Iγ2: Iota and the attributes of being

Iγ2b: Iota on contraries, and consequences for the ἀρχαί

Iota 3-10 continue the investigation of the <u>per se</u> attributes of being begun in Iota 1-2. As Iota 1-2 investigate unity, discussed in the main body of Δ6, so Iota 3-4 investigate plurality, mentioned in the last few lines of Δ6, and sameness and otherness (and likeness and unlikeness), difference, and contrariety and the other modes of opposition, discussed in Δ9-10.[1] Neither Iota 1-2 nor Iota 3-4 are explicitly about ἀρχαί, but in both cases the discussion is undertaken in the service of the investigation περὶ ἀρχῶν, and supports conclusions about the ἀρχαί that are explicitly drawn in N, as ZHΘ support conclusions about the ἀρχαί that are explicitly drawn in Λ. The Academics claim both that the one is an ἀρχή, and that plurality or otherness is an ἀρχή contrary to the one, or that some first pair of contraries are ἀρχαί and the sources of all contrariety. In order to investigate claims of this type, Aristotle examines the one in Iota 1-2 and contraries in Iota 3-4. In both cases Aristotle accepts that these things are, in a weak sense, ἀρχαί: "the one is the ἀρχή of number <u>quâ</u> number" (Iota 1 1052b23-4), "in all these [various genera that have measures] the measure and ἀρχή is something one and indivisible" (Iota 1 1052b31-2); "contraries are uncompounded out of each other, so that they are ἀρχαί" (Iota 7 1057b22-3). But in both cases Aristotle's account is designed to show that the one, or the contraries, cannot exist separately from the particular genus of which they are (in the weak sense) ἀρχαί, and therefore that the one and the contraries cannot be in the strict sense ἀρχαί. The concept of ἀρχή is not thematized in Iota, but it is in N, and N1 makes explicit the consequence that neither the one nor contraries can be ἀρχαί in the strict sense; in discussing Iota 3-10 in this section and the next, as in discussing Iota 1-2 in the previous section, I will turn to N wherever it is helpful to make explicit the aims that implicitly govern the argument of Iota.

Iota 3-4, following Δ9-10, discuss attributes both from the positive column of the table of contraries, like sameness, and from the privative column, like otherness and difference and contrariety. But it quickly becomes clear that Aristotle's interest is overwhelmingly in the privative column, and that it focuses on contrariety and its distinction from the other kinds of opposition, building up to a definition of "contrary." This is because, as Aristotle will show, of all these attributes it is contraries that have the most serious claim to be ἀρχαί.[2] Aristotle also derives from his definition the corollary that a single thing cannot have more than one contrary, picking up the promise he had made at Γ2 1004b1-4 that the science of being would investigate this question; and he argues that the primary contrariety is between possession and perfect or complete [τελεία] privation. Throughout all this argument Aristotle makes heavy use of Δ, including surprising sections such as Δ16 on perfect/complete, and the use of these sections in Iota helps to explain the motivation of the Δ accounts. In Iota 5-6 he uses the accounts of contrariety and the other kinds of opposition, and the corollary that a thing can have at most one contrary, to argue that great and small (Iota 5) and one and many (Iota 6) are not really

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[1] see discussion of Δ6 and Δ9-10 (and their relation to Γ2) in Iγ1b above. there is an explicit back-reference to Δ10 at the end of Iota 3, 1055a2, discussed in Iγ1b

[2] it is perhaps surprising that he has no discussion of infinity, which is in some sense an opposite to unity and is treated as an ἀρχή by many earlier philosophers. but evidently Aristotle feels he has treated this adequately in <u>Physics</u> III. he will have some things to say about the difference between plurality and continuous quantity, though more in MN than in Iota

contraries; this argument is directed toward showing, against respectively Plato and Speusippus, that these are not plausible ἀρχαί, consequences that Aristotle will develop in N.[3] While the main work of Iota is accomplished by Iota 6, Iota 7-10 give further applications of the results of Iota 3-4,[4] considering contrary differentiae as the (broadly speaking) ἀρχαί within each genus and arguing that intermediate things (Iota 7) and things other in species (Iota 8-9) must be the same in genus and must be "out of" [ἐκ] that genus and the contrary differentiae within that genus; Iota 8 includes an argument against the Platonic thesis that the genus itself is something remaining the same apart from its species and unaffected by either of the contrary differentiae, and Iota 10 is a further polemical corollary, arguing that incorruptibles and corruptibles cannot be the same in genus or species, and therefore that there cannot be, as Plato claims, an incorruptible Man conspecific with mortal men. In the present section Iγ2b I will treat Iota 3-4 and more quickly some main points of Iota 7-10, and in the following section I will turn to the main consequences against Plato and Speusippus in Iota 5-6.

Iota 3, continuing the discussion of the one in Iota 1-2, starts by describing the ways that the one and the many are opposed. Aristotle is here picking up the very brief account of the different senses of the many opposed to the different senses of the one at the end of Δ6 (1017a3-6); but he is going deeper, using the Iota 1-2 analysis of the one as indivisible and as measure. Aristotle's main point now about the opposition of one and many is that while the indivisible is opposed to the divisible as its contrary or privation, the measure and the thing measured will be opposed as correlatives (Δ6 had said merely that "the many will be said oppositely to the one," i.e. that there will be different senses of "many" opposed to the corresponding senses of "one" [1017a3-4], with no hint that the modes of opposition would be different for different senses of the one). But Aristotle reserves his deeper treatment of this point for Iota 6, and I will defer discussion until we come to that chapter in Iγ2c below. In Iota 3, as in Γ2, he calls up the opposition of the one and the many in order to make a transition to the various things that "belong to the one, as we also wrote/drew [διεγράψαμεν] in the Division of Contraries," such as "the same and like and equal" (Iota 3 1054a29-31, cf. Γ2 1003b33-1004a2) and those that "belong to the many" such as "other and unlike and unequal" (Iota 3 1054a31-2, cf. Γ2 1004a17-22) and different and contrary. These are attributes of being discussed in Γ2 and again in Δ9-10, and Iota is where Aristotle claims to deliver on his earlier promises of a philosophical investigation of these attributes. However, if we expect a systematic treatment of the different senses of these attributes, the causes of the primary sense, and so on, we will be disappointed. Rather, Aristotle pursues only those lines of investigation which bear on the ἀρχαί, and specifically on Academic candidates for the ἀρχαί. Thus he quickly loses all interest in likeness and unlikeness; he stays interested in equality and inequality only for the purposes of Iota 5, designed to shoot down Plato's claims for "the unequal" or "the great and [the] small" as an ἀρχή, and in "the many" only for Iota 6, designed to shoot down Speusippus' claims for unity and plurality as ἀρχαί. His interest in sameness seems to be restricted to the claim of Iota 8 that things that are other in species must be the same in genus, and the anti-Platonic corollaries developed in Iota 8 and 10. Already in Iota 3 it is clear that Aristotle is deliberately narrowing down to attributes in the privative column, and within this column to the other, the different, and contraries, saying just enough about the other attributes of being to enable these polemical applications later in Iota.

