-4, notably (in Iota 7-8) using Iota 4's understanding of contrariety to draw conclusions about other kinds of difference. Aristotle's aim in these chapters is not to say what unity and so on are, or to distinguish their different senses (for he has done this already in Δ), but rather, building on the distinctions of Δ, to examine the claims of the one as an ἀρχή and of contraries as ἀρχαί. Indeed Iota, more than any other book of the Metaphysics except M and N, moves against a background of Academic theories of the ἀρχαί, and can be interpreted only in terms of Aristotle's polemic against different Academic theories. The chief results of Iota are

[64]I have translated "κατηγορία" as "predication": it is impossible to translate it as "category." Ross' translation essentially agrees with mine, check others. cross-reference to discussion of the same in Iγ1

negative. The aim of the examination of unity (Iota 1-2) is to answer the question of B#11 whether there is a one-itself (the aporia explicitly recalled Iota 2 1053b9-16) by showing that the one is something different in each genus, so that there can be no one παρὰ τὰ γένη.[65] Similarly, the chief result of the examination of difference and contrariety is to show that things can differ or be contrary only within a single genus, and that the source of difference to things in a genus is a contrariety peculiar to that genus, and not a difference-itself or first contrariety παρὰ τὰ γένη.[66] This does not mean that, in calling for an investigation of unity and the other attributes of being, Aristotle's aim is exclusively to refute the claims of the Parmenides and of other Academic accounts of the ἀρχαί. Iota itself says explicitly that the one (Iota 1 1052b32) and the contraries (Iota 7 1057b22-3) are ἀρχαί within each genus. But these are ἀρχαί only within their genus, and are discovered by the appropriate particular science, not by wisdom. And since the essence of these ἀρχαί is not unity or contrariety, but something else, peculiar to the genus, of which unity or contrariety are predicated, we cannot discover them, as Plato and the Academics hoped to, by reflecting on the nature of unity or otherness or inequality, but only by examining the causes of things peculiar to the genus. It may indeed also be true that metaphysical ἀρχαί, the ἀρχαί absolutely, are causes of unity or of other attributes of being. But again we will not reach them by general reflections on unity or otherness, but only by examining the causes of substances; and what we will reach in this way is not a one-itself or any other special cause of unity, but just a cause of being, which in causing being also causes unity. And Aristotle will conclude in H6 that, in order to find causes of being or of unity to a thing beyond the thing itself, we must look to the efficient causes of the thing, giving up on the kinds of ἀρχαί of being or unity that we could hope to reach by dialectic.

The science of the attributes and the science of the axioms

As I have stressed above, Γ2 argues that the attributes of being are treated by philosophy, the generically single science of substance, not that they are treated specifically by first philosophy or theology; and likewise Γ3 argues that the axioms or principles of demonstration are treated by philosophy, not that they are treated by first philosophy. Nonetheless, Γ also serves to support the claim that the science of being and its attributes and the axioms is first philosophy, a claim that will be made explicit in E. When Aristotle says that the attributes or the axioms are treated by philosophy, he means in the first instance that they are not treated merely by dialectic or sophistic, which treat the same domain as philosophy, but unscientifically (1004b17-26): "for if not it does not belong to the philosopher [to investigate the attributes of being], who will investigate whether Socrates and Socrates seated are the same, or whether one thing has [only] one contrary, or what 'contrary' is or in how many ways it is said?" (1004b1-4). This is answering B1 995b21-7, "about the same and other and like and unlike and contrariety, and about prior and posterior, and all other such things, about which the dialecticians try to inquire, inquiring on the basis of accepted opinions [ἔνδοξα] alone, to whom does it belong to consider all these, and also the attributes of these very things, i.e., not only what each of these [sc. sameness, otherness, contrariety etc.] is, but also whether one thing has [only] one contrary?" (partly cited above). Dialecticians would at least implicitly use "one thing has [only] one contrary" as a premiss, and might well make it an explicit theme of discussion (it is mentioned as

[65] note also Metaphysics Λ on why God is not one, but only simple

[66] and Iota 5 and 6 are devoted to quite specific attacks on Academic theories of unity and plurality, or the equal and the great-and-small, as pairs of contrary ἀρχαί.

an explicit thesis for dialectical discussion at Topics VIII,3 158b24-8), because common strategies in dialectic are to argue that X is Y because the contrary of X is the contrary of Y, or that X is not Y because the contrary of X is not the contrary of Y: these strategies break down if a single thing can have two contraries.[67] Likewise, "whether Socrates and Socrates seated are the same" is a special concern of the sophists, "for almost all of the arguments of the sophists are about accidents, whether the musical and the grammatical, and musical Coriscus and Coriscus, are other or the same" (Metaphysics E2 1026b15-18, cp. Sophistical Refutations c22 178b39-179a1), since the sophist can reduce a respondent to apparent absurdity by asking whether Coriscus and musical Coriscus are the same person or two different people, and refuting either answer. Aristotle insists that since contrariety and sameness are per se attributes of being, it belongs to philosophy to give a scientific account of these presuppositions of dialectic and sophistic. Furthermore, the axioms or principles of demonstration, such as the principle of noncontradiction, which are also presupposed by dialectic and sophistic, will also be treated scientifically by philosophy: the fact that all sciences use them does not mean that they belong to no science, rather "everyone uses them because they belong to being quâ being, and each genus is" (Γ3 1005a23-5). Aristotle thus treats axioms such as the principle of noncontradiction as closely analogous to the universal attributes of being: he says that such axioms ὑπάρχουσι to all things quâ being (1005a27-8), just as he had spoken of the attributes in Γ1 as ὑπάρχοντα to being as such (1003a21-2). (We might spell this out by saying that the attribute "does not both have and not-have the same attribute," or perhaps rather "does not both belong and not-belong to the same thing in the same way," cf. Γ3 1005b19-20, holds true of every being. Conversely, the attributes of being should give rise to principles of demonstration such as "things that are contrary to the same thing are the same" or "things that are the same as the same thing are the same.")

