The Aim and the Argument of Aristotle's Metaphysics

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Iβ1: The function of the introductory books and the argument of A3-10

The main conclusions of Metaphysics A1-2 were that wisdom--the kind of knowledge intrinsically most worth having--is knowledge of the ἀρχαί, and that, since these ἀρχαί are remote from our experience, we must seek them as causes of some more manifest effect. Aristotle does not expect these conclusions to be especially controversial: they sum up the results of beliefs about the σοφός that could be shared by philosophers of widely different approaches. Earlier philosophers who have laid claim to wisdom show that they agree with this characterization of wisdom, since they each claim to know some ἀρχή or ἀρχαί, something prior to everything else: and they each use their ἀρχαί as causes to explain the posterior things, and (to the extent that they justify their claims) they infer their ἀρχαί on the basis of these more manifest effects. However, this does not mean that the philosophers agree about what wisdom is. The agreement is only about an ἴδιον, a criterion of wisdom, not about what discipline satisfies this criterion: for some of them think that περὶ φύσεως ἱστορία is wisdom, others that dialectic is wisdom, and still others that something like arithmetic is most properly wisdom, and that the ἀρχαί of numbers are the first of all things. In order to go beyond this ἴδιον of wisdom to a definition that says what wisdom is, we have to discover what the ἀρχαί are; and, since wisdom will know the ἀρχαί as causes of some particular effect, we have to know not merely which things are the ἀρχαί (e.g. that the ἀρχή is water, or that it the one), but also what they are causes of. Indeed, even this is not sufficient to specify the science, since "cause" is said in many ways (i.e. the question "διὰ τί is S P?" can be correctly answered in several different ways), so that several different sciences may treat the same effect: thus to specify which science is wisdom, we must say not only what effect it treats, but also which kind of cause of that effect it investigates. Only once we know what manifest effect the ἀρχαί are causes of, and in what way they are causes of it, and what the ἀρχαί themselves are, will we know which science is wisdom; and once we have an entirely clear knowledge of what wisdom is, we will ipso facto have acquired wisdom. The Metaphysics, beyond A2, is supposed to guide us to that goal.

However, Aristotle does not take as direct an approach as he might have. In particular, the two introductory books AB do not try to state directly what wisdom is, by specifying what effect wisdom treats and examining its causes, but instead discuss controversies and aporiai about wisdom.[1] Most of the aporiai are most explicitly difficulties not about what wisdom is, but about what the ἀρχαί are, and about how, and of what, the ἀρχαί are causes; but different answers to these questions imply different answers to the question "which science is wisdom?", and lead to different programs for acquiring wisdom. Already in A7, as soon as he has finished describing the kinds of causes that earlier philosophers had cited, Aristotle proposes a program of

[1] on α see Iα5 above: I take α as a collection of supplementary material germane to A--i.e. usable in introductory lectures on wisdom--but not included in the final version, and put here as an appendix to A

discussing aporiai about the ἀρχαί: "as for how [i.e. how well] each of these people has spoken and how he stands with regard to the ἀρχαί, let us go through the possible aporiai about them" (988b20-21). Aristotle goes through these aporiai--namely, the difficulties that he finds in his predecessors' accounts of the ἀρχαί--in A8-9, and then in Metaphysics B gives a more systematic list of aporiai about the ἀρχαί, presented not as objections to his predecessors' accounts, but as difficulties that anyone who wants to attain wisdom must somehow resolve. These introductory books are supposed to play an important role in helping the reader or hearer to determine what wisdom is, and what path he is to seek it by. They help to set the agenda of the subsequent books of the Metaphysics, and they give us a thread to follow in interpreting the argument of these books: and the more we are conscious of how the later books are answering the aporiai raised in B, the more clearly we will see how the later books fit into the overall argument of the Metaphysics, directed towards acquiring knowledge of the ἀρχαί.

But we need to read A and especially B rather carefully to see how they contribute to determining what wisdom is, and so how they set the agenda for the rest of the Metaphysics. Many readers seem to feel that, if these books set any agenda for wisdom, it is not the agenda that the rest of the Metaphysics actually follows.[2] Jaeger tried to explain this feeling by saying that AB represent Aristotle's metaphysical program at a relatively early stage in his development, and that Aristotle increasingly deviated from this agenda in books of the Metaphysics written later in his life, and especially in ZHΘ, without ever systematically revising the introductory books.[3] More radically, Owens argued that the aporiai of B were never meant to set questions for wisdom to answer, but were merely preliminary difficulties to be resolved before beginning the project of metaphysics proper. But I will try to show that, on a more careful reading of B (and of the subsequent books), they do genuinely carry out its agenda; and, despite Jaeger, this will be of great help especially in interpreting Z. There is likewise a dispute about the relation of A to the subsequent books. Nobody thinks that A3-10 are a neutral "history of philosophy" (A8-9 are explicitly raising aporiai against earlier philosophers), but there is disagreement about how they function in relation to the main argument about wisdom. The most common view is that they tell a progressive story about the history of philosophy as the gradual discovery of the four causes, and so give inductive confirmation, by a survey of the causes that earlier philosophers have investigated, for Aristotle's own conception of wisdom as the science of the four causes. Owens' chapter on A is entitled "The Science of the Four Causes," and he thinks that the role of A in the larger argument is to determine wisdom as the science of the four causes, and, furthermore, as primarily a science of the formal cause. But I will argue that A's reading of the history of philosophy is much less "progressive" and optimistic, and more aporetic, than Owens and most others have thought. A3-10, like B, help to determine what wisdom must be by outlining the different possible approaches to the ἀρχαί (chiefly those that have been taken by philosophers in the past) and noting the difficulties that confront these different approaches and that must be overcome for the project of wisdom to succeed. A3-6 is a review, not of a gradual convergence on wisdom as the science of the four causes, but of a series of aspirations to wisdom, each

[2] see Madigan's introduction to his Clarendon Beta

[3] to recall (reference above): Jaeger thinks that Aristotle did not originally write ZHΘ as part of the Metaphysics, i.e. as part of the treatise intended to begin with AB; Jaeger 1912 thought (untenably) that ZHΘ were added to the Metaphysics by early Peripatetic editors; Jaeger 1923 thought that Aristotle himself later incorporated ZHΘ into the Metaphysics, but without revising AB (except by adding B#14?) to accommodate the new material in the treatise. by contrast, Natorp (following out an idea from Brandis 1834) had tried to use the aporiai of B as a criterion to distinguish the genuine core of the Metaphysics (i.e. not just genuinely by Aristotle, but intended by Aristotle as part of the treatise), which for him includes ZHΘ as well as Λ.

successively disappointed; Aristotle concludes that no previous philosophers have given an account of the ἀρχή as a final cause, and therefore that none of them have achieved wisdom as described in A1-2; and he does not say or imply that wisdom is a science of all four causes, or in particular of the formal cause, but rather ultimately concludes that it is not a science either of material or of formal causes.