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[3]also the thesis that the primary contrariety is between possession and perfect/complete privation will be used against the Academics in Iota 5-6, and will also be the starting-point for the discussion in Iota 7-8 of what contraries have intermediates and of how the intermediates arise from the contraries {incorporate in main text?}
[4]this bit now needs to be revised

The discussion of otherness and difference occupies the latter half of Iota 3, 1054b13-1055a2, leading into the account of contrariety in Iota 4: contrariety was already mentioned as a kind of difference at Iota 3 1054b31-2, and Iota 4 proceeds by locating contrariety among the other kinds of difference. Aristotle's first concern in Iota 3, as in the short account of difference at Δ9 1018a12-15, is to distinguish between "other" (he uses ἄλλο and ἕτερον interchangeably) and "different."[5] At a first approximation, we can say that otherness is the negation or contradictory of sameness, while difference is a privation of sameness: i.e., that X is other than Y whenever X is not the same as Y, but X differs from Y only when X is not the same as Y, but is of such a kind that it could be the same as Y. "Different from Y" would thus add a presupposition that is not in "other than Y." However, Aristotle adds a qualification that implies that otherness is not strictly the contradictory of sameness: although he starts by saying that "other and the same are said oppositely, so that everything is either the same or other in relation to everything" (Iota 3 1054b14-16), he then adds that X and Y are the same or other only when they are both things-that-are, whereas things-that-are-not cannot be called either "same" or "other," so that "other" is not strictly the contradictory of "same," but some other kind of opposite (b19-21).[6] Perhaps technically otherness is a privation of sameness, so that X is other than Y when X is not the same as Y and X is of such a kind that it could be the same as Y, in the minimal sense that X and Y are both things-that-are.[7] But for X to differ from Y, it must be in a stronger sense capable of being the same as Y, because there must be something that X and Y both are, in the standard case a shared genus Z, and to belong to genus Z is to be potentially Y. So we can ascribe to every other species of Z, not merely the negation "not Y" or the almost equivalent "other than Y," but the

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[5]for interchangeable use of ἕτερον and ἄλλο see N1 1087b26, "some people oppose the other and another [τὸ ἕτερον καὶ τὸ ἄλλο] to the one" {d refer ahead to note on the textual problem at N1 1087b29-30 and its possible implications, or cite the results already here}. see Barnes, Porphyry: Introduction pp.164-6 and pp.345-8 for the failure of various attempts to distinguish the meanings of ἕτερον and ἄλλο. Plato Parmenides 164b8-c1 says that we can infer from one term to the other. the usual grammarians' thing to say up to the present day is that ἕτερον means the other of two, ἄλλο another of more than two (for which Barnes cites Ammonius De adfinium vocabulorum differentia 30: ἄλλος καὶ ἕτερος διαφέρει. ἕτερος μὲν γὰρ ἐπὶ δυοῖν, ἄλλος δὲ ἐπὶ πλειόνων). there are plenty of instances where there are many F's and X is one F and Y is ἕτερον F, but we can always say that since Y is being considered as another with respect to X, they are being treated as a pair. (what do people think about whether the grammarian Ammonius is the same as the philosopher, commentator on the Organon?)

[6]by contrast, Δ9 just said other was opposite to same, without sorting out modes of opposition. there's presumably a background in sophistic to μὴ ὄντα being neither the same nor other (I'm not sure whether there's anything in the SE that helps, but cp. the E2 question whether musical Coriscus is the same or other than Coriscus). if I concede that my first-born son is someone other than me, when in fact I have no sons, trouble will follow. there will also be implications for the arguments of the Parmenides, where it is sometimes asked whether X is the same as or other than Y even when one of these is hypothesized as μὴ ὄν (in H5 a non-existing one is the same as itself and other than the others {also διάφορον τῶν ἄλλων, 160d2}, while H6 rejects these predications as absurd; in H7 the others cannot be other than the one, since the one does not exist, so they must be other than each other). Aristotle's usual solution is that "X is Y" is always false, and "X is not Y" true, if X is μὴ ὄν (but, contra, "Homer is a poet"). as Paolo Fait points out, this differs from the Sophist, which analyzes "X is not Y" as "X is other than Y" (in Centrone p.91--d check his reference to Berti, "Quelques remarques sur la conception aristotélicienne du non-être", Revue de Philosophie Ancienne 2, 115-42, perhaps Berti had made this point). (also note the Parmenides 161c3-e2 argument that the non-existing one is not equal to the others, therefore it is unequal to them, so it is great and small etc.; also 150de since the one is neither great nor small it must be equal; all this turns on confusing the negation not equal with the privation unequal)

[7]In the apparently corrupt passage at 1054b21-2, ἢ γὰρ ἓν ἢ οὐχ ἓν πεφυκὸς καὶ [om. AᵇM] ὂν καὶ [om. J] ἕν, emended various ways by different editors, the point seems to be that the things-that-are are of such a nature as to be one, so that they have either unity or the privation of unity, with the apparent implication that they are either the same or other.

privation "different [διάφορον] from Y" or "differing [διαφέρον] from Y"; and the fact that X differs from Y will be explained by some difference or differentia [διαφορά], whereas the fact that X is other than Y is explained merely negatively, by the fact that it is not Y. While Aristotle, following his usual practice in Iota, does not say so here, part of his motive for distinguishing "other" from "different" is to show that there cannot be an other-itself, as in the <u>Sophist</u>, and that "the nature of the others" cannot be an ἀρχή, as in the third Hypothesis of the <u>Parmenides</u>; he does mention "the other" as a candidate ἀρχή in N1, when he says in a list of Academic ἀρχαί, alongside the great and the small and so on, that "some people oppose the other and another [τὸ ἕτερον καὶ τὸ ἄλλο] to the one, others plurality and the one" (1087b26-7).[8] But a mere negation certainly cannot be an ἀρχή, and cannot have a "nature" of its own. Presumably the Academic opponent, once shown the distinction between otherness and difference, will say that it was difference rather than otherness that he meant as his ἀρχή. But the investigation of difference and contrariety, begun in Iota 3-4 and completed in Iota 7-10, will show that difference is not an ἀρχή, and that contraries are ἀρχαί only in a restricted sense.

The compressed and preliminary account of difference in Iota 3 (12 lines, 1054b25-1055a2) serves as a transition from otherness and an introduction to the account of contrariety in Iota 4: difference is the genus of contrariety and gives us a starting-point in locating contrariety (contrariety will be "greatest difference" or "perfect/complete difference"), and all difference will turn out to derive from contrariety.[9] (Not all otherness derives from contrariety; and since otherness does not come in degrees, it would be impossible to define contrariety as "greatest otherness.") There are difficulties of text and interpretation here in Iota 3, and at least verbal inconsistencies with what he says about difference even in the following chapters ("it is impossible to make consistent Aristotle's various statements in these chapters about difference," Ross AM II,291). But Aristotle's basic points about difference remain constant.