Furthermore, Aristotle thinks that some of the philosophers have in fact examined these attributes or axioms belonging to being quâ being. He just thinks that they have not done so successfully, and need to be corrected:

> For this reason [sc. the fact that the axioms apply to all beings universally] none of the particular investigators tries to say anything about them, or whether they are true or not,[68] neither a geometer nor an arithmetician, but some of the physicists did, and it was reasonable for them to do this: for only these [sc. the physicists] thought they were investigating about all of nature and of being. But since there is someone even above the physicist (for nature is some one genus of being), the investigation of these things too would belong to the person who considers universally and about the first [kind of] οὐσία;[69] for physics too is a wisdom [σοφία τις], but not the first. (Γ3 1005a29-b2)

Aristotle's aim here is to further determine the kind of philosophy that understands the attributes and the axioms. For those who grant that there is such a philosophy, the immediate inclination is to identify it with physics, and nothing Aristotle has said in Γ so far would exclude that

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[67] maybe note example Protagoras 332, temperance is wisdom because each is contrary to folly

[68] reading with E, and what seems to be the original reading of the a tradition, ἢ εἰ ἀληθῆ ἢ μή. or, without the initial ἢ (so A^bM--M has only trivial variations from A^b in this passage), take this as "lilies of the field" construction, "to say anything about whether they are true or false."

[69] Jaeger's deletion of τοῦ at 1005a35 has its attractions, but the transmitted text can bear the same meaning. Jaeger's insertion τοῦ <περὶ τὸ> καθόλου earlier in the same line is catastrophic

identification: even Γ2 1004a2-9, speaking of "a first and a second science and the others in sequence" in philosophy as in mathematics, does not specify whether this first philosophy is something beyond physics, or is physics or some privileged part of physics (say the study of the heavenly bodies or of atoms and the void). Now if there are also eternally unchanging substances, which will not belong to the domain of physics, then the physicists are wrong to think that they are "investigating about all of nature and of being": they will not be able by the methods of their discipline to determine what belongs universally to all beings, and the attributes of being and the axioms should instead by investigated by "someone even above the physicist." But this could be taken in two different ways.

Aristotle is in part drawing on an analogy with universal mathematics. At the beginning of Γ3 he asks "whether it belongs to a single or to another science [to consider] about what in mathematics are called axioms and about οὐσία" (1005a19-21), and he answers yes: "what in mathematics are called axioms" mean most obviously the propositions that Euclid will call "common notions" but that the Posterior Analytics calls "axioms," propositions not specific to geometry but applying to all quantities universally, such as "when equals are taken away from equals, the remainders are equal" (Euclid Elements I common notion 3; cited in the Metaphysics K parallel to Γ3 1005a19ff, K4 1061a19-21). But Aristotle's main concern in Γ3 is with even more universal propositions such as the principles of noncontradiction and excluded middle, applying not only to all quantities but to all beings and presupposed in the demonstrations of all sciences, not just the mathematical disciplines. The analogy of universal mathematics, existing alongside the particular mathematical disciplines, suggests that there may be an even more universal philosophical discipline, considering the principles of demonstration and whatever can be derived from them; like universal mathematics, it would have no particular objects of its own. If the person "even above the physicist" who considers the principles of demonstration is a universal philosopher analogous to the universal mathematician, whose results are applicable equally to eternally unchanging substances and to heavenly and sublunar bodies, then the only harm that would be done by treating the principles of demonstration under physics would be a lack of full generality if it turns out that there are also unchanging substances. But this is not Aristotle's view. Rather, he thinks that the investigation of the axioms would have a contrary result if it turned out that there were only changing things, and he thinks that the physicists who have investigated the axioms under the assumption that there are only changing substances have in fact come to the wrong conclusions. "There are some who both say themselves that the same thing can both be and not be, and say that it is possible to believe this; many of the physicists also take this position" (Γ4 1005b35-1006a3); the physicists came to this conclusion because "they were examining the truth about the beings, but they thought that only the sensibles were beings, and in these there is much of the nature of the indeterminate, and of what exists in such a way as we have said; and thus they speak reasonably but not truly" (Γ5 1010a1-5). So for understanding the axioms it will be important, not just to discuss being in full generality in case there turn out to be some unchanging beings, but also to investigate whether there are unchanging substances or not. So if there are such substances (and of course Aristotle thinks there are), the understanding of the axioms will belong neither to physics, nor to a discipline analogous to universal mathematics, but to first philosophy inasmuch as it establishes the existence of unchanging substances. (Presumably first philosophy will also establish some kind of causal dependence of other things on unchanging substances, and this will help to understand the ways that the axioms apply to these other things. If changing things were not governed by unchanging things, so that "there will not be an ἀρχή and order and coming-to-be and the

heavenly things," Λ10 1075b25-6, then perhaps the physicists would be right and the axioms would not apply to changing things at all; as it is, the axioms will apply to changing things but with more qualifications than to unchanging things, e.g. perhaps the same attribute cannot both belong and not-belong to an unchanging thing at all, and it cannot both belong and not-belong to a changing thing at the same time.) So when Aristotle says that "there is someone even above the physicist … the person who considers universally and about the first substance," since "nature is some one genus of being" and "physics is a wisdom, but not the first," the person above the physicist, the practitioner of the first wisdom, is not someone who considers a more universal genus than nature, but someone who considers a more noble or causally prior genus, "the first substance." When Aristotle says that this person considers universally, he must mean that in considering the first causes (and in establishing knowledge of them through their effects) he also knows lower things--that, as E1 says explicitly, "if there is some unmoved substance, [the knowledge of] this is prior and first philosophy, and universal in this way, by being first: and it would belong to this to consider being qua being, both what it is and what belongs to it qua being" (E1 1026a29-32). Thus the relation between "the first wisdom" and physics would be not so much like the relation between universal mathematics and arithmetic or geometry, as like the relation between arithmetic and geometry: the first science has its own domain, but because that domain is somehow causally prior to the domain of the second science, it will belong to the first science to give something like a causal understanding of propositions which must be accepted as unproved principles within the second science. But the program of searching for wisdom based on its more precise determination as the science of eternally unchanging separately existing things must wait until Metaphysics E; and the determination of what causal chains lead up to such ἀρχαί will take the rest of the Metaphysics.