In trying to understand the value of AB for Aristotle's positive project, it is perhaps best to start with Aristotle's official statement at the beginning of B (995a24-b4) on the value of aporiai. Aristotle gives three distinguishable reasons for why it is important to collect and work through the aporiai (chiefly aporiai arising from what our predecessors have said, but supplemented by arguments they may have missed). First, our goal is εὐπορία, which consists in the resolution of aporiai,[4] and in order to untie a knot we must first know that it is there (a27-b33). Second, investigating [ζητεῖν] without going through the aporiai is like searching for something without knowing where we have to go to look for it; and, Aristotle adds, we will not even know whether we have found it or not (a34-b2). Third, we are in a better position to judge if we have first listened to the contending parties in the lawsuit, and to the arguments on both sides (b2-4). The last point is perhaps too obvious to need much comment, but it is worth emphasizing that there is a contest going on: the aporiai are not simply hard philosophical questions, or even paradoxes that have to be resolved, but disputes between two (or sometimes more) contending parties, each of whom is making a claim to wisdom, and each of whom has arguments against the others' claims. The parties are those we have met already in A, each putting forward their preferred ἀρχαί, and each claiming a wisdom consisting in knowledge of these ἀρχαί; in B Aristotle is interested in isolating their fundamental disputes insofar as they help to determine what discipline we should follow in looking for the ἀρχαί (e.g. should we pursue physics, dialectic, mathematics? what kind of effect should we investigate? should we seek its material, formal, efficient, or final cause?). If εὐπορία consists in resolving these aporiai, then the aporiai will determine the course that we have to follow, and they will also tell us when we have reached the end: we know that we are there if we have resolved all the aporiai. Aristotle's phrasing makes it clear that he is putting this forward as an answer to Meno's paradox, along the lines he suggests in EE II,1.[5] If we do not yet know what X is, then to search for X we must begin from an ἴδιον like "Coriscus is the darkest man in the marketplace": this will show us both where to go to look for Coriscus (namely, to the marketplace), and how to recognize him once we find him there. So we need an ἴδιον of wisdom, and Metaphysics A3-10 has shown that we need something more determinate than the ἴδια that Aristotle began from in A2, and more determinate than the ἴδιον that A2 derived from them, "wisdom is knowledge of the ἀρχαί": all-too-many thinkers, who all agree on this description, claim to have found the prize in widely differing locations. In B Aristotle is in effect substituting the fuller ἴδιον "it is the kind of account of the ἀρχαί that allows us to resolve the aporiai, that is, to answer the basic objections that have been brought against all past claims to knowledge of the ἀρχαί." If we were not aware of the difficulties, we might much too easily think that we had got to the goal (we might, for instance, simply declare "the good is the one, and all things proceed from the one," and call that wisdom--perhaps this is what Dionysius II did in his book on "the first and highest things περὶ φύσεως," Plato Letter VII 344d4-5); or we might think that our predecessors had already attained wisdom, and that there was no need for a new investigation.

This last point helps to explain why, for pedagogical and rhetorical reasons, A is necessary as

[4] cp. A2 on starting with θαῦμα and trying to resolve
[5] reference to Iα2

well as B. The point is perhaps best illustrated by Aristotle's procedure in the Politics. Aristotle's main aim, as he states it at the beginning of Politics II, is "to consider which is the best of all political communities for those who are able, so far as possible, to live as they wish" (1260b27-29), but instead of proceeding directly to describe his own ideal, he finds it necessary first "to examine the other constitutions," both constitutions of real cities (such as Sparta) that earlier writers have praised, and the ideal constitutions conceived by Plato and others: this is partly so that we can profit from whatever is right in these constitutions, but also "so that it will not appear that we are seeking another one beyond these because we want to act like sophists [σοφίζεσθαι], but rather that we are undertaking this investigation because the constitutions that currently exist [in practice or in theory] do not have it right [μὴ καλῶς ἔχειν]" (1260b33-36). The Metaphysics faces a similar rhetorical difficulty: in seeking a new σοφία beyond the currently existing disciplines, we might seem to be acting like sophists; in order to capture the reader's sympathy, we need to explain why a new effort is necessary, by examining earlier thinkers' accounts of their wisdom, and showing that they are insufficient.[6] Metaphysics A is directly parallel to the descriptions and criticisms of earlier constitutions in Politics II, and it is no more neutral, and also no more "progressive" or optimistic, than Politics II: it is directed toward criticism, and toward showing that Aristotle can overcome the aporiai that confronted his predecessors, and can succeed in what they were trying but failing to do. The Politics II text is striking also in that the order of investigation it calls for is exactly the reverse of Plato's order in the Republic: Plato builds up his ideal state "from scratch," without motivating it by showing the defects of ordinary constitutions; only in Book VIII, long after most readers have stopped reading, does he describe and criticize the other constitutions, giving withering criticisms of the Spartan and Athenian ideals. Plato's rhetorical mistake here is similar to his mistake, as Aristotle sees it, in the lecture on the good: he should have given a προοίμιον to explain his purpose to the audience, and he should have begun from things familiar to them, the goods and the constitutions that are commonly praised, so that he could show them that his constitution and his good-itself are better than these. Aristotle follows what he regards as a more appropriate order in presenting his ideal state in the Politics, and in presenting the true human good in the ethical works; and he will do the same in presenting the true wisdom and the true ἀρχαί in the Metaphysics, beginning from the wisdoms and the ἀρχαί that his predecessors have spoken of.

This pedagogical-rhetorical point concerns not only Aristotle's discussion of his predecessors, but also his presentation of aporiai. The aporiai are designed to motivate the solutions. We have no more reason to think that Aristotle discovered the aporiai first, and the solutions only later, than to think that Euclid discovered the propositions of the Elements in the order in which he presents them: the teacher's aim is not to replay his own psychological history for his students, but to present the material in the order most conducive to learning. Aristotle's aporetic method is in the first instance a teaching method, his improvement on the method of the Republic or of the lecture on the good. Often the key to solving an aporia will be a distinction, and the aporetic method, developing the conflicting arguments that seem inescapable until we draw the distinction, serves to prepare for introducing the distinction, and allows Aristotle to present it in such a way that the audience will accept it with relief as a way of reducing cognitive dissonance. Thus in NE I,4-8, where Aristotle is seeking to state "what it is that πολιτική aims at, and what is the highest of all practical goods" (1095a15-17)--everyone agrees that it goes by the name "happiness," but they disagree about what this is--he considers the different things that the many, or more refined people, or philosophers, have considered to be the highest good, and he raises

[6]reference to Rhetoric on προοίμια: cp. a speaker arguing that his motive is not sycophancy but public service

objections to them all in turn; only then does he give his own account of "τὸ ζητούμενον ἀγαθόν" (1097a15-16), and explain how it does justice to the considerations in favor of each of the other goods, while being immune to the arguments against them. The key here is the distinction between ἕξις and ἐνέργεια: once the audience accept this, they will readily see that the life of ἐνέργεια according to virtue is immune to the objections against virtue and against pleasure (and so on), and that it is what the proponents of virtue and pleasure were really aiming at. In a similar way, Aristotle will use different aporiai in B to motivate distinctions that are crucial to his positive project in the Metaphysics, such as the distinctions between things said πρὸς ἕν and pure equivocals, between priority in οὐσία and priority in λόγος, or between ἀρχή and στοιχεῖον. And, more fundamentally, he uses the conflict between the physicists and the dialecticians and mathematicians, which underlies most of the aporiai of B, to motivate the search for a new kind of ἀρχή that will be immune to the objections raised against the ἀρχαί of these different earlier disciplines. To follow the thread of Aristotle's positive arguments in books Γ and following, we need first to understand how he motivates them by the difficulties of the introductory books.