Iota 3, and then later Iota 8-9, deliberately take up the brief description of difference in Δ9: "those things are called different which are other while being the same something [τὸ αὐτό τι],[10] not only in number but either in species or in genus or by analogy;[11] again, things whose genus is other [ὧν ἕτερον τὸ γένος], and contraries, and those things which have otherness in their οὐσία" (Δ9 1018a12-15). The most basic point, here and in Iota, is that if X and Y are different, they must be somehow the same, there must be something Z which they both are; and this allows us to <u>compare</u> their ways of being Z. It is less clear what things count as different, and what they have to have in common. Alexander paraphrases Δ9's "things whose genus is other" [ὧν ἕτερον τὸ γένος] as "things whose genera are other" [ὧν τὰ γένη ἕτερα, 379,9], but this could apply only to one subtype of differing things, and is almost certainly not what Aristotle means.[12] Rather, as he says in Iota 8, when horse and man are other in species and belong to the same genus, "it is not sufficient for the common [predicate] to belong [to both subjects], e.g. that they are both animals, rather this animal must itself be other for the two of them, e.g. in the one case a

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[8]this should probably be cited more prominently (at the beginning of Iγ2b, or of Iγ2a?) as evidence that he's interested in ἄλλο etc. as candidate ἀρχαί. note also the fragment (where?) on Pythagoreans calling matter ἄλλο.
[9]unless there is difference (not merely otherness) between categories, on which Aristotle seems to waver, see below
[10]or perhaps, as Alexander takes it, "the same in some respect." at the beginning of the sentence, we should read "διάφορα δὲ" with EJ Ross, not just "διάφορα" with A^bM Jaeger
[11]"in number" grammatically could qualify either "the same" or "other," but it must be "the same," since it makes no sense to be "other by analogy." I would take "not only" [μὴ μόνον--note textual issue, μὴ μόνον A^bM, καὶ μὴ μόνον EJ] as "not necessarily," but Alexander and Ross takes it as = μόνον μή, "but not." Alexander says Aspasius took the phrase as "not only other in number, but [the same] in species or genus or analogy" (379,3-8)
[12]Bonitz and Ross here follow Alexander into error; Bonitz at least sees that the result is objectionable

horse and in the other case a man: thus this common thing is other in species [τοῦτο τὸ κοινὸν ἕτερον ἀλλήλων ἐστὶ τῷ εἴδει, literally the common thing is 'other than each other in species,' i.e. it is other in species in one case from what it is in the other case], so that one of them will be per se[13] this kind of animal [τοιονδὶ ζῷον] and the other will be that kind of animal, e.g. in the one case a horse and in the other case a man" (1058a2-6). Only if the genus itself becomes other in this way--which it will not if the alleged differentia is merely in the matter, or merely an accident--will "this differentia [be] an otherness of the genus" (a6-7), and this is surely what Aristotle means in Δ9 when he explains "different things" as "things whose genus is other." An infima species cannot be differentiated in this way (if it could, it would have species under it), which suggests that distinct individuals of the same infima species do not count as "different," even though they are "the same something": if they are "different," at any rate they do not have a differentia by which they are different, unless their matter or accidents count as a differentia, and so they will not "have otherness in their οὐσία."[14] We might also think that things not in the same category cannot be "different," and indeed Iota 4 1055a26-7 seems to say that they cannot,[15] but Iota 3 1054b26-30 says that they can: but to the extent that they can, it is only because even things in different categories can be somehow the same (the same by analogy, says Δ9), so that there is some respect (perhaps precisely their different "figures of predication," Iota 3 1054b29-30) in which they can be compared.

In any case, Iota 3 takes up from Δ9 the insistence that things that are different must have something in common in respect of which they differ ("the different is different from something in something [τὸ διάφορον τινὸς τινὶ διάφορον], so that there must be something the same in which they differ [ταὐτό τι εἶναι ᾧ διαφέρουσιν]: this same thing [τοῦτο τὸ ταὐτό] is either a genus or a species" 1054b25-7);[16] and in different terminology Iota 8 says of what is "other in species" (which it apparently treats as equivalent to "differing in species," cf. Iota 9 1058b24-5) that it is "another something than something [τινὸς τὶ ἕτερον], and this must belong to them both" (1057b35-6), although as we have seen it adds that this common thing must itself be specifically different when applied to the two species.[17] Iota 3 also takes up from Δ9 that

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[13]καθ᾽ αὑτό EJ is probably right against καθ᾽ αὑτά A^bM Bonitz Ross Jaeger, but the sense is the same

[14]Alexander in his paraphrase of Δ9 (378,34-5) says that things in the same species differ; are there texts in Aristotle that support this?

[15]note Ross on two ways to avoid this--they differ but not by a difference, or substance and quality are different but man and whiteness aren't. neither is very attractive

[16]since esp. Jaeger's apparatus is misleading at b26, let me note the manuscript situation: in place of ταὐτό τι here J has τὸ ταὐτό τι; E has τὸ αὑτό τι but then a scholium above αὑτό τι writes γρ[άφεται] ταυτό τι. this should mean that it's reporting the J reading τὸ ταὐτό τι (it could just be reporting ταὐτό τι--but that's so close to E's τὸ αὑτό τι that why bother?) M has ταυτό τι like A^b (with an odd gap after the ταυ). [we might very well read τὸ αὑτό τι with the first hand in E, but I have written ταὐτό τι to give an antecedent to τοῦτο τὸ ταὐτό in b27, assuming that reading is correct]. in b27, as Ross and Jaeger correctly report, where E and J have τὸ ταὐτό, A^b (and M) have τὸ αὑτό.

[17]there is, however, a notorious problem about what Iota 3 means by the "that in which" (or "that by which") X and Y differ. man and horse are normally said to differ "in species" [εἴδει], but it is difficult to say that "species" here names a single thing which is the same for both man and horse--even, as Iota 8 suggests (without calling it a "by which" in the dative), a generically single thing which becomes specifically different from itself. horse might also be said to differ from man "by" (instrumental dative) the differentia "quadruped," and man from horse by "biped," but again this does not seem to give us a single thing by which they both differ. the pseudo-Alexander takes this single thing to be, in the case of Socrates and Plato, the species, and in the case of man and horse, the genus. this is the obvious thing that would be the same for both, and it fits well with Iota 8. but (i) it is odd to say that man and horse differ "in" or "by" (dative) animal, and (ii) Aristotle goes on to say "this same thing is either a genus or a species: for everything that differs differs either in genus or in species" (1054b27-8), which would imply that, if man and horse differ in animal, they differ in genus, against the overwhelming usage which says that they differ in species, and

"contraries too are different, and contrariety is a kind of difference" (Iota 3 1054b31-2), but it does not connect this up with a general account of difference--to the point that Bonitz suspected these words as an interpolation.[18] However, Iota 8-9 will integrate into a single account all the clauses from Δ9, the sense in which difference or otherness in species necessarily involves contrariety (1058a16-21) as well as the sense in which difference makes the shared genus other, or involves an otherness in the οὐσία of things (so esp. Iota 9: οὐσία 1058b22). Iota 3 is taking up Δ9's various descriptions of difference in the promise of uniting them in a single account, but in fact the connections between the different descriptions are not really explained until Iota 8-9; and this is because the explanation depends on the account of contrariety in Iota 4, which in turn is built on the preliminary account of difference in Iota 3.