In the remainder of Γ Aristotle offers a sample of what a science of the axioms might look like. Its value is not in the argumentative support he gives for the axioms--they do not need to be argued for, since Aristotle thinks it is impossible to disbelieve these truths, although some people may not know how to resolve the difficulties against them, and others may deny them to display their dialectical powers. The value is rather in the meta-argument that the understanding of the axioms is inseparably bound up with the understanding of οὐσία and specifically with the understanding of unchanging οὐσίαι. Γ3-8 thus function as a protreptic to the investigation of unchanging substances announced in E; but the later books of the Metaphysics never refer back to Γ's treatment of the axioms,[70] and there would be no logical harm if these chapters were missing. As his sample axioms Aristotle chooses the principle of noncontradiction, "the same thing cannot simultaneously both belong and not-belong to the same thing in the same way, and whatever other [qualifications] should be added, let them be added, in view of the dialectical objections [λογικαὶ δυσχέρειαι]" (Γ3 1005b19-22) and, later and with much less stress, the principle of the excluded middle, "there cannot be anything in between a contradictory pair, rather any one thing must necessarily be either affirmed or denied of any one thing" (Γ7 1011b23-4): both of these principles, which we might state in more formally logical terms, are for Aristotle part of the theory of opposites.[71] Aristotle's formulation of the principle of noncontradiction is a development of a principle stated in the Republic, put there in terms of contraries rather than contradictories (denying "that something, being one and the same, would simultaneously suffer or be or do contraries in [κατά] the same [part or aspect?] and in relation to the same thing," IV 436e8-437a2; Aristotle too says that "since it is impossible for a

[70] except, of course, that there is a parallel in K

[71] recall four kinds of opposites; ἔμμεσα and ἄμεσα

contradictory pair to be true simultaneously of the same thing, it is clear that contraries also cannot belong simultaneously to the same thing," Γ6 1011b15-18). Aristotle also takes from the Republic the insistence that it is psychologically impossible to believe two contradictories--the Republic says "contraries"--simultaneously (Γ3 1005b23-5, Republic X 602e8-9),[72] and he uses this to support his claim that the principle of noncontradiction is "the most stable" [βεβαιοτάτη]. "For that principle is the most stable of all, about which it is impossible to be deceived" (1005b11-12): he means, not that we cannot believe it falsely, but that we cannot fail to believe it. A proposition that is "most stable" in this sense will be first in the order of demonstration, since it need not and cannot be confirmed (made more stable) by appeal to any other proposition, while other propositions can be confirmed by appeal to it. And since stability is, according to a common maxim, what differentiates knowledge from opinion,[73] this proposition will also be the "most knowable" and a source of knowability to the others, as a first principle should be; and, as Aristotle says (1005b32-4), this is why people demonstrate other propositions by reductio ad absurdum, "reducing" [ἀνάγειν] them to the principle of noncontradiction so as make them known on the basis of it. Aristotle also says that a principle which, like the principle of noncontradiction, is presupposed by any other knowledge, is "unhypothetical" (1005b14), presumably because (as in Republic VI 510b4-511e5 and VII 533a8-e2) a hypothesis is a step on the way to the first principle, waiting to be converted into knowledge when the first principle is reached, whereas there is nothing that could be known independently of this proposition and so convert this proposition into knowledge. Plato in these texts is claiming for dialectic the power to grasp the "unhypothetical principle" (VI 511b6-7), whereas Aristotle is claiming this power instead for the science of οὐσία, for philosophy by contrast with dialectic. Plato does not, of course, identify this "unhypothetical principle" with the principle of noncontradiction (although Aristotle would say that that is the fundamental axiom from which dialectic proceeds): he is thinking not of a proposition but of a thing, the Form of the good, since he (unlike Aristotle) thinks that dialectic gives knowledge of a domain of οὐσίαι, the Forms, and that its scientific starting-point is the Form of the good, which is the ἀρχή of these οὐσίαι. Aristotle wants to say, not that dialectic can grasp ἀρχαί of οὐσία (still less of eternally unchanging οὐσία), but rather that philosophy has knowledge both of the ἀρχαί of οὐσία and of the propositional ἀρχαί presupposed by dialectic, and that we cannot fully know these propositional ἀρχαί without knowing the ἀρχαί of οὐσία at the same time. But the thought that that attitudes toward universal axioms necessarily correspond to attitudes toward οὐσία, and in particular that the axioms of dialectic hold only if there are eternally unchanging οὐσίαι, is Platonic enough. Aristotle's arguments in Γ4-8, both for the principles of noncontradiction and excluded middle, and for the claim that attitudes toward these principles necessarily go with corresponding attitudes toward οὐσία and specifically toward unchanging οὐσία, are mostly fairly obvious adaptations of things in Plato. They are not brilliant arguments, and seem to be given to us in a rather early stage of composition: too many arguments, each insufficiently developed, are piled up in succession, and some of the arguments seem to lose their force when detached from the presuppositions they had in Plato. Furthermore, many of the arguments seem designed to refute only the most extreme form of the opponent's view, e.g. not that some pair of contradictories are true together but that all contradictories are true together and thus that all propositions are true,

[72]Aristotle adds the argument that the opinion that p and the opinion that not-p are themselves contrary states of the opiner: the opiner may be in neither state, but cannot be in both simultaneously, 1005b26-30 (parallels? De Interp?)
[73]references in various definitions of knowledge, note ambiguity of βέβαιον (can't be shaken from the belief, can't go wrong as long as you hold it?)

so that even if the arguments succeed they will not establish any seriously controversial doctrines or refute any historically plausible opponents, but only illustrate general strategies that might work against such an opponent. What interests us here is what conception of his project in the Metaphysics led Aristotle to include such arguments at all, and to hunt in Plato for argumentative materials to support these axioms and their connections with the issues about οὐσία.