I will concentrate on B rather than A, since the details of B are more directly relevant to the arguments of later books. But some basic points from A (beyond what we have seen already from A1-2) will be important. A3-6 inquires what our predecessors have said about the ἀρχαί, A7 sums up the results, and A8-9 shows what is wrong with these earlier accounts (in the case of Plato calling up a whole battery of arguments, only a selection of which could be used in any given oral presentation): all this is an appropriate introduction to a περὶ ἀρχῶν, just as Politics II is an appropriate introduction to a περὶ πολιτείας. Aristotle is perhaps here following the model of earlier writers (perhaps including Hippias) who had collected the opinions of the wise, on the ἀρχαί and on other standard topics.[7] But Aristotle diverges from this tradition, not only in that he is presenting the material with a view to criticism and to his positive project, but also in the particular questions he is posing about the ἀρχαί. The doxographical tradition, both before and after Aristotle, is chiefly interested in which ἀρχαί, and how many ἀρχαί, each philosopher posited--e.g. water, or air, or the ἄπειρον, or atoms and the void. Aristotle asks this question too, but his interest is directed toward discovering in what way these philosophers used their ἀρχαί as causes--that is, what role the ἀρχαί play in explaining the things that come after them in the philosophers' accounts. The philosophers themselves may not have made this explicit, particularly if they followed a narrative order--"first X was, then Y arose, then Z"--but they can justify positing their ἀρχαί only if these ἀρχαί function somehow as causes of the things that arise after them, and Aristotle wants to classify the ways that this was supposed to work.

Notoriously, Aristotle uses the list of four causes from the Physics to classify the different accounts of the ἀρχαί.[8] The earliest physicists took as their ἀρχαί and στοιχεῖα only the material cause, "that out of which all beings are, the first thing out of which they come to be, and the last thing into which they perish" (A3 983b8-9): this material ἀρχή (or these several material ἀρχαί) is supposed to be the οὐσία of all the things that are formed out of it, and the only real οὐσία there is; it is not only the first thing, but also remains eternally, underlying all transformations.[9] But, Aristotle claims, the physicists themselves eventually saw that such ἀρχαί are insufficient, and so began to cite in addition another kind of ἀρχή, namely a cause of motion and of order (A3 984b8-11, cp. 984a19-27). This means that the later physicists, Anaxagoras and

[7]note on Hippias and the idea of doxography before Aristotle: cite Mansfeld's paper
[8]note references in ABK to the Physics
[9]cp. Physics II,1 193a10-28, and note on οὐσία with genitive (I'll have a fuller discussion of this--where? IIα?)

Empedocles, cited efficient causes (νοῦς or Love and Strife) as ἀρχαί in addition to the material causes; but there is also a further point. The material substratum of a thing may itself be cited by the physicists as an efficient cause or source of natural motion (Aristotle cites Antiphon to this effect at Physics II,1 193a13-18), but νοῦς and Love are the kind of cause of motion that is specifically a cause of order, that is, of a good or purposeful arrangement of the universe, whereas the material substrata themselves had been cited only as causes of blind necessity (A3 984b11-22). Anaxagoras was the first person to clearly mention a cause of goodness (τοῦ εὖ καὶ καλῶς, 984b11ff) in the universe (there is a scholarly aside about possible precursors, A3 984b18-A4 984b32); then Empedocles, noting that the evil and disorder in the universe also needed to be explained, added Strife as a cause of motion and disorder to Love as a cause of motion and order (A4 984b32-985a4, cp. 985a29-31).[10] Thus νοῦς and Love are good ἀρχαί and causes of goodness, while Strife is an evil ἀρχή and a cause of evil; what Empedocles means, even if he does not articulate it clearly, is that "the evil and the good are ἀρχαί ... since the cause of all goods is the good-itself [αὐτὸ τἀγαθόν]" (985a7-10);[11] and while Aristotle is applying the Platonic language of αὐτὸ τἀγαθόν anachronistically, he is quite consistent in attributing such an ἀρχή both to Empedocles and to Anaxagoras. (Empedocles is explicitly cited as making the good an ἀρχή at Λ10 1075b2, and Anaxagoras at b8; the same position is again ascribed to both of them, though not quite so explicitly, in N4 1091a29ff, especially 1091b10ff). But here in A4 Aristotle goes on to express disappointment that Anaxagoras and Empedocles, despite having posited what seem like the right kind of ἀρχαί, do not make any systematic use of them in the causal explanation of the world, but fall back on the same kinds of explanation as the earlier physicists (985a10-29, see discussion below).

After disposing of the physicists up through Anaxagoras and Empedocles, Aristotle's main concern is with Plato, in A6 (he first gives brief discussions of Leucippus and Democritus, A4 985b4-20, and of Parmenides and Melissus, A5 986b10-987a2, and at somewhat greater length of the Pythagoreans, A5 985b23-986b8: none of these thinkers posited an ἀρχή of motion).[12]

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[10]Aristotle unambiguously represents Anaxagoras as coming before Empedocles, despite what has been the common view since Zeller that A3 984a11-13 leaves it ambiguous: for review of the evidence see my "Anaxagoras, Empedocles, Leucippus." Aristotle speaks, here and throughout, as if Empedocles' Love and Anaxagoras' νοῦς were pretty much the same thing, differing only in that Love has a contrary ἀρχή, Strife, which it must contend with for mastery of the universe. this is misleading in that νοῦς is a cause of vortical motion and thus of separation (and as far as we can tell this is the only way it causes order), effects which Empedocles attributes to Strife rather than to Love; his Love, rather than sorting like to like, unites contraries, and specifically unites them in harmonious proportions, effects which Anaxagoras leaves unexplained. thus in a sense it would be more accurate to say not (as Aristotle suggests) that Empedocles takes over Anaxagoras' νοῦς, renames it Love, and adds the contrary ἀρχή Strife, but that he takes over νοῦς, renames it Strife, and adds the contrary ἀρχή Love. for full discussion see "Anaxagoras, Empedocles, Leucippus." however, in the Metaphysics Aristotle is interested not in their cosmogonies but in their accounts of good and evil ἀρχαί, and for this purpose it is reasonable to systematize as he does

[11]note text issue about καὶ τῶν κακῶν τὸ κακόν in 985a10 (E, not A^b; we don't have J here, so it would be important to check other witnesses to the α tradition such as E^s or V^d; Bekker's apparatus suggests that it's in all manuscripts except A^b, thus that it goes back to the hyparchetype of α, but inferences from Bekker's silence are dangerous; Alexander 33,25-6 says that we have to supply something like this in thought; contrary to Jaeger's report, the words are in Asclepius, 31,8-9--Asclepius does also say they're missing, but only when he's copying Alexander, 31,9-11; perhaps that means he's supplied them at 31,8-9 rather than taking them from a manuscript, perhaps not)

[12]Parmenides had actually been mentioned in A3-4 as introducing such a cause (ἔρως) in the Doxa, but that is ignored now (although the material principles of the Doxa, the hot and the cold, are mentioned). on the atomists on motion Aristotle says only "about motion, whence or how it will belong to the things that are, these people too, similarly to the others, lazily let go" (985b19-20), which may seem strange, given Democritus' insistence that the atoms are always in motion, and that their motions and collisions lead to the origin of worlds. Aristotle's point is partly that the atomists (like pre-Anaxagorean physicists) do not cite an efficient cause distinct from their material