Iota 3 1054b31-2 has said that contrariety is a kind of difference, and this is Aristotle's starting-point in locating contrariety.[19] We can see him as following a procedure from the Topics: first put the definiendum in the right genus, then give it an ἴδιον, a description that distinguishes it from everything else in the same genus, then work to turn this into a more adequate definition, replacing a true-but-not-clear description of what the thing is with a true-and-clear description. To give an ἴδιον locating contrariety within the broader domain of difference, Aristotle observes that difference comes in degrees: X can differ from Y more than X' does, not just in the sense that they can differ at different levels (horse differs from man in species, while oak differs from man in genus), but in that, if they are all species of the same genus, X can differ from Y in species within that genus more than X' does. Otherness does not come in degrees, and presumably the reason why difference does and otherness does not is that difference is a privation of sameness while otherness is (almost) a pure negation of sameness. Privation itself comes in degrees, as Aristotle will emphasize at 1055a33-5 in speaking of the "complete privation": between the possession and the complete privation (or between the complete possession and the complete privation) are incomplete privations, as an inability to do something at all is a complete privation of the power, and an inability to do it well is an

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against the immediately following b28-31, where things that differ in genus are things that don't share a matter, such as things in different categories. I am inclined to think that the pseudo-Alexander is right anyway, but then I think we would have to say that Aristotle has simply lost track of his argument when he adds "for everything that differs differs either in genus or in species" and the following lines. to avoid this, Bonitz takes "τοῦτο δὲ τὸ ταὐτὸ γένος ἢ εἶδος" (or as he prints it, following what the pseudo-Alexander may have read, "τοῦτο δὲ τὸ ταὐτὸ ἢ γένος ἢ εἶδος") to mean "this same is either genus or species": i.e. if they differ in genus, they differ from each other by the same thing, namely genus (although there is no genus which is the same for both). Ross, in a quick note, follows Bonitz (who had spent two pages agonizing about it). I grant the attractions of not making the passage incoherent, but this just doesn't seem to correspond to Aristotle's insistence that in different things, as opposed to things that are merely other, there must be something that is the same, as Aristotle says first in Δ9 and again in Iota 8, and presupposes in Iota 4. Paolo Fait, in Centrone pp.91-3, discusses the difficulty, and suggests that Aristotle may have meant to say that things that differ share a common genus or species except in the case of things differing in genus, i.e. things of different categories. but it is not easy to get this out of the text. as he says, "the question remains open"

[18] the issue is connected with issues in the text and interpretation of the next two clauses, "ὅτι δὲ καλῶς τοῦτο ὑποτιθέμεθα, δῆλον ἐκ τῆς ἐπαγωγῆς· πάντα γὰρ διαφέροντα [τε?] φαίνεται καὶ ταῦτα" or the like. Ross takes "τοῦτο" to mean the assertion of b31-2 that contraries are different, "for these too are seen to differ, not just to be other etc.", explained in the following lines; Bonitz suggests reading "πάντα γὰρ τὰ διαφέροντα φαίνεται καὶ ταὐτά", "all different things are seen also to be the same, not just to be other etc." ταῦτα and ταὐτά are paleographically equally possible: A^bM simply omit the ταυτα, E has ταυτά, J apparently splits the difference with ταῦτά (what looks like a circumflex could be intended as a crasis-mark, but J's practice is to write the crasis-mark over the α, not the υ). Bekker prints a comma after φαίνεται, taking καὶ ταῦτα with the following participial clause

[19] this supports Ross' construal of the last sentence of Iota 3 against Bonitz: Aristotle is beginning the process of locating contrariety already in the last two sentences of Iota 3

incomplete privation. And so one thing can differ from another within the same genus by a more or less complete privation of its specific attributes, as black differs from white more than gray does. Aristotle uses this observation to give an ἴδιον of contrariety as "greatest difference" (Iota 4 1055a3-10)--not as the greatest difference, since there is no one difference which is greater than all others, but a greatest difference, we might say a maximal difference,[20] a difference than which there is no greater. Aristotle speaks here as if there will be one such maximal difference within each genus: if X and Y are opposed extremes within the same genus, then there will be nothing more different from X than Y; there are other things that are not in the same genus as X, and so have less in common with X than Y does, but these things are merely other than X, and not different from X.[21] In all this argument Aristotle relies on the Δ28 account of genus, where "things are called other in genus whose primary substratum is other, such that one is not resolved [ἀναλύεται] into the other nor both into the same thing" (1024b9-11),[22] or as Iota 4 now puts it they "have no path to each other" (1055a6-7); by contrast, things within the same genus are supposed to come-to-be out of each other, or at least they constitute a single range of variation which we can represent something as traversing, even if nothing actually makes this transition temporally (e.g. no individual starts as a cat and becomes a dog). So "for things differing in species the comings-to-be are out of contraries as extremes" (Iota 4 1055a8-9), following the Physics I analysis of coming-to-be; these contraries will be within the same genus, and since the extremes within any domain are the things that differ the most within that domain, the contraries will be the things that differ the most within the genus (a9-10).[23] (If something changes by, say, becoming hotter, it may not be clear whether there are extremes of perfect hotness and perfect coldness, but anyway hot and cold are themselves contraries, whether or not there is a hottest and a coldest.)[24]

   Aristotle apparently thinks that "greatest difference" is only an ἴδιον of contrariety, whereas "perfect/complete [τελεία] difference" is a definition: the reason is presumably that "greatest" is a superlative and so involves comparison to other things, whereas perfect/complete is an intrinsic attribute. (See Iα2 above for discussion of the status of superlative ἴδια, and more generally of the function of ἴδια in definition, in the context of the search for a definition of wisdom itself.) He draws heavily here on Δ16's discussion of τέλειον and especially on its account of the primary sense of τέλειον as "not admitting excess, or anything's being outside it, within each genus" (1021b32-1022a1): Δ16 says that such things are called τέλεια from "having a τέλος", where a τέλος is a kind of extreme [ἔσχατον] (1021b24-5).[25] Iota 4 cites each of these expressions, with close verbal echoes of Δ16, applying each of them in the most straightforward way to argue that the greatest in any genus, and therefore in particular the greatest difference, is also τέλειον in this primary sense (Iota 4 1055a10-16); and he says that there will also be senses

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[20]cp. Iγ2a above on maximal continuous bodies

[21]or, if they are in some sense different from X, their difference from X cannot be compared with the difference of Y from X, so that it could be said to be greater than that difference: cite 1055a6-7 and a25-7, with discussion of the difficulties of the latter passage and Ross' proposals, if not already discussed

[22]Iota had referred to this discussion just above, "it has been determined elsewhere which things are the same or other in genus," Iota 3 1055a2 … note dispute about which chapter he's referring to, I've already cited this