Γ4-8: arguing for the principle of noncontradiction

There is, as Aristotle recognizes, something peculiar about the enterprise of arguing for the principle of noncontradiction. We can't argue for it directly, since (as he has said in Γ3) there are no better-known propositions from which we could infer it. And since (as he has also said in Γ3) indirect proof, reductio ad absurdum, turns on assuming the principle of noncontradiction, it seems that we can't argue for it indirectly either. Aristotle's solution is that the opponent can be refuted on his own terms as long as he says something--and if he says nothing, like Cratylus according to Γ5 1010a10-15, then he is "like a plant" (Γ4 1006a14-15) and his claims of wisdom are undermined. When the opponent says that P, you cannot refute him simply by showing that his view would entail that not-P, since the opponent is happy to accept P and not-P together, but if you can show him that his view would entail that P does not mean or signify [σημαίνειν] anything, to himself or to anyone else, then again his claim to wisdom will be undermined. Aristotle is taking this strategy of argument from the Theaetetus, where those who maintain that knowledge is sensation and who also maintain Heraclitus' thesis that all things are in motion are forced to admit, not just that the thing which is white does not remain white for the time it takes us to say the word "white," so that it is no more white than not-white, but that the quality of whiteness and the act of seeing likewise do not remain, so that they are no more whiteness than not-whiteness and no more seeing than not-seeing (182d1-e6). But then, when we ask what knowledge is and they say that it is sensation, what they are saying to be knowledge is no more knowledge than not-knowledge, so that "every answer, about whatever [question] one answers, is equally right" (183a5-6), that it is thus or that it is not thus--except that neither "is" nor "thus" is legitimate (183a6-b5). The point is not just that the opponent's thesis that knowledge is sensation (when filled out by the "Heraclitean" theory of sensation) winds up contradicting itself, but that it winds up undermining our ability to signify anything with our words, since there is no F-ness that would be signified by the word "F" any more than by the word "not-F," so that it would be not just false but meaningless to say that anything is white or seeing or knowing. Aristotle too insists that the opponent's position becomes incoherent when applied to F-nesses. The opponent says that the object which is ordinarily called F is both one and many, and has contradictory or contrary attributes, that in addition to being F it is also not-F. Aristotle is willing to concede all these points at least for purposes of argument, rather as the character Socrates does in conceding Zeno's arguments in the Parmenides (128e5-130a2). Socrates says there that one thing can have many predicates by participating in many forms, and can even participate in contrary forms, F-ness and not-F-ness, but that these forms themselves remain distinct, and F-ness cannot be not-F. Aristotle grants that "nothing prevents the same thing from being man and white and myriad other things" (Γ4 1007a10-11) and even for purposes of argument that "the same thing is man and not-man" (a16-17), but "being-a-man cannot signify the same thing as not-being-a-man" (1006b14-15, cf. 1007a23-5). If the word "F" merely signified the things of which it is truly predicated, i.e. the things which are F, then "man" and "white" and even (or so Aristotle is willing to concede) "not-man" could signify the same thing, but then "S is a man" and "S is

white" would mean the same thing; "F" must signify something more, the F-ness, so that those who say, not just that S is F and not-F, but that F-ness itself is F and not-F, not only "abolish οὐσία and essence" (1007a20-21), but also abolish signification. As in the Theaetetus, this refutation works only against radical opponents, not against those who say only that ordinary objects are both F and not-F.[74]

Aristotle also takes from the Theaetetus and Sophist the idea that there is a fundamental divide among philosophers about being or οὐσία, with the Eleatics and Plato maintaining the existence of eternally unmoved οὐσία, and all other philosophers maintaining more or less explicitly that everything is in motion; and, also, that this dispute about unmoved οὐσία is correlated with an epistemological dispute, and also with a dispute about whether anything is any more F than not-F. Aristotle draws a number of connections between these issues. Thus at the beginning of Γ5, after discussing the thesis that contradictories are always true together, he says "the λόγος of Protagoras too proceeds from the same opinion,[75] and these [sc. this thesis and the λόγος of Protagoras] must either both be or both not be [true]: for if all the things that seem and appear [τὰ δοκοῦντα … καὶ τὰ φαινόμενα], they must all be simultaneously true and false: for many people believe things contrary to each other [i.e. to other people], and they think that those who don't have the same opinions that they do are in error [διεψεῦσθαι]: so that the same thing must both be and not be" (1009a6-12). "The λόγος of Protagoras" seems to be almost a technical term (it occurs here and at Γ4 1007b22-3 and Θ3 1047a6-7), intended to recall a well-known paradoxical thesis: as the parallel K6 1062b12-19 makes clear, what Protagoras actually said was that man is the measure of all things, but Aristotle takes him to mean that everything which appears or seems is true. Aristotle thinks that it is plausible that all sensations are true, at least when we are sensing the proper object of each sense (e.g. seeing colors rather than seeing sizes and shapes and distances), and that Protagoras, by failing to draw distinctions between different kinds of cognitions, extends this to the progressively less plausible theses that all sensations even of non-proper objects are true, that all appearances [φαντασίαι or φαινόμενα, the things that φαίνεται to us] are true, and finally that all opinions [δόξαι or δοκοῦντα, the things that δοκεῖ to us] are true. This assimilation of all cognition to sensation would be most plausible for someone who takes sensible things as the paradigm cases of being, and thus takes sensation as the paradigm case of cognition; so in this way someone who starts by believing that there are no unmoved beings, and thus no non-sensible beings, is likely to be led to Protagoras' epistemological thesis. This epistemological thesis will lead to the logical thesis that contradictories are true together, since for almost every proposition P there is someone who believes it, so that if every proposition that someone believes is true, both P and not-P will be true. Aristotle also suggests ways that physical theses can lead to "logical" conclusions without going by way of Protagorean epistemology. "From the sensibles … from seeing that contraries come-to-be out of the same thing [they came to the conclusion] that contradictories and contraries ὑπάρχειν [are present or hold true] simultaneously" (Γ5 1009a22-5), where this compresence of opposites can be regarded either as logical or as physical; "there also follows the

[74]it should be said emphatically that neither the Theaetetus nor Metaphysics Γ involves a defense of the substantial reality of medium-sized objects à la Strawson--Plato and Aristotle concede the denial of the substantiality of medium-sized objects for the purposes of the argument, and this is not what yields the contradiction. when Aristotle talks about "abolishing οὐσία and essence" he means the essence of whiteness as much as the essence of man. when he gives what might be called a transcendental argument from the possibility of signification, he means not that you and I must be able to refer to the same substance in order to attribute contradictory predicates to it, but rather that the predicate-term must be able to signify some essence

[75]here he says δόξα, in a parallel a bit further down διάνοια.