Where Anaxagoras and Empedocles had cited only material and efficient causes as their ἀρχαί, Plato cites only material and formal causes (A6 988a8-11). This seems like a surprising thing to say, and Aristotle has often been accused of unfairness here. As Aristotle surely knows, Plato had cited soul as an ἀρχή of motion in the Phaedrus and Laws, and νοῦς as an efficient cause of world-order in the Philebus and Laws (and as the demiurge of the Timaeus).[13] But this just helps to underline that Aristotle is asking, neither about what ἀρχαί earlier philosophers posited, nor about how many kinds of cause they posited, but about how they used their ἀρχαί as causes, i.e. how they used their initial posits in explaining later things. The claim is that, whatever other kinds of causes Plato may have cited, he used his ἀρχαί--namely, on Aristotle's account, the one and the indefinite dyad of the great and the small--only as formal and material causes: if the cosmologies of the Timaeus and Laws can be somehow integrated with whatever Aristotle is taking to be Plato's official statement περὶ ἀρχῶν (perhaps the lecture on the good), then the efficient causes, νοῦς and soul, must somehow arise out of the ἀρχαί, rather than being themselves ἀρχαί. (I will come back below to why Aristotle says that Plato did not use his ἀρχαί as final causes.)

Aristotle's concentration on the question of the ἀρχαί also explains why in A he represents Plato as an outgrowth of the Pythagoreans rather than of Socrates, and why he stresses the identification of the ideas with numbers. (By contrast, in the parallel in M4, which shares important themes with A6, he emphasizes Socrates much more than the Pythagoreans, and insists that the original version of the theory of ideas did not connect them with the numbers, 1078b9-12: he examines that original version in M4-5 before turning to the issue of numbers in M6-9.) In fact Socrates is excluded from the main narrative of A, as are Zeno and Protagoras and Gorgias and Isocrates, all philosophers who did not posit ἀρχαί and so exclude themselves from wisdom as described in A1-2. Thus while Plato's theory of ideas may grow out of Socrates, Aristotle traces his ἀρχαί, the one and the indefinite dyad of the great and the small, back to the Pythagoreans on odd and even or limit and unlimited or one and plurality (all mentioned A5 986a15-26; these are ἀρχαί of numbers, and the Pythagoreans thought that "numbers were the first things in all of nature, and that the στοιχεῖα of numbers were the στοιχεῖα of all beings," A5 985b33-986a2). Aristotle is presumably basing himself here in part on Philebus 16c5-10, where "the ancients, who were better than we and lived closer to the gods, transmitted this saying, that [all] the things which are ever said are [composed] of one and many, and have a connate limit and unlimitedness within them"; this saying is there said to have been transmitted from the gods, along with fire, by "some Prometheus," whom Aristotle is probably identifying, probably rightly, with Pythagoras.[14]

ἀρχαί, and therefore do not cite an ordering cause; but also that Democritus assumes that each atom has simply always been in motion, and that there is therefore no need to explain why it is in motion, either by positing some nature in the thing itself that would incline it to a particular natural motion, or by positing some eternal ἀρχή: there is no beginning of motion, but merely preexisting motion turned in another direction after each collision

[13]note on Λ10 on where Plato cites soul. Plato's use of "ἀρχὴ κινήσεως" may well be the source of Aristotle's

[14]I am not, of course, identifying the theory of the Philebus (much less the account of the one and the indefinite dyad) with anything any pre-Platonic Pythagorean (much less Pythagoras himself) had said. all we can say is that Plato is probably alluding to something like Philolaus Fr. 1-2, that he is willing to attribute the words πέρας and ἄπειρον to Pythagoras himself, and that he is giving a more-or-less playful "modernizing" exegesis of the supposed Pythagorean saying, as he is willing to do elsewhere with Homer and other ancient sages. however, Aristotle is probably minded to take the connection with Pythagoreanism (Aristotle does not speak of Pythagoras himself) more seriously than some other such genealogies because other Academics (and, for all we know, Plato himself orally) claimed to be the true heirs and interpreters of Pythagoreanism; as we will see, Aristotle turns such claims against the Academics

> Since the Forms were causes to the other things, [Plato] thought that the στοιχεῖα of [the Forms] were στοιχεῖα of all the things that are. So the great and the small are ἀρχαί as matter, and the one as οὐσία [= formal cause]: for out of these [= the great and the small] by participation in the one are the Forms/numbers.[15] Now that the one is an οὐσία, and is not, being something else, called one,[16] he said similarly to the Pythagoreans, and that the numbers are causes of οὐσία to the other things he said in the same way as them; but to make a dyad instead of a single unlimited/infinite, and to make this unlimited/infinite out of great and small, this is distinctive; and also he says that the numbers are beside [παρά = separate from] the sensibles, while they say that the things themselves are numbers, and do not posit the mathematicals [intermediate] between these. (988a18-29)

Plato's reason for identifying the ideas with numbers would be that the numbers can be plausibly derived from these two contrary ἀρχαί, and that without the reduction to numbers there is no plausible way to derive the great plurality of ideas from any plausible (and plausibly short) list of ἀρχαί.[17] Socrates plays a role in this story as leading Plato to refine the Pythagorean conception of the numbers and their ἀρχαί: Socrates' search for definitions, and more generally his turn to dialectic rather than pre-Socratic physics or Pythagorean mathematics, forced Plato to a much more precise account of formal causes than the Pythagoreans had given, and also, "having been first familiar from his youth with Cratylus and the Heraclitean doctrines that all sensible things are always flowing and that there is no knowledge [ἐπιστήμη] about them" (A6 987a32-4), Plato identified these objects of definition and scientific knowledge with things existing outside the sensible world.[18] So Plato sought the ἀρχαί of these things, and identified these with numbers, while the Pythagoreans (Aristotle says) had sought the ἀρχαί of the sensible cosmos, and identified the sensible cosmos with numbers (for the contrast, A6 987b27-33; on the Pythagoreans, A8 989b29-990a5). This story sounds entirely to the advantage of Plato and the disadvantage of the Pythagoreans, but, as we will see (briefly in this section, at length in Iγ2), Aristotle will use it to argue (i) that the Pythagorean accounts are crude pseudo-physics and cannot be saved as the Academics want to save them; (ii) that Plato's and other Academic accounts continue to be vitiated by the same fundamental flaws as the Pythagorean stories,

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[15]the manuscripts and Bekker have ἐξ ἐκείνων γὰρ κατὰ μέθεξιν τοῦ ἑνὸς τὰ εἴδη εἶναι τοὺς ἀριθμούς. Bonitz keeps the text, following Alexander in taking τοὺς ἀριθμούς in apposition with τὰ εἴδη; Schwegler deletes τοὺς, interpreting "the forms are numbers [that arise] through the participation of these [the great and small] in the one." but both of these are difficult, and Christ and Jaeger delete τοὺς ἀριθμούς (apparently missing in the Arabic) as a gloss, Ross rather τὰ εἴδη. note some other textual issues nearby

[16]i.e. it does not have some other underlying nature of which "one" is an attribute; this is a set phrase in Aristotle, which will be discussed in Iβ4