[23]besides Physics I, see Δ10 1018a21-2--there these extremes are just said to be opposites, not more precisely to be contraries, but see further spelling out below, on the second half of Iota 4

[24]see below on this issue as it arises in Iota 7, where it is easier to determine Aristotle's attitude

[25]raise question how positive and intrinsic this is, given that what's basic to the various senses of τέλειον in Δ16 seems to be οὗ μὴ ἔστιν ἔξω or μὴ ἔχον ὑπερβολήν, which sound as if they, like "greatest," depend on what else there isn't … still, seems pretty clear these are supposed to be founded on an intrinsic attribute of the thing

of "contrary" corresponding to the non-primary senses of τέλειον mentioned in Δ16, each defined by having some relation to what is τέλειον in the primary sense (Δ16 1022a1-3, Iota 4 1055a17-19). Aristotle then says, as confirmation of the correctness of the definition, that we can also derive from it that "necessarily all the other definitions [or marks, ὅροι] of contraries are true" (1055a23-4): he then not only rederives the preliminary definition of contraries as things that differ most, but shows that three other classes of things that were "said to be contraries" in Δ10, namely the things that differ most of those that are in the same genus, in the same recipient, or under the same (cognitive) power, also fall under the final definition of contraries (Δ10 1018a27-30, Iota 4 1055a24-33). This is a particularly clear case of a pattern that we saw in Iγ1b above, that Δ's "collections" of the different things that fall under each term are neither "merely empirical" (as Bonitz suggested) nor independent of the larger argument of the Metaphysics, but are designed to serve the inquiry into ἀρχαί pursued in later books of the Metaphysics: both Δ10 and Δ16 are designed to function together in Iota 4, which in turn is designed to serve the critique of Academic contrary ἀρχαί existing outside the genera. And Iota helps to show how the different senses distinguished in Δ, or the different descriptions of the same sense, are related.

   As a byproduct of the argument of Iota 4 thus far, Aristotle also claims to derive the corollary that one thing cannot have more than one contrary ("for nothing would be more extreme than the extreme, nor would there be more than two extremes of a single interval," 1055a20-21),[26] delivering on Γ2's promise of a philosophical investigation of "whether one thing has [at most] one contrary" (1004b1-4, in turn echoing B1 995b25-7). That a given thing cannot have more than one contrary is the presupposition of a common strategy of dialectical argument (e.g. cowardice and ignorance are the same, therefore their contraries courage and wisdom are the same, Protagoras 360c6-d5; this fails if a single thing can have two distinct contraries, courage and wisdom):[27] so Aristotle's argument here can be seen as giving a philosophical justification of this assumption of the dialecticians. This would help to fulfill Γ2's promise that philosophy will treat scientifically the things that the dialecticians treat on the basis of common opinion. But also, and much more to the point within the ongoing argument of the Metaphysics, Aristotle will use the maxim that a single thing has only a single contrary in the following chapters, Iota 5-6, to attack crucial Academic pairs of contrary ἀρχαί: "since one thing has [only] one contrary, someone might raise an aporia how the one and the many are opposed, and how the equal is opposed to the great and the small" (so the beginning of Iota 5, 1055b30-32;[28] see Iγ2c below for how Aristotle develops the arguments). {Eudemian Ethics II,3 1220b31-3 says that the extremes are contrary to each other and to the mean. The latter part of this is dubious, and Aristotle tries to justify it by saying "the mean is each [extreme] in relation to [πρός] the other [extreme], e.g. the equal is greater than the less and less than the greater": i.e. since A and C are contrary, and B, when compared to C, takes on the role of A [since B is πρός C as A is πρός B], B can be said to be contrary to C, and it can likewise be said to be contrary to A. So each extreme will have two contraries, the other extreme and the mean [although we might say that the less and the equal are contrary to the greater, not quâ two different things but quâ the same thing, namely less]; and the mean will have two contraries, namely the extremes. Note also Nicomachean Ethics X,2 1173a6-13, where Aristotle cites from someone, apparently Speusippus, but also apparently endorses, the

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[26]certainly nothing will be more extreme than the extreme, but we might wonder why a range of variation cannot have more than two extremes--why couldn't it be Y-shaped?

[27]also cite from the Topics rules for testing claims by looking at the contraries of the terms

[28]minor textual issues: ἓν ἑνί ἐστιν ἐναντίον EJ, ἓν ἑνὶ ἐναντίον A^bM; τῷ μεγάλῳ καὶ τῷ μικρῷ EJ, τῷ μεγάλῳ καὶ μικρῷ A^bM. in the latter case it seems fairly important to keep the EJ reading

claim that evils of excess and deficiency are opposed to each other and are also both opposed to what is neither: but since he speaks here only of "opposition," not of "contrariety," this is unproblematic.}

We have already seen that difference, as a privation of sameness, comes in degrees, with intermediates between possession and complete privation (or between complete possession and complete privation); and this is why there are also degrees of difference from whiteness, with the contrary of whiteness being the complete privation of sameness with whiteness. In the second half of Iota 4 (1055a33-b29), Aristotle pushes this line of thought to conclude that "the primary contrariety is possession and privation; not every privation, for privation is said in many ways, but whatever [privation] is perfect/complete" (1055a33-5). As the tag "for privation is said in many ways" signals, Aristotle is now adding Δ22 on privation (flagged again at 1055b6-7) to his argument in addition to Δ10 on the modes of opposition and Δ16 on perfect/complete. The formulation is initially surprising, since from Δ10 (and Categories cc10-11) we might have thought that contraries and possession-privation and contradictories and correlatives were four distinct and non-overlapping kinds of opposites. However, as in the development of the definition of contrariety in the first half of Iota 4, we are now supposed to be looking for deeper reasons why some things are contraries, and the result is supposed to be that something is a contrary because either it, or something it presupposes, is a privation. This leads to a reexamination of the relations among the four modes of opposition, which will have applications to the discussion of intermediates in Iota 7, but more importantly in the critique of Academic theories of contrary ἀρχαί in Iota 5-6 and in Metaphysics N.

Aristotle has already said that "for things differing in species the comings-to-be are out of contraries as extremes" (1055a8-9), following the analysis of Physics I; but Physics I also identifies those contraries as form and privation. If something can change from X to Y, X and Y must be incompatible, and only opposites, or things implying opposites, can be incompatible (so Δ10 1018a22-5, also Iota 5 1055b37-8). Furthermore, the source of their incompatibility is contradiction--if X and Y are incompatible, it is because X and not-X are incompatible and Y entails not-X--and so, as he says now, contradictory opposition is the primary among the four modes of opposition (Iota 4 1055a38-b1). However, some contraries have intermediates, which contradictories (as shown in Γ7) do not, so contrariety cannot be immediately reduced to contradiction (b1-3). But privation and possession do in some cases admit intermediates, and a privation is a kind of contradictory [ἀντίφασίς τις], namely "a kind of contradictory or incapacity determined by, or taken together with, the recipient" (1055b7-8)--the privation of F-ness is the absence of F-ness in something which is naturally capable (or whose genus is naturally capable) of being F.[29] And, as we have seen, this absence, or this cause preventing something from being F, can be complete or incomplete. While contradiction is the source of opposition in general, Aristotle proposes that privation understood in this way is the source of opposites-with-intermediates, and thus of contrariety. Perhaps the best way to explain this is to say (as I did above) that contrariety is complete privation of sameness, and thus that the contrary of X is the complete privation of X, or of the positive attributes [ἕξεις] that constitute X, and that the intermediate differentiae are the incomplete privations. Aristotle instead invokes again the analysis of coming-to-be from Physics I (1055b11-14, cp. 1055a8-9), this time stressing that the coming-to-be is not merely of one contrary out of another but of form out of privation or vice versa; and then he adds the clarification about complete and incomplete privations (1055b14-17).