[thesis] of Anaxagoras, that all things are together, so that nothing is really one thing [sc. but is always mixed with its opposite, and with everything else]" (Γ4 1007a25-6). "They were examining the truth about the beings, but they thought that only the sensibles were beings, and in these there is much of the nature of the indeterminate, and of what exists in such a way as we have said; and thus they speak reasonably [εἰκότως, i.e. appropriately to the sort of object they are considering] but not truly … seeing that all this nature is in motion, and that nothing holds true of what is changing, they thought that it is not possible to speak truly about what is throughout and in every way changing" (Γ5 1010a1-9).

All this is obviously enough from the Theaetetus, where Theaetetus' thesis that knowledge is sensation is explicated through Protagoras' saying that man is the measure of all things, where this is taken to entail that all sensations are true, then also that all appearances are true, then also that all opinions are true, and where these epistemological theses are supposed to be correlated with "physical" theses that all things are in motion, that nothing is any more F than not-F, that "nothing is one thing αὐτὸ καθ᾽ αὑτό" (152d2-3). Both Plato and Aristotle see something like mutual implication between the λόγος of Protagoras and the λόγος of Heraclitus. What is different, though, and shows Aristotle adapting the Theaetetus for his rather different aims in the Metaphysics, is that for Aristotle the main thesis which is to be refuted, and which is supported by Protagorean epistemology and by the observation of motion and of the coming-to-be of contraries, is the (extreme) denial of the principle of noncontradiction--and this is roughly what he takes "the λόγος of Heraclitus" to be.[76] By contrast, for Plato the main thesis to be refuted, supported by Protagorean epistemology and "Heraclitean" physics, is relativism: that "whatever anyone senses [or what appears to him, or what he opines] will be true for him" (152c2-3), that each thing comes-to-be F πρός some things (including some percipients) when it encounters them, and comes-to-be not-F πρός other things (including other percipients) when it encounters them. While Plato does accuse his opponents of maintaining that the same proposition is both true and false without qualification, this is a reductio ad absurdum, not something they want to maintain. If the principle of noncontradiction says that "the same thing cannot simultaneously both belong and not-belong to the same thing in the same way [κατὰ τὸ αὐτό]" (Γ3 1005b19-20), then saying that S is F in relation to some things and not-F in relation to other things is a way of trying to preserve the principle of noncontradiction, not a way of trying to violate it. So Aristotle has chosen opponents who are in an obvious sense easier to refute than Plato's, since they hold more extreme views, but who are methodologically more problematic to refute, since they do not mind being shown to maintain contradictions. Aristotle does attribute to his opponents a strategy of relativization, but only in the middle of Γ6 (1011a17) after more than five Bekker-pages of attacks against supposed extreme opponents of the principle of noncontradiction, and only as a fallback strategy for the opponents after they have been defeated in the main argument; and then, naturally, he borrows arguments from the Theaetetus to show that this escape-route cannot succeed. The hard part for Aristotle (apart from the problem of refuting opponents who do not mind admitting contradictions, which he solves by adapting the Theaetetus' argument that on the opponents' view it would be impossible to signify anything) is to argue that plausible epistemological or physical views, that sensation is infallible or that all things are in motion or that contraries come-to-be out of each other, would lead to this extreme logical view. In a sense,

[76]on "the λόγος of Heraclitus," end of Γ7 and beginning of Γ8, also several refs in the Physics [185a7 and b20] and Topics [104b22 all things moving, 159b30-33 on contraries]. it is roughly the thesis that (all?) contraries and contradictories are true simultaneously, or that all things are one in essence (to-be-X is the same as to-be-Y and to-be-not-X). rightly or wrongly Aristotle has no notion of a "λόγος-doctrine" in Heraclitus (Plato seems not to either)

Aristotle wants to show that they do not lead to this extreme conclusion: for those who have been led to deny the principle of noncontradiction by aporiai that they do not know how to solve otherwise, Aristotle will show them that there are more moderate solutions. But he also wants to show why someone would be led to the extreme view. A major part, and probably the most interesting part, of his discussion of noncontradiction is the attempt to explain why widespread epistemological views would lead to denial of the principle; the actual refutations of the opponents' theses, by one sort or another of "table-turning" argument, are generally obvious and lifted with a minimum of modification from the Theaetetus.[77] (The main arguments against deniers of the principle of noncontradiction are over by the end of Γ4; Γ5-6 discuss physical and epistemological aporiai that have led some philosophers to deny the principle of noncontradiction, solving these aporiai and refuting physical and epistemological views rather than the principle of noncontradiction as such, and Γ7-8 mainly discuss the principle of excluded middle and connections between views on these two principles and on physical questions.)