[17]"If the ideas are not numbers, they cannot exist at all: for out of what ἀρχαί will the ideas be? For number is out of the one and the indefinite dyad, and these are said to be the ἀρχαί and στοιχεῖα of number, and it is not possible to rank [the ideas] either prior or posterior to number" (M7 1081a12-17). for discussion of the motivations and difficulties of Platonic and other Academic accounts of the ἀρχαί see Iγ2c-d. on the account Aristotle gives in A6, the one and the indefinite dyad are formal and material causes of the Forms (interpreted as numbers), and then these numbers are formal causes, and the indefinite dyad again is again a material cause, of sensible things. thus the one is not directly a cause of sensible things. there are obvious difficulties in the same material ἀρχή playing these two roles

[18]I see no reason to think that Aristotle had any source for this outside Plato's Cratylus, and I do not understand why Cherniss, in particular, takes this part of the story as serious history while rejecting Aristotle's equally speculative reconstruction of Plato's relationship with the Pythagoreans

especially the inadequacy of mathematical ἀρχαί for explaining physical things; and (iii) that Plato, by separating ideas and mathematical numbers from the sensible world, loses whatever plausibility the Pythagoreans may have had in causally connecting numbers with the phenomena. Aristotle concludes his exposition of Plato on the ἀρχαί with what looks like an afterthought, that Plato makes the one the cause of good and the indefinite dyad the cause of evil, just as Anaxagoras had made νοῦς the cause of good, and as Empedocles had made Love the cause of good and Strife the cause of evil (A6 988a14-17).

What conclusion does Aristotle expect his hearers or readers to draw from all this? What conclusion does he in fact draw in A7? A very widespread view is that Aristotle intends this historical survey to confirm his view that wisdom is the science of the four causes: earlier thinkers have successively discovered these causes, without grasping them quite clearly, but Aristotle's doctrine of the four causes is what they were all really aiming at, and is the culmination of historical progress toward wisdom. This is, however, a serious misinterpretation of what Aristotle is saying here, and makes it almost impossible to understand the argument of the rest of the Metaphysics. Certainly Aristotle says in A7 that earlier thinkers have grasped, imperfectly, the kinds of causes from the Physics (988a20-23), and that the historical survey confirms that we have not omitted any further kind of cause (988b16-18). But there are at least three things wrong with the suggestion that A3-6 are meant to show that wisdom is the science of the four causes.

First, it cannot be distinctive of wisdom that it is a science of the four causes. All sciences deal with causes, and (as Aristotle argues in Physics II) physics deals with all four kinds of cause, but this does not make it wisdom. The Metaphysics is interested in classifying the kinds of causes, not for their own sake, but because the ἀρχαί must be causes in some way, and we must know how they are causes in order to seek them effectively. But there are many other causes that are not in the relevant sense ἀρχαί: Peleus is a cause of Achilles, and the sun is a cause of the growth of plants, but Peleus and the sun are not among the first of all things, and so are not objects of wisdom. "The science of the four causes" could only be a name for the totality of all the sciences.[19] But wisdom could still be a science of the four causes, if the ἀρχαί it will know turn out to be causes in all four ways at once, or to include different ἀρχαί that are causes in each of the four ways.

The second point, however, is that Aristotle does not say, in A7 or anywhere else, even that wisdom is a science of all four causes. The first aporia of B takes up the question "about the difficulties we raised in the introduction [περὶ ὧν ἐν τοῖς πεφροιμιασμένοις διηπορήσαμεν]" (B1 995b4-5), whether wisdom is a single science of all the different kinds of cause, or, if there are different sciences of the different kinds of causes, which one of them is wisdom: there is no suggestion that this question has already been settled by anything said in A. As we will see in

[19]it has been suggested, by Irwin and Leszl among others, that wisdom is "the science of the four causes" in quite a different sense, not as being the science that knows the first formal cause, first material cause, etc., of the manifest things, but as being a second-order science that examines general concepts such as causality and their applicability. (this would bring Aristotelian wisdom close to Kantian metaphysics, looking for a deduction of the pure concepts of the understanding; Irwin thinks Aristotle is particularly concerned with whether metaphysical realism can be justified given his "dialectical method"; Leszl--in a passage I will come back to in Iβ2c--says that if Aristotelian wisdom were a first-order knowledge of causes, then Aristotle would have no way to respond to the arguments of B#1 that wisdom is not a single science of all four causes, which is true, but is not a reductio ad absurdum). but this simply is not what Aristotle is concerned with in A: we learn from A1-2 that wisdom will be a science of the ἀρχαί and that these will be first causes; the question whether wisdom is the science of this or that kind of cause is a question which kinds or kinds of causes the ἀρχαί will be; if wisdom needs to examine causal concepts, it will be purely as a means to determining which kind or kinds of cause lead up to the ἀρχαί.

discussing B (in Iβ2c below), Aristotle's answer is in fact negative, that wisdom is not a science of all four causes. But for the moment it is enough to see that nothing Aristotle says in A7, or elsewhere in A, gives an affirmative answer. Aristotle explicitly concludes in A7, first that no one has been able to find any other cause beside the four of the Physics (988b16-18), and furthermore that "it is clear that the ἀρχαί are to be sought either in all of these ways or in some one of them" (988b18-19).[20] As Alexander correctly explains the passage, "even if the present study [πραγματεία] does not cite an account of all the causes, nonetheless its way of seeking the causes is among the four, and does not fall outside of these causes, since there is no other kind of cause beside these" (In Met. p.64). What kinds of causes the Metaphysics actually treats, we will have to see further on.

The most important point for the reading of A itself, however, is that the usual interpretation (that A3-6 are intended to confirm that wisdom is the science of the four causes) misrepresents the main thrust of A3-6. Aristotle's history does not put all four causes on an equal footing (nor does it, as Owens suggests, make the formal cause primary),[21] and it is not a "progressive" story of the gradual discovery of the four causes. Its lesson is quite different. To see this, we have to compare Aristotle's text with the text it is most immediately imitating and responding to, the Platonic Socrates' criticism of the physicists, and his account of his own alternative method, in Phaedo 96a6-102a1. That Aristotle is adapting Plato's account is obvious. Like Plato, he begins with a criticism of those physicists who cite only material causes, then speaks of the hope aroused by Anaxagoras' project of explaining the world through νοῦς,[22] and then complains, following the Phaedo's wording closely, that Anaxagoras "makes almost no use" of νοῦς, and that "he cites as a cause almost anything rather than νοῦς".[23] Both Plato and Aristotle assume that an explanation through νοῦς will be an explanation of why things have been ordered as they have, because it is best for them to be so, and not because of forcible constraint; when Anaxagoras fails to meet this expectation, his practice contradicts his own claim to exhibit νοῦς as the cause of the world-order.[24] The lesson from Anaxagoras is thus not so much that he made progress toward wisdom, as that he at least formulated the right project, without being able to carry it out. Socrates in the Phaedo says that he would "most willingly become a disciple of anyone" who could explain "this kind of cause" (99c6-8), namely the causality of "the good" (τὸ ἀγαθὸν καὶ δέον 99c5, ἡ τοῦ ὡς οἷον τε βέλτιστα αὐτὰ τεθῆναι δύναμις c1), although at the moment he does not know how to do this: and indeed Plato later, notably in the Republic and in the lecture on the good, does himself try to exhibit the good-itself as an ἀρχή, and so to succeed where Anaxagoras had failed. Aristotle is thus following Plato's model in using the criticism of Anaxagoras to motivate his own project.