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[29]there are relevant texts both in Δ22 on privation and in Δ12, which talks about ἀδυναμίαι alongside δύναμεις. also: note (or refer to later discussion of) the issue of which kinds of opposites can have intermediates

The Physics does not tell us, when hot comes-to-be out of cold, whether cold is the privation of hot or vice versa or whether they are both positive attributes; perhaps we are just supposed to say that if the hot is something positive it comes-to-be out of the privation of the hot, and that if the cold is something positive it comes-to-be out of the privation of the cold, and that it seems superfluous to posit two positive attributes each coextensive with the privation of the other. But Aristotle suggests that it will be "inductively" obvious (1055b17-18) that one of each pair of contraries is privative. Perhaps he is thinking of something like the Selection of Contraries, and perhaps he expects his Academic opponents to agree that all contraries can be traced back to primitive pairs of contraries such as the one and the many, so that if these basic pairs each have a privative member, so will the pairs derived from them. But Aristotle sets this out, suggesting that it is obvious which member of each pair is privative, mostly as a trap for his Academic opponents: he immediately goes on, in Iota 5-6, to attack their assumptions about which of unity and multiplicity, equality and inequality, is positive and which is privative.[30]

<div style="text-align:center">

Iota 7-10: intermediates and things other in species,
and how they arise from the genus and the contrary differentiae

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The anti-Academic arguments of Iota 5-6, although they are the most important consequences of Iota 3-4 for the larger argument of the Metaphysics, are formally a digression within Iota. Before turning to Iota 5-6 in the following section Iγ2c, I will briefly examine Iota 7-10, which continue more directly the argument of Iota 3-4. As we saw, what Aristotle said about difference and differing things at the end of Iota 3 was a preliminary account, sufficient to distinguish difference from otherness and to support the account of contrariety in Iota 4. But now, given an understanding of contraries as relative ἀρχαί within each genus, Aristotle turns back to the other differing things within the genus, devoting Iota 7 to intermediates [τὰ μεταξύ, literally, things between] and arguing that they are derived from these ἀρχαί and are genus-bound. He then devotes Iota 8, with its digression Iota 9, to things "other in species" or "differing in species," taking up Δ10 1018a38-b8 on things other in species, unifying Δ9's various descriptions of things that differ, and giving a new argument against Platonic separately existing genera; Iota 10 draws the polemical corollary that there cannot be incorruptible Forms conspecific with corruptible things.

Iota 7 is constructed as an argument that "all intermediates are in the same genus, and are intermediate between contraries, and are composed out of the contraries" (1057b32-4): "composed out of" has the implication that the contraries are the ἀρχαί of the intermediates, and these contraries must also be in the same genus as what is composed out of them (1057a19-20). Aristotle starts by paraphrasing the Physics definition of "between": X is "intermediate" or "between" Y and Z just in case anything that changes from Y to Z must first become X (Iota 7 1057a21-6, cf. Physics V,3 226b23-5). As in Iota 4, he does not seem worried about whether the change actually takes place in time, but rather uses the notion of change to demarcate genera as ranges of variation within which change can take place; as in Iota 4, on he is drawing on Δ28 on genus. Given this understanding of genus, all intermediates must be homogeneous, with each other and with the things between which they are intermediate (1057a19-20, 28-30).

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[30]two things that have to be added above: (i) a change in the promise for what you'll do with Iota 7-10; (ii) make sure you've got a reference to N1 on contraries not ἀρχαί in the strict sense (it's several times below in Iγ2c but seems to have been eliminated from Iγ2b where it was before), and likewise for separate genera if that's no explicit (but I think it's OK)

Intermediates must be intermediates between opposites, since change is always from an opposite to its opposite. Furthermore, these must be the kinds of opposites that belong to the same genus, and that have intermediates, and so they cannot be contradictories or correlatives, or at least not those correlatives which are not also contraries; so these opposite extremes will be contraries, perhaps the special contraries which are also possession and privation, or which are also correlative as what exceeds and what is exceeded (1057a30-b1, cf. Physics V,3 227a7-10). Now the intermediates will either be species of a common genus, in which case they will be "out of" [ἐκ] the genus and its differentiae, or else they will themselves be the differentiae of the genus: these latter intermediates will be prior, and they will be intermediate between the primary contraries, namely the two opposite extreme differentiae within this range of variation (relying on Iota 4 for the conclusion that in any range of variation there are only two such extremes). These contrary extremes are not themselves composed out of each other, so that they are ἀρχαί, in the relative sense that nothing homogeneous with them is prior to them. But when something changes from the extreme Y to the contrary extreme Z, it must first pass through intermediates such as X, and this can only be because X is "more" than Y and "less" than Z in respect of the predicate which is acquired through the change; and Aristotle thinks we can infer that "what is more than one thing and less than another is somehow composed out of the things which it is said to be more than and less than" (1057b27-9), so that it will be composed out of the contrary extremes.

Aristotle's thought here is presumably that the lukewarm is composed out of the hot and the cold because to be lukewarm is just to be hot in certain respects (namely, hotter than a certain range of things) and cold in other respects (namely, colder than another range of things). Is Aristotle presupposing that there will always be e.g. an absolute hot and an absolute cold (or an absolute hot and a complete privation of hot), so that these could be prior, and what is hot in some respects and cold in some respects would be derivative from them? If so, he would be either ignoring or deliberately rejecting an alternative model, the ἄπειρα of Philebus 24a1-25a4, ranges of variation with no extremes, in which everything that is (say) hot would be both hot and cold, hotter than some things but colder than yet hotter things. But given that Aristotle has just spoken in Iota 5 about large and small (and has mentioned them here again as contrary-correlatives, Iota 7 1057b1), contraries in continuous quantity which obviously do not have absolute extremes, it would be very surprising if he had forgotten about this example in Iota 7. Rather, he must mean that in such a case the contrary extremes are the large and the small, not an absolute large and an absolute small (which do not exist) but the relatives themselves, because large and small are intrinsically species of the category of πρός τι rather than of quantity (Categories c6 5b27-9): and this is just what he means in Iota 7 by describing large and small as πρός τι which are also contraries.[31] While the large and the small are, in a sense, ἀρχαί of continuous quantities, because they are πρός τι they cannot be prior in οὐσία to quantities, but