As we have seen, Aristotle thinks that some honest inquirers have been led to deny the principle of noncontradiction by physical aporiai, and others by epistemological aporiai. The epistemological route is described mainly in Γ5 1009a38-1010a1, flanked by descriptions of the physical routes from contraries or motion, and followed by "solutions" and refutations of the radical physical and epistemological theses (rather than of the denial of noncontradiction). The opponents' main argument is supposed to come from the lack of a criterion for resolving disputes: if something tastes sweet to you and bitter to me, there is no undisputed criterion for deciding between us, and it is unreasonable to defer to the judgment of the majority, to accept the judgments of humans in preference to other animals, and so on; "so it is unclear which of these are true or false; for these are no more true than these, but equally" (1009b9-11). But it is not clear why this argument should lead us to think that all sensations are true, rather than (with perhaps Democritus) that they are all false; it is also not clear how far the "λόγος of Protagoras" should extend beyond sensible qualities. Aristotle claims that the fundamental assumption that led his opponents astray was "that sensation is φρόνησις, and that this [sc. sensation] is an alteration" (1009b12-13), and he tries to show that various pre-Socratics (and for good measure Homer) held this assumption. It is indeed true that various pre-Socratics, notably Parmenides (B16, which Aristotle cites here) hold that how someone thinks, like how he senses, is determined by the physiological condition of his body; but Parmenides is saying this, not to show that all appearances and opinions are true, but rather to discredit them, to argue that your appearances and opinions have no objective claim to truth, since the opposite things would equally appear to you if you happened to be in a different physiological condition.[78] Parmenides B16 does use the verb φρονεῖν for what the person is doing, influenced by the mixture of fire and night in his body, and perhaps Aristotle is just seizing on this innocent use of the verb, assuming that φρόνησις is necessarily a kind of knowledge, thus always true, and inferring that Parmenides is concluding that people's physiologically-influenced appearances and opinions are always true.[79] However, it is likely that Aristotle is making a more serious point, that the physicists (including Parmenides in the Doxa) assume that appearances and opinions, like sensations, are caused by their objects acting on us: they do not distinguish between the intentional object of a thought and its cause, and this entails whenever we think that P, the thought must be caused by something of which P is true, even if it is not the ordinary publicly

[77] note one or two of them, from the end of Γ4, here in the note or in the main texts, with cross-refs in Plato
[78] note Reinhardt on the importance and influence of this strategy of argument in Parmenides' Doxa
[79] this is what b31-3 (on "Hector" in Homer) would suggest, d quote

accessible object.[80] And Aristotle solves the aporia, and shows how to avoid the conclusion that all appearances and opinions are true, by distinguishing sensations of the proper objects of each sense, sensations of other things, appearances and opinions.

Thus perhaps it can be granted that sensations of proper sensibles are all true (Aristotle tries arguing that conflicts are always about something going beyond the proper sensible, Γ5 1010b14-26), or perhaps we can say that the sweet is whatever tastes sweet to someone in a healthy natural condition, and that no conflicts arise between such perceivers. (Against aporiai about the possibility of a criterion, Aristotle argues from the practice of everyone including the opponent, who must accept the judgments of the waking and healthy person rather than of the sick or the sleeper, 1010b3-11; Aristotle also insists elsewhere that the sweet by nature is what tastes sweet to someone in a natural condition, in order to support a claim that what is good by nature is what benefits someone in a natural moral condition, or that what is knowable by nature is what is knowable to someone in a natural cognitive condition.)[81] But not everything that appears can be true, and not all cognition can be sensation: not everything can be a sensible and thus guaranteed to be as cognized, because to the extent that sensation is an infallible grasp of a sensible, that sensible is a πρός τι, relative to the percipient, and not everything can be relative: if we take the proper object of sensation to be something correlative with the act of sensation, then there must be something non-relative underlying this proper sensible which is the efficient cause of the act of sensation, and prior to it rather than logically simultaneous with it (so, roughly, 1010b30-1011a2). Aristotle then infers, "if not all things are relatives, but also some are themselves by themselves [αὐτὰ καθ᾽ αὑτά], not everything that appears [πᾶν τὸ φαινόμενον] would be true: for what appears appears to someone, so that someone who says that all appearances [φαινόμενα] are true makes all beings relative" (Γ6 1011a17-20). If everything that appears were true, it could only be in the way that everything that is sensed is true, by being something relative to the cognizing subject (if appearances are non-relative, there will be at least as much scope--indeed, far more scope--for conflict about them as about sensibles). So Aristotle can infer that if everything that appears is true, then all appearances are relative, but not that all beings are relative: but the missing premiss is that every being can be the object of some act of φαντασία. Indeed, the point of the opponent's saying that all appearances are true is to slide from the case of sensation, where it is plausible that all the cognitions are true but where their range of objects is limited, to a broader class of cognitions whose objects are not limited but cover everything that is; and it is plausible that Protagoras really did make this slide, taking sensations as paradigmatic for all appearances without clear demarcation, and inferring for all appearances--that is, for all opinions--what he could legitimately maintain only for sensations. Certainly this is how Protagoras is represented in the Theaetetus, and Aristotle follows the Theaetetus in pointing out that this strategy can succeed only at the cost of making truth a πρός τι, and thus of making being a πρός τι, so that "S is" is always short for "S is for some perceiver," and indeed only for a momentary perceiver. As Aristotle puts it here, the opponents must adopt the protection-strategy ("they must take guard," 1011a21) of saying "not that the appearance is, but the appearance to the person to whom it appears and when it appears and for the [sense] for which it appears and in the way that it appears" (1011a22-4).[82] This means that the "λόγος of Protagoras" in

[80]this is a more charitable way of reading the "Hector" passage. see Mitzi's book for fuller discussion. discuss the "Hector" passage, Democritus' use of it (cited by Aristotle in the De Anima, noted by Ross), and the "day"

[81]references

[82]the meaning of the qualifications ᾗ and ὥς is not initially clear, but is more-or-less clarified by Aristotle's subsequent explanation of why these qualifications are necessary. see Alexander/Bonitz/Ross ad loc (and check Cassin-Narcy and Myriam). Alexander takes ὥς to mean e.g. "through the same eye"; Bonitz and Ross think that this

epistemology has not only physical consequences (all things are in motion, all things are mixed together) but also ontological or categorial consequences: in Γ4 that there are no essential predicates but only accidental predicates, here that there are no absolute predicates but only relative predicates.[83] As in the Theaetetus (177c6-179b9), this ontological thesis is supposed to be refuted by the objectivity of past- and future-tense propositions, especially the expert predictions of the artisan (especially useful if the opponent himself claims an expert ability analogous to the doctor's, as Protagoras presumably does): "they must make all things relative, relative to opinion and sensation, so that they neither were nor will be if no one has opined them beforehand. But if it was or will be, it is clear that not all things would be relative to opinion" (1011b4-7). That is: if all propositions are presently true only in relation to some present cognizer, this will apply not only to "S is just" but also to future-tense propositions such as "S will have good consequences" (these too are propositions that people presently disagree about, so that the same relativization-strategy will be needed): but if a future-tense proposition can be true, or a future object can exist, only in relation to someone who presently expects that it will happen, then nothing unexpected can happen (and the expert's predictions will not be objectively truer than the layman's).[84]