Aristotle is of course expanding what in the Phaedo was officially just the character Socrates' autobiographical narrative of his personal adventures with physics into a general history of

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[20]ζητητέαι αἱ ἀρχαί ἢ οὕτως ἅπασαι ἢ τινὰ τρόπον τούτων, literally "either all the ἀρχαί are to be sought thus or in some one of these ways," which makes no sense. but Aristotle surely means from the beginning to be quantifying over τρόποι rather than over ἀρχαί. Bywater's emendation of τούτων to τοιοῦτον yields a sense, "all the ἀρχαί are to be sought either thus or in some similar way," but it is the wrong sense in context, and this kind of emendation to preserve strict grammar is not a good idea in Aristotle

[21]reference to Owens if not cited before

[22]esp. A3 984b15-18, and note the wordplay: Anaxagoras, in introducing νοῦς as a cause, was speaking like a sober man, where those who had ascribed the beauty of the world-order to chance were speaking "at random"; similar wordplay in Plato

[23]details of texts 985a17-21, cp. Phaedo 98b8-c2 (as on Paris handout)

[24]refs; 984b20-22, 985a15-17; cp. Laws XII 967b-c

philosophy, or, more precisely, into a history of the aspirations to wisdom and their disappointment. As so often, Aristotle's strategy is to tease out the aims and assumptions implicit in what earlier thinkers have said, and then to argue on internal grounds that they cannot accomplish their own aims, that he himself can provide what they are seeking better than they can, and thus that their sympathizers should follow him instead. In expanding the Phaedo account, one change is to add Empedocles, but this is only an amplification, not a structural change: Empedocles shares Anaxagoras' aspiration to trace things back to a good ἀρχή (while raising the question of a contrary evil ἀρχή), and makes some progress beyond him, but ultimately falls short for very similar reasons ("Empedocles makes more use of his causes than [Anaxagoras], but not enough, nor has he attained consistency with them," A4 985a21-3, his Love sometimes separates and his Strife sometimes unites and so on).[25] The more important change, in comparison with the Phaedo, is that Aristotle adds Plato himself to this history and to this critique, treating Plato in strict parallel with Anaxagoras. As Anaxagoras used only the material and efficient causes, so Plato used only the material and formal causes; neither of them used the final cause. All Aristotle says in A6 about Plato on the good is that he "assigned the causes of good and evil each to one of his two στοιχεῖα, just as we have said that some of the earlier philosophers also sought to do, like Empedocles and Anaxagoras" (988a14-17). And he concludes in A7 that, while all these thinkers posited the good among their ἀρχαί, still, since none of them used their ἀρχαί as final causes, none of them really made the good a ἀρχή qua good: that is, the ἀρχή may happen to be good, but it does not cause other things by being good, but only through some other attribute, such as (for Plato) by its being one and the source of unity.

> That for the sake of which actions and changes and motions [take place] they name as a cause in a way, but not in this way, not in the way it is its nature to be a cause. For those who speak of νοῦς or Love posit these causes as good, but they do not speak as if anything is or comes to be for the sake of these things, but rather as if motions arise from them [i.e. as if they are efficient rather than final causes]; and, in the same way, those who say that the one or being exists say that such a nature is a cause of οὐσία [i.e. a formal cause], but not that [anything] is or comes to be for its sake. The result is that in one way they do, and in another way do not, say that the good is a cause: they do not say so unqualifiedly, but only per accidens. (988b6-16)

That is: when Anaxagoras says that νοῦς is the good (or speaks of it in such a way to imply that it is the good), but then uses it only as an efficient cause, as the source of vortical motion, he is not using it as a cause qua good: it would have the same effect if it were not good, and the effect gives no reason to believe that the cause is indeed good. And, in the same way, when Plato says that the one is the good, but makes unity rather than goodness its essence,[26] and uses it only as a

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[25] in "Anaxagoras, Empedocles, Leucippus" I suggest that Plato and Aristotle are drawing on things Empedocles intended as criticisms of Anaxagoras, and turning them against Empedocles as well (the Phaedo has nothing on Empedocles, but some similar criticisms in the Timaeus of people who rely on συναίτια are directed against Empedoclean explanations)

[26] thus in Metaphysics N4, where Plato's account of the good as ἀρχή is again put in parallel with those of Anaxagoras and Empedocles, Aristotle says that "some of those who say that unmoved substances exist ['those' = the Academics as opposed to the physicists; 'some of those' = Plato as opposed to Speusippus] say that the one-itself is the good-itself: but they thought its οὐσία was especially the one" (1091b14-15), i.e. that its nature is just to be

formal cause of unity, indeed (according to A6) immediately only as a formal cause of unity to numbers, he is not using it as a cause qua good: it would have the same effect if it were not good, and the effect gives no reason to believe that the cause is indeed good. By contrast, a final cause is a cause by being good, and it is also a cause to the means of its being good in its lesser degree. The Socrates of the Phaedo admits that he had hoped to explain things through the good as their final cause and cannot, that he invokes formal causality only as a second-best substitute. Plato does try to fill in the missing teleological explanation of the physical world in the Timaeus, but Aristotle does not accept this as using the good ἀρχή as a final cause, because he does not take the Timaeus to be Plato's official statement on the ἀρχαί, and in whatever Aristotle takes to be Plato's official statement on the ἀρχαί (as reported in A6 and then in more detail in N), the good ἀρχή is used only as a formal cause of ideas identified with numbers. Thus it is Plato's reliance on Pythagoreanism in his account of the ἀρχαί that prevents him from using the good ἀρχή as a cause qua good: "what we see in the sciences to be a cause, that on account of which all intelligence [νοῦς] and all nature produce [i.e. the final cause]--with this cause, which we say is one of the ἀρχαί, the Forms have no connection, but mathematics has come to be philosophy for people nowadays, though they say it should be practiced for the sake of other things" (A9 992a29-b1). Plato cannot explain except in poetic metaphors what this causality of the numbers has to do with the fact that the one is good: "it is hazardous to show that the one is the good-itself, on the ground that numbers desire [it]: for it is not said clearly how they desire, rather they assert this too absolutely; and how could someone suppose that there is appetite in things which do not have life?" (EE I,8 1218a24-8, cited in Iα4 above). This is why it was natural for Speusippus to follow Plato's practice rather than his preaching, and to stick to the one as the ἀρχή of numbers, while giving up the claim that the ἀρχή is the good.