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[31]he does not say this in so many words, but contrasts μέγα καὶ μικρόν (1057b1), which have intermediaries, with τῶν πρός τι ὅσα μὴ ἐναντία (1057a37), which do not. this passage, and Iota 5 on large and small, at least verbally contradict Categories c6 5b30-6a11, which denies that large and small are contraries; I will come back to this issue in discussing Aristotle's criticism of Plato on large and small below. query here: perhaps the case of large and small is different from the case of hot and cold, since the contrary extremes "hot" and "cold" (not necessarily a maximum hot or cold, but not the relative "hotter" and "colder") are qualities, whereas the contrary-correlative extremes "large" = "larger" and "small" = "smaller" are not quantities but relations. this is going to be a difference between qualitative and quantitative ranges of variation, since qualities (often) admit degrees, as (often) do relations, but quantities do not. does this make a difference for what he's saying in Iota 7? note Aristotle does seem to believe in a maximum heat, so α1 on fire

rather depend on quantities for their existence; and this will be crucial in the criticism of Academic material ἀρχαί in <u>Metaphysics</u> N, to be discussed in Iγ2c and Iγ3 below. Where the contrary "ἀρχαί" are correlatives, presumably they cannot be a positive attribute and its complete privation, despite the conclusion of Iota 4 that the first contraries are possession and complete privation, or that privation is the origin of opposites-with-intermediates. Rather, as Iota 5 argues in the case of the large and the small (discussed Iγ2c below), the intermediate, equality, will be the privation of both the contraries together; or perhaps, more precisely, equality will be their complete privation, and degrees on either side of it will result from incomplete privations.

Continuing his program of an aetiological investigation of the attributes of being described in Δ9-10, Aristotle turns to investigate otherness in species, described at the end of Δ9-10, Δ10 1018a38-b8.[32] Iota 8-9 are formally marked at beginning and end as an investigation of otherness in species, or equivalently of difference in species, as Iota 7 was marked at beginning and end as an argument that intermediates are composed out of contraries; and the end of Iota 8-9 also confirms that the investigation of otherness in species has been causal ("so it has been said what it is to be other in species, and why some things differ in species and some do not," Iota 9 1058b24-5). Things that are other in species must be in the same genus (Δ10 1018a38-b2, Iota 8 1057b37): as Aristotle now puts it, what is other in species is "another something than something [τινὸς τὶ ἕτερον]," e.g. another animal than horse (Iota 8 1057b35, cited above), so that this kind of otherness presupposes the genus as its ὑποκείμενον.[33] We would then expect the conclusion to be that the ἀρχαί of things that are other in species are the shared genus and its differentiae, or rather the shared genus and the contrary extreme differentiae out of which, as Iota 7 has argued, all the other differentiae are composed. And indeed Aristotle says this, but he adds further precisions.

Aristotle starts with a clarification of what we mean by "genus" when we say that things that are other in species must be in the same genus. "I call 'genus' that one and the same thing which both are, it not being differentiated [merely] <u>per accidens</u> [μὴ κατὰ συμβεβηκὸς ἔχον διαφοράν], whether it exists as a matter or otherwise" (1057b37-1058a2).[34] He is starting here from Δ28's remark that the genus is the ὑποκείμενον of the differentiae (1024b3-4, cf. b5-6 and b8-9), and using the differentiae to determine what the genus must be: "for this differentia must be an otherness <u>of the genus</u>: for I call a differentia of a genus an otherness which makes [the genus] itself other" (1058a6-8). This imposes a real constraint on what the genus can be. Not every otherness between two things that are X is an otherness <u>of X</u>. Thus the otherness in color between a white horse and a black horse is not an otherness of horse; it does not differentiate

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[32]Jaeger double-bracketed the section Δ10 1018a38-b8, arguing that there was no reason for this section to be at the end of Δ9-10, and suggested putting it at the end of the discussion of otherness in Δ9; but since Iota has been fairly closely following the order of Δ9-10, with digressions such as Iota 5-6, it seems clear that Aristotle did intend Δ10 1018a38-b8 to stand here at the end after the discussion of contraries, corresponding to Iota 8-9, and separate from the Δ3 discussion of otherness and difference, corresponding to Iota 3. {cp discussion in Iγ1b}

[33]see above on Iota 3 and the verbal contradiction with Iota 8. if not noted there, note against Ross' note on the Iota 8 passage: τι is predicate nominative (the shared genus), not, as Ross takes it, accusative of respect (which would have to mean the differentia). NB but see Bonitz ad loc, whom Ross is apparently following: Bonitz takes it to be accusative of respect, but the shared genus. is this defensible? for Bonitz it goes with an attempt to reconcile Iota 3 and Iota 8--can this work?. note also, here or before, the odd 1058a11-12, ἡ δὲ διαφορὰ ἡ εἴδει πᾶσα τινὸς τὶ etc.

[34](i) in 1057b38 reading ὃ EJ Bonitz Ross against ᾧ A^bM Jaeger (and rejecting Jaeger's turning ὅ into ᾧ in the parallel at Iota 3 1054b30, which d cite), and taking ὃ as predicate nominative, not accusative of respect; (ii) note the funny mistranslation of the participial clause in Ross' "analysis"; it's translated correctly in Barnes, d check whether Barnes is here correcting Ross (and compare the two Ross versions). also a minor textual issue, ὡς ἄλλως, M agrees with A^b (as it almost always does in Iota): the reading of EJ seems better

horse per se, but only per accidens, while it does differentiate color per se; being a white horse and being a black horse involve different ways of being colored, but not different ways of being a horse. Likewise, the otherness in shape between a golden triangle and a golden square is not an otherness of gold; it does not differentiate gold per se, but only per accidens, while it does differentiate shape per se; being a golden triangle and being a golden square involve different ways of being shaped, or of being two-dimensionally extended, but not different ways of being gold. So horse is not the genus of white horse and black horse, i.e. a genus of which white horse and black horse would be species, and gold is not the genus of golden triangle and golden square. White horse and black horse are not, in fact, other in species, because there is no common genus which their otherness differentiates: their otherness differentiates color, but color cannot be their genus, because it is not said of them in the τί ἐστι, as is reflected linguistically by the fact that is said of them only paronymously (they are colored, not color).[35] Perhaps golden triangle and golden square are other in species, but if so this would be because they are plane figures in the τί ἐστι (and are not gold in the τί ἐστι, being golden rather than gold), and their otherness differentiates plane figure per se.[36] As Δ28 puts it, the genus is οὗ διαφοραὶ λέγονται αἱ ποιότητες (1024b5-6), that is, the X such that the qualities are differentiae of X: triangularity and squareness may be qualities of gold, but they are not differentiae of gold, but rather of figure or of two-dimensional extension, and so not gold but figure or plane surface is their genus. In calling these differentiae qualities of their genus, Δ28 is drawing on Δ14, which argues that, although triangularity and squareness are in the most familiar sense qualities or suchnesses of the gold, in a more fundamental sense "the differentia of the οὐσία is called such [ποιὸν], as man is such an animal [ποιόν τι … ζῷον] because he is biped, and horse because it is quadruped, and a circle is such a figure in being [a figure] without angles, on the ground that the differentia according to the οὐσία is a quality" (1020a33-b1).[37] So triangularity and squareness are qualities per se of plane figure or surface, and only indirectly of gold, and thus, as Δ28 concludes, "plane surface [τὸ ἐπίπεδον] is the genus[38] of plane figures, and solid of solid figures, for each of the figures is such a plane surface [ἐπίπεδον τοιονδί] or such a solid; and this [sc. plane surface or solid] is the ὑποκείμενον of the differentiae" (1024a36-b4).