The point of these adaptations of the Theaetetus, for Aristotle, is to bring out the connections between attitudes toward the "axioms" of noncontradiction or excluded middle, toward epistemological theses, and toward physical and ontological theses, e.g. that all things are in motion or that all things are relatives. The arguments are meant to support, not so much their ostensible conclusions, as the meta-conclusion that the scientific understanding of the axioms is necessarily connected with the science of substance, and specifically with the knowledge that there are eternally unmoved substances. The various "table-turning" arguments against the (extreme) denial of noncontradiction or against "the λόγος of Protagoras" do not by themselves give scientific knowledge of the axioms: a reductio ad absurdum for Aristotle never gives scientific knowledge. Of course, there can never be strictly scientific knowledge of the axioms, since they are first principles and are not caused by anything prior and cannot be demonstrated from anything prior. But Aristotle thinks there can be an understanding of the axioms rooted in understanding of the genus of which they are true, namely being, which surpasses the understanding reached merely by showing that the opponent's position is self-refuting. The

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is already covered under ἢ, and that ὥς adds "seen from the same distance" or the like. the overall point remains much the same; all of these qualifications can be found in the Theaetetus

[83]references from above on "nothing is [any one thing] αὐτὸ καθ᾽ αὐτό", in the Theaetetus and in Γ.

[84]there is another argument here that is worth noting, 1011b7-12. the text is troubled, but says something like "again, if [a given object] is one, it will be πρός one thing, or πρός something determinate [e.g. it will be correlative with something specifically if not numerically one]; and even if the same thing is both half and equal, the equal will not be πρός the double [i.e. even if X is both half of Y and equal to Z, it will not be equal to Y]. So, πρός the opiner, if the same thing is man and opined, it will not be man πρός the opiner, but rather [it will be] the opined [πρός the opiner]; if each thing is [contrary to this conclusion] πρός the opiner, the opiner will be πρός things infinite in species." At b10-11 I add πρός before τὸ δοξάζον, reading οὐκ ἔσται ἄνθρωπος πρὸς τὸ δοξάζον ἀλλὰ τὸ δοξαζόμενον. If we keep the manuscript οὐκ ἔσται ἄνθρωπος τὸ δοξάζον ἀλλὰ τὸ δοξαζόμενον, the sentence must mean "if the same thing is man and opined πρός the opiner, not the opiner but rather the opined will be man"--i.e., if it is not just that X is both man and opined, but that it is both of them πρός the same thing, namely πρὸς the opiner, then since the same thing, man, cannot stand on both sides of the relation opined-opiner, the opiner must not be a man--I can't make much sense from such an argument, in itself or in the given series of arguments. With the emendation, the overall point is clear: not everything can be πρὸς the opiner; the only correlative of the opiner is the opined. Granted, the same thing can be both man and opined, but it is not man πρός the opiner (nor if it is e.g. double will it be double πρός the opiner): if everything is what it is πρός the opiner, the opiner will not be πρός one thing or πρός a determinate range of things, but πρός things infinitely many in species.

solutions in Γ5-6 of the opponent's aporiai against the principle of noncontradiction are supposed to give more understanding than the "table-turning" refutations in Γ4: since the opponent (especially in the "physical" aporiai from motion and from the coming-to-be of contraries) wants to base a denial of the axioms on a particular account of being, by showing how to avoid that account of being we also indicate, at least in rough outline, the correct account of being that would support the axioms. What Aristotle actually says by way of solving these aporiai is too short to be more than a placeholder for a fuller account to be given later. To the argument that contraries must be compresent since we see them coming-to-be out of the same thing and since nothing can come-to-be out of not-being, he replies that X comes-to-be out of what is potentially X but actually not-X, so that contraries will have been compresent in potentiality (that is, one of them was present in actuality and the other in potentiality), but not in actuality (Γ5 1009a30-36); "and we will also urge them [ἀξιώσομεν] to accept [ὑπολαμβάνειν] that there is also another οὐσία of beings to which neither motion not passing-away no coming-to-be belongs at all" (a36-8). The first half of the solution explains how contraries and contradictories are compresent, so that even if the same thing simultaneously both belongs and does not belong to the same thing, it will not do both in the same way; the second half would show that not all things have contraries or contradictories present in them even in this qualified way, and in this way will be useful against extreme deniers of noncontradiction. Likewise to the aporia about affirming anything (or affirming P more than not-P) of what is in motion, Aristotle replies, first that whenever something comes-to-be there must be something already present before the change (or in particular a constituent of the thing that persists through the change), and that "this cannot go ad infinitum" (1010a21-2);[85] second, that even if everything is in quantitative change, it need not be in qualitative change, and so we might be able to know it and make determinate affirmations about it (1010a22-5). The second reply draws on the Theaetetus' argument (181b8-182d7) that absurdity results if everything is in both local and qualitative change, in particular if the qualities themselves are qualitatively changing; the first reply is a shorthand for the Platonist argument at B#8 999b5-16 (repeated with variations at Γ5 1010a35-b1 and Γ8 1012b28-9, and later at Λ3 1069b35-1070a4 and more fully Z8 1033a24-b19) that coming-to-be presupposes something eternal, because every coming-to-be can be analyzed as some S's coming-to-be F, and because (since the analyses and the comings-to-be cannot go ad infinitum) the ultimate matter and form must be ungenerated and eternal.[86] However, on Aristotle's own grounds this does not establish that the form or the quality is eternally unchanging (and the matter, even if eternal, is not unchanging), even if the Platonists do think the argument shows this: for Aristotle, we can infer that the quality or form does not itself change (neither in the process of being acquired nor at any other time) and that it does not properly come-to-be or pass-away, but it exists only as long as it is instantiated, and there is no inference to anything eternal or eternally unchanging. But it is clear from what Aristotle immediately goes on to say, and from what he has said at 1009a36-8, and from the conclusion of Γ, that he does want to claim that a full understanding of the axioms depends on a knowledge of eternally unchanging substances; the Platonist argument from B#8 will do as a temporary stand-in for an argument that the intelligibility of coming-to-be