The lesson of A3-7 is thus that Plato offers no improvement over Anaxagoras in exhibiting the good as an ἀρχή, and thus in satisfying one of the basic requirements of wisdom, that it should know "that for the sake of which each thing is to be done, and this is the good of each thing, and, universally, the best in all nature" (A2 982b4-7). Knowledge of the formal cause is for this purpose no better than knowledge of the efficient cause, and Owens is wrong in thinking that the formal cause emerges from A3-7 as the primary object of wisdom. Aristotle's history of past claims to wisdom (like its model in the Phaedo) serves to show, not that his predecessors have been converging on wisdom, but that they have all failed to achieve their goal, and that it is worth searching for a new science. Aristotle has not yet given full arguments to show that his predecessors have failed, and he turns to do this in detail in A8-9. But A3-7 do already establish one particular criterion for wisdom, namely that it must give a better account of how the good is an ἀρχή than Anaxagoras or Empedocles or Plato could do: Aristotle will claim to deliver such an account in the argument culminating in Λ10.[27]

In N4-5, after examining the accounts of Anaxagoras and Empedocles and (especially) Plato on the one hand, and of Speusippus on the other, Aristotle concludes, "if it is impossible either not to posit the good among the ἀρχαί [like Speusippus] or to posit it in this way [sc. as Plato does, by identifying the good as the one and as the ἀρχή of numbers], then it is clear that the ἀρχαί and the first οὐσίαι have not been given rightly" (1092a9-11). Commentators, uncomfortable with finding in Aristotle the "Platonic" conception of the good as a metaphysical ἀρχή, have been reluctant to take the argument here seriously. Annas says, "here Aristotle

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one, and that "good" is merely an attribute predicated of this underlying nature. see also Aristotle's discussion of the lecture on the good, and EE I,8, both discussed in Iα4 above. full account in IIIγ3 below

[27] see IIIγ3 for full discussion; also see Iβ2c

provisionally accepts the idea of the good or the good in general, and shows that even on the Academy's own terms neither theory about it current in the Academy [i.e. Plato's or Speusippus'] is adequate .... it is impossible to tell whether he would here subscribe to the account he offers in the similar passage Λ chapter 10 .... Elsewhere, however, Aristotle mostly rejects the idea of good in general as vacuous and unhelpful .... In the present passage Aristotle's own ideas are not to the fore and he attacks the Academy in their own terms."[28] To the contrary, what Aristotle is saying here, as in Metaphysics A, is programmatic for his own project of wisdom; he does not accept the idea of the good here any more than elsewhere, and (as we saw in Iα4) the good-itself, which he consistently accepts himself and also consistently attributes to Anaxagoras and Empedocles, need not be an idea of the good. Annas says that "the reference to Empedocles and Anaxagoras is very odd and untypical (though paralleled in the similar passage Λ 1075b1-11). Elsewhere, while Empedocles is said to have 'lispingly' grasped the final cause (985a4-10), Anaxagoras is said by Aristotle (following Plato's complaints in the Phaedo) to have made Mind only an efficient cause and not to have recognized final causes at all."[29] But Annas is confusing the good-itself, which Aristotle does attribute to Anaxagoras and Empedocles, with the final cause, which he does not attribute to them. In fact, Empedocles does not even lisp the final cause: Empedocles lisps the formal cause at A10 993a15-24,[30] but at A4 985a4-10 all he lisps is that "Love is the cause of goods and Strife of evils," so that "if someone should say that Empedocles in a way says, and was the first to say, that the evil and the good are ἀρχαί, he might well be right, since [or 'if,' εἴπερ] the cause of all goods is the good-itself." This does not say how Love is the cause of goods, does not say that it is their final cause: the context in A4 makes clear that Empedocles made Love an efficient cause, working by bringing things together, and A7 says emphatically that Empedocles and Anaxagoras "posit these causes as good, but do not speak as if anything is or comes to be for the sake of these things, but rather as if motions arise from them" (988b8-11, cp. a33-4). Aristotle does, of course, think that a philosopher who posits the good as an ἀρχή ought to use it as a final cause, since only thus is it a cause qua good: but he thinks that Empedocles and Anaxagoras, and also Plato, have failed to do this.

In Metaphysics Λ10, after giving his own positive account of the ἀρχή, Aristotle contrasts himself with two groups of earlier philosophers. In one camp are those who "say, rightly, that [the good] is an ἀρχή, but do not say how the good is an ἀρχή, whether it is as a τέλος or as a mover or as a form" (1075a38-b1): the philosophers specifically criticized under the latter head are Plato (1075a32-36), who had identified the good with the formal ἀρχή and the evil with the contrary material ἀρχή, then Empedocles (1075b1-7), who uses Love as an efficient cause and also as a material constituent of the mixture, and Anaxagoras (1075b8-11), who uses νοῦς only as an efficient cause. The other camp consists of Speusippus (and the Pythagoreans as he interprets them) who "do not even make the good and evil [to be] ἀρχαί, although in all things the good is most of all an ἀρχή" (1075a36-37). For Aristotle himself, of course, the good-itself will be an ἀρχή as a final cause (we will see later that it is also an efficient, but not a formal cause). But Aristotle's aim is not just to say this, but to show us, by following up some causal

[28]Annas Aristotle: Metaphysics MN p.212. I assume that by "idea of the good" Annas means a Platonic idea, not just "conception." her reference to two theories about the idea of the good (or "good in general") current in the Academy is peculiar. it looks as if she thinks that Speusippus believes that the idea of the good is not the one but something derivative from the one; but there is no sign that Speusippus believed in an idea of the good (or any other kind of good-itself) at all

[29]Annas p.214

[30]there are parallels, notably in De Partibus Animalium I (I think I list the parallels in "Sagesse"), where Aristotle says that Empedocles and/or Democritus imperfectly grasped the formal cause--never the final cause

chain and drawing inferences about its first cause, both what the nature of the ἀρχή is in itself and what effects it has on other things. The main argument of the Metaphysics is devoted, both to following up the true causal path, and to examining false paths to show that they do not lead to the desired ἀρχαί. When in Λ6-10 Aristotle finally reaches his account of the ἀρχή, he has reached the end of the main argument; and he marks this closure by referring back to the promises of the introductory books.[31] Thus besides offering solutions to different aporiai that A and B had laid down as tests for wisdom, Λ10 also picks up on the very beginning of the Metaphysics, claiming to have achieved the knowledge of the good as universal ἀρχή promised in A2, and so to succeed where the philosophers discussed in A3-7 had failed. Speusippus had been left out of A, because he had refused to compete at what the (serious) philosophers of A were trying to do--both discovering the good as ἀρχή, and discovering a single ἀρχή for all things--but Aristotle brings him back in Λ as a contrast with the earlier philosophers, in order to show that he (Aristotle) has made good on the ambitions of the earlier philosophers, and that Speusippus' counsel of despair is therefore unnecessary.

Of course, the A7 argument that the earlier philosophers have not used their ἀρχαί qua good is not in itself sufficient to show that these philosophers have not found the ἀρχαί, since A2 has not proved that the good must be an ἀρχή. A8-9 give detailed arguments against each of the philosophers reviewed in A3-6. Since my interest here is only in how A sets up the project of the rest of the Metaphysics, I will not go through the arguments in detail (the greater bulk, and by far the most detailed and interesting, of the arguments are those against Plato in A9, which I will return to in discussing the parallels in M4-5 and in MN more generally, Iγ2d). But it is worth bringing out a few points other than the failure of the earlier philosophers to use the good as an ἀρχή.[32] When Aristotle criticizes the physicists in A8, he is, like the Socrates of the Phaedo, concerned to show the explanatory inadequacy of the things these philosophers had cited as causes: this criticism is especially sharp against the material monists, less so against Empedocles and Anaxagoras. But unlike the Socrates of the Phaedo, Aristotle is convinced that there is a real φυσικὴ ἐπιστήμη, and that the causes it cites are real causes and not mere συναίτια: it is just that earlier φυσικοί did not practice this discipline correctly. True physical science must cite formal as well as material causes to explain natural phenomena; the pre-Socratic physicists as described in A4-5 failed to do this, but, as Aristotle adds in A10, Empedocles implicitly describes a formal cause in some cases, and could have been persuaded to admit formal causes more generally. But Aristotle's deeper point is that, even when physics is practiced correctly as a science, it is still not wisdom. As he says at the very beginning of A8, the physicists "posit the στοιχεῖα only of bodies, and not of incorporeals, although incorporeals too exist" (988b24-26).[33] This is, in the first instance, an argument that physics cannot be wisdom because (if, as Aristotle assumes here without argument, incorporeals too exist) physics does not consider the causes of all beings, but only of a limited range of beings, and so cannot expect to reach the highest ἀρχαί, which will be causes of all beings universally. But (as we saw above, Iα4) the deeper point is not just that incorporeal or immobile things exist alongside bodies, but that (separate) incorporeals are prior to bodies, so that physics, in considering only causes which are themselves bodies (or which are inseparable from, and therefore not prior to bodies), cannot reach the ἀρχαί, which must be incorporeal and separate.