[85]note text issue ἰέναι; note also passing-away; note not only the matter but also the generator, which may not exactly persist through the change but exists before the change. but would the impossibility of an infinite regress of generators mean that there must be some first ungenerated ancestor, or that there is at least an eternal type, or that if there is an infinite chain of past ancestors there must also be a numerically single generator (e.g. the sun) coexisting with them? also: I'm not sure I fully understand the clauses at Γ5 1010a18-20

[86]note variations of terminology, γιγνόμενον and ἐξ οὗ, τί and εἴς τι, some interpretive issues, refer to other treatments

presupposed eternally unchanging substances, but ultimately it will need to be replaced by a better argument, quickly sketched at the end of Γ.

Aristotle immediately goes on to say that "although these people have seen that the number of things that are in this way is the minority even of the sensibles,[87] they have passed the same judgment on the whole cosmos: for only the part of the sensible around us persists in passing-away and coming-to-be, and this is so to speak no fraction of the whole,[88] so that it would be more just to acquit these [sublunar] things on account of those [heavenly] things than to condemn those on account of these" (Γ5 1010a31-2); and finally, "to these people too we will say the same things that were said before [to the aporia from the coming-to-be of contraries]: they must be shown and persuaded that there is an unchanging nature" (a33-5). The reason for mentioning the heavenly bodies and the eternally unchanging things beyond them is to support a connection between views on these cosmological questions and views on the axioms. Aristotle continues to develop this connection in Γ7-8, trying to connect denial of the principle of excluded middle with the physical doctrine that "all things are together," so that neither P nor not-P could be affirmed of the mixture (again, presumably the absurdity arises from supposing that whiteness itself is neither white nor not-white),[89] and concluding:

> It is clear that neither those who say that all things are at rest, nor those who say that all things are in motion, are speaking the truth. For if all things are at rest, then the same things would always be true and [the same things would always be] false, but it is evident that this changes (the speaker himself once was not and again will not be). And if all things are in motion, then nothing will be true; so all things will be false; but it has been shown that this is impossible. Again, what <u>is</u> must change [i.e. if there is change, there must be something existent and persisting through the change], since change is <u>out of</u> something [sc. as matter] and <u>into</u> something [sc. as form]. But neither is it so that everything is <u>sometimes</u> in rest or motion, and nothing <u>always</u>: for there is something that always moves the things that are moved, and the first mover is itself unmoved. (Γ8 1012b22-31)

The assertions that some things are at rest and others in motion, that truth (or anyway intelligibility) requires that some things are at rest, and that cognitive activity requires that some things are in motion, all come from the <u>Sophist</u>.[90] But the <u>Sophist</u> doesn't say anything explicit about whether these things are always at rest, always in motion, or alternating; perhaps Plato simply assumes that the Forms will be always at rest and the sensibles always in motion. In <u>Physics</u> VIII (starting in VIII,3) Aristotle deliberately improves on the <u>Sophist</u> by arguing that there are some things that alternate between rest and motion (namely, sublunar things), others that are eternally in motion (namely the heavenly bodies), and others that are eternally unmoved (the movers of the heavens). The last sentence of Γ (the last sentence cited above) alludes to this argument, making clear that the argument is an argument to the efficient cause, from the things that are moved to their movers rather than to their matter or form (Γ has until now said almost nothing about efficient causes). A fundamental claim in <u>Physics</u> VIII is that the eternal

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[87] construal issue?

[88] referring to the postulate in astronomy that the earth has no ratio to the whole heaven (i.e. that any multiple that we take of the earth will be less than the heaven, cp. Euclid's definition of ratio)

[89] recall Anaxagoras point from Γ4

[90] refs

alternation of things down here between motion and rest, or their eternal cycle of coming-to-be and passing-away, requires an eternally moving cause; this recalls the "Heraclitean" claim in the Theaetetus (153c8-d5) that the continued rotary motion of the sun is needed to preserve things here, that if it stopped they would resolve into a chaos. But against the Heracliteans Aristotle insists that, for there to be regularity and intelligibility in the things here, they have to be governed not merely by something in motion but by something in an eternally constant motion, which in turn can be eternally constant only if it caused by something eternally unchanging. Aristotle thinks this route through the efficient cause succeeds, where the routes to the material and formal cause do not, in establishing the existence of eternally unchanging substances; and he thinks that it gives the only way to a "scientific" understanding of the principle of noncontradiction, which will be true without any qualifications of eternally unchanging things, and of other things with more and more qualifications as they are more remotely causally dependent on the eternally unchanging things. Γ gives of course no more than a protreptic to thus understanding of eternally unchanging things, but this is as we should expect. Γ is not claiming to give a "scientific" understanding of the axioms, but rather (besides supporting them by showing that their denials are self-refuting) to show that the science of the axioms is the science of being, specifically the science of substance, and more specifically the science of eternally unmoving substance, and that the path to a scientific understanding of the axioms requires the detailed investigation of being, substance, and unmoved substance to which Aristotle will now turn. Jaeger thought that the conclusion Γ8 1012b22-31 were a later addition to Γ, and it is true that there was a proto-Γ without them, namely the arguments against Protagoras in the Theaetetus, and that Aristotle reworked these arguments and added to them his own distinctive version of the Platonist assertion of unchanging things beyond the changeable realm, a version which distinguishes between the sublunar and celestial realms and insists on taking an efficient-causal path to the eternally unchanging things. But there was never an Aristotelian version of Γ3-8 without Γ8 1012b22-31: the reason that Aristotle reworked these arguments from the Theaetetus as an arguments for noncontradiction and incorporated them into the Metaphysics was precisely to make them work as a protreptic for the long argument leading up to Λ.[91]

[91]add notes on K parallels, notably to the Γ5 aporiai, maybe more