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[31] see IIIγ3 for a full treatment

[32] perhaps slight update from Symposium Aristotelicum A7 paper: setting up four successive groups (monists, pluralist physicists, Pythagoreans, Plato), increasingly promising, for successive falls

[33] note Jaeger's bracketing of "although incorporeals too exist" as a varia lectio

By contrast with these limitations of the physicists, Aristotle praises the Platonists and Pythagoreans "who consider all the things that are, and suppose that some beings are sensible and others are not sensible" (A8 989b24-6) as more encouraging candidates for wisdom. But of these he quickly dismisses the Pythagoreans, since, although they are discussing the kinds of causes and ἀρχαί that are "sufficient for going up to the higher beings, and better suited for this than for accounts περὶ φύσεως" (990a7-9), they wrongly treat numbers and their ἀρχαί as bodies, so that they are simply practicing physics in an idiosyncratic way. Plato, then, is the remaining hope for finding a causal chain that would lead up from bodily things, through their incorporeal causes, to the ultimate incorporeal ἀρχαί. So Aristotle devotes A9 to proving that Plato has failed to do this.

The sheer multiplicity of arguments in A9, each only briefly sketched, can make it difficult to discern the main lines of Aristotle's critique.[34] But it is easy enough to see that Aristotle's critique is an internal critique. He does not give any argument that Platonic Forms don't exist, nor does he directly argue that the arguments for the Forms are fallacious. Rather, he argues that the Forms, and the Platonic arguments for them, cannot accomplish what Plato wants them to accomplish. If the arguments work, they will prove too much, proving the existence of Forms which are clearly superfluous and which the Platonists do not believe in. (The arguments are thus presumably fallacious in some way, but Aristotle leaves it to the Platonists to figure out how.) And the deeper reason why the Platonists cannot construct satisfactory arguments from the sensibles to the Forms is that the Forms do not fill any need, contributing neither to the knowledge of the sensibles nor causally to their being (991a8-14); and thus they do not help to connect the sensibles with their ἀρχαί. If numbers were in the sensible world as the Pythagoreans say, or if the forms that sensibles participate in were spatially mixed with the things as Anaxagoras and Eudoxus say, then we could understand the causal connections, but Plato, in rightly rejecting these crude views, has also abolished any causal connection, of any of the kinds we have reviewed in A3-7, between sensible things and what has been posited to exist beyond them. "In the Phaedo it is said that the Forms are causes both of being and of coming-to-be" (A9 991b3-4), but clearly they do not make anything come-to-be (are not efficient causes), and neither can they be causes of being (the οὐσία or formal cause of a thing), since "it would seem impossible for the οὐσία and what it is the οὐσία of to be separate" (991b1-2).

> And generally, though wisdom seeks the cause of the manifest [sensible] things, we [Platonists] have let this go (for we say nothing about the cause from which change begins [efficient cause]), but thinking that we are naming their οὐσία [formal cause], we say that there are other οὐσίαι: but as to how these should be οὐσίαι of those, we are talking vacuously, for "participation," as we have said before, is nothing. And what we see in the sciences to be a cause, that on account of which all intelligence [νοῦς] and all nature produce [the final cause]--with this cause, which we say is one of the ἀρχαί, the Forms have no connection, but mathematics has come to be philosophy for people nowadays, though they say it should be practiced for the sake of other things. And one might think that even the οὐσία that [according to these philosophers] underlies as matter, the great and the small and so on, is too mathematical, and is not matter itself but a predicate and differentia of the οὐσία-in-the-sense-of-the-matter--the way that the physicists speak about the rare and the dense, saying that these are the first differentiae of

[34] detailed discussion in Iγ2d

> the substratum, for these too are excess and deficiency. And with regard to motion, if these things [the great and the small and so on] are motion, clearly the Forms too will be moved; and if not, where has motion come from? The whole study of nature has been abolished. (A9 992a24-b9)

Although Aristotle is here rejecting the claims of the theory of Forms in any version ("participation is nothing"), his criticism is once more directed especially against Plato's reliance on mathematics as a path to the ἀρχαί. The one and the numbers and the great and the small are supposed to be the ἀρχαί of ordinary natural objects, but, Aristotle says, they cannot genuinely be causes of natural things in any of the four senses of "cause": despite his professed intentions, Plato has in fact given up on finding a causal path up from the manifest things to the ἀρχαί, and is simply positing a realm of eternal beings causally unconnected with ordinary objects. We have seen that the Platonic ἀρχαί cannot be <u>final</u> causes, but neither can they be <u>efficient</u> causes, since, under these mathematical descriptions, they have no connection at all with natural motion. If these ἀρχαί are to give any account of motion, it is because the great-and-small in the realm of Forms is somehow paradigmatic for change (because it contains contraries in a single substratum?); but this is "motion" in the same poetic sense in which numbers "desire" the one, and is useless for explanation. Aristotle thinks that, in not seeking the causes of natural motion, Plato is giving up on the causes of natural things altogether: the thought is the same as Theophrastus', that if the ἀρχή is indeed causally connected with sensible things, "since nature is, to put it simply, in motion, and this is its ἴδιον, it is clear that this [ἀρχή] must be posited as a cause of motion" (Theophrastus <u>Metaphysics</u> 4b18-22). What Plato <u>says</u> is that the Forms are the οὐσίαι as formal causes of natural things (and that the great-and-small is their οὐσία as matter), but the genuine οὐσίαι of natural things would explain why they <u>move</u> in the way they naturally do, since this is what makes them natural beings of a particular kind. Indeed, Aristotle is not taking Plato's claim that the Forms are causes of being any more seriously than his claim that they are causes of becoming. It is not so much that Plato has made a mistake about the ontological status of the real formal causes of natural things, wrongly supposing that they exist separately from matter, as that he has invented a fictitious quasi-formal cause to make up for his lack of a real causal chain leading up from physical to incorporeal things. Again, this is why it was natural for Speusippus to give up, and admit that there simply is no causal connection (as formal causes or otherwise) between the posited numbers and changeable things. But this is to give up not only on "the study of nature" but on the project of wisdom itself. The positive challenge of wisdom, if it is to make good on the Platonic claim that the ἀρχαί are something beyond bodies, is to find a causal chain that genuinely does lead up from natural things to incorporeal ἀρχαί, as distinguished both from the fake causal chains that Aristotle is criticizing here, and from the genuine physical causal chains that do not lead to anything beyond and prior to natural things. Once Aristotle has found such a causal path up out of the sensible world, he will also try to show that it delivers on the other promises of wisdom, and, in particular, that it leads to the good as the first ἀρχή.