The main new conclusion that Iota 8 wants to draw from this is that, if animal is in the relevant sense the genus of man and horse, "this animal must itself be other for the two of them, e.g. in the one case a horse and in the other case a man: thus this common thing is 'other than each other' in species, so that one of them will be per se this kind of animal [τοιονδὶ ζῷον] and the other will be that kind of animal, e.g. in the one case a horse and in the other case a man" (1058a3-6, cited above). Aristotle's intention here is to undermine the Platonist claim that the shared genus is in the strict sense an ἀρχή of the things that are other in species (as the Platonist

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[35]when Aristotle says at 1057b37-8 that the genus is the same thing that is said of both of them, he surely means that it is said in the τί ἐστι: this constraint is made explicit at Δ28 1024b4-5 and at Topics I,5 102a31-2, "genus is what is said of several things differing in species, predicated in the τί ἐστι"

[36]golden triangle cannot be both gold and triangle in its οὐσία, unless gold and triangle are united in such a way that gold is intrinsically differentiated by triangle. for Aristotle against the Timaeus on golden triangles see Iβ4b and IIβ below

[37]there are minor textual issues not affecting the sense. note parallels cited by Bonitz ad locum; but these say only ποιόν or ποιόν τι, not ποιότης. then add, from footnote in Iγ1b: qualities in the ordinary categorial sense are described, derivatively from this, as πάθη τῶν κινουμένων ᾗ κινούμενα, καὶ [= i.e.] αἱ τῶν κινήσεων διαφοραί (it is rather nicely argued that virtues and vices fall under this description as being the differentiae of virtuous and vicious ἐνέργειαι/κινήσεις)

[38]reading τὸ γένος EJ rather than γένος Aᵇ Jaeger, not that it matters

side of B#7 maintains), which would require that the genus be prior κατ᾽ οὐσίαν to its species (and to the individuals that fall under them), which would require in turn that the animal in horse and the animal in man be numerically or at least specifically one, i.e. that animal be one at least in the way that horse is one, or that man is one. But, Aristotle says, if this were so then animal would not really be the genus of horse and man, but would be a ὑποκείμενον of them only in the way that gold is the ὑποκείμενον of golden triangle and golden square, i.e. it would be differentiated by quadruped and biped merely per accidens. And then horse and man would not be other in species; or, if horse were other in species and thus "another something" than man (1057b35, cited above), it would not be another animal than man, and animal would not be its genus: just as golden triangle is either not other in species than golden square, or, if it is other in species, it is so through being another figure and not through being another gold, and gold would not be its genus.[39]

In Iota 8 Aristotle uses the conclusion that the genus must itself be other in its differing species to infer that "none of the species of the genus is either the same in species, or other in species, than what is called the genus" (1058a21-2): animal itself can be neither identical with any of the standard species of animal (for why should it be man any more than horse?), nor a further species of animal alongside these. Aristotle deduces this from an account of what makes for sameness and otherness is species (the official topic of Iota 8-9), which turns on contrariety and integrates results from Iota 3-4 and 7. "This differentia must be an otherness of the genus: for I call a differentia of a genus an otherness which makes [the genus] itself other" (1058a6-8, cited above), and Aristotle now adds that it can do this only through a contrariety, which is a complete/perfect differentia, and which is always within a genus (a8-16).[40] Aristotle actually says "so difference is contrariety" (1058a16), which is an exaggeration. But presumably the thought, drawing on Iota 7, is that if X and Y are different and are not contraries, then they are intermediates between two contraries (or one is an extreme and the other is an intermediate) and are composed out of these contraries; and the genus will be divided by these contrary attributes, not just in the sense that some species are F and other species are un-F, but in the sense that different species are distinguished by their degrees of F-ness, or (if F and its contrary are correlatives) by the fact that some of them are F in relation to others.[41] Contrariety is thus the sought-for cause of otherness in species: "for [γάρ][42] this is what it is to be other in species: being in the same genus, to have a contrariety, being indivisible [ἄτομα]--and those are the same in species which do not have a contrariety, being indivisible" (1058a17-19)--that is, X and Y are other in species if they belong to some genus, and are distinguished by some contrariety that differentiates that genus per se (because X is F and Y is un-F, or because they are F to different degrees, or because X is F in relation to Y), and neither X nor Y is itself differentiated per se by

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[39]note similarities to arguments in Z12 and Z14 arguing against the Platonist side of B#7, discussed IIδ below; also note B#9. the strategy of arguing that the genus must be strongly united with each differentia (if they are to be genus and differentia in the λόγος of something per se), and therefore that the genus is not strongly united with itself (and so cannot be an ἀρχή as claimed) is common to Iota 8 and to these chapters of Z … the fact that gold is the matter underlying golden triangle and golden square cannot be the reason why it is not their genus, since Aristotle explicitly allows here that the genus may be a matter. {Aristotle is probably referring to, or anyway thinking of, the three possibilities explicitly left open at Δ28 1024b6-8}

[40]add note on this text?

[41]needless to say actual division of biological genera will be more complicated than this; Aristotle is giving a simplified scheme, which looks as if it is his take on the Philebus on division and the ἄπειρον (in each case a contrary pair) in genus-species trees

[42]reading γάρ EJ rather than ἄρα A^b Bekker Bonitz Christ Ross Jaeger

any further contrariety. The γάρ in 1058a17 (for which most modern editors wrongly print ἄρα) refers us back to the Δ10 account of otherness in species: "those things that, being of the same genus, are not subordinated one to another, are other in species, and those that, being in the same genus, have a differentia, and those that have a contrariety in their οὐσία; and contraries are other in species than each other, either all of them or those that are said primarily, and those things in the ultimate species of the genus whose λόγοι are other[43] (as man and horse are indivisible [ἄτομα] in genus [i.e. neither is divisible as a genus into species] and their λόγοι are other), and those which, being in the same οὐσία, have a differentia; and those things which are said oppositely to these are the same in species" (Δ10 1018a38-b8). All of these descriptions of otherness in species, and the Δ9 descriptions of difference (1018a12-15, cited above), can now be reduced to the possession of a contrariety; if X and Y are divided by a contrariety, this guarantees that they are the same in genus; and X and Y will be each the same in species with itself (i.e. indivisible into lower species), so that they can be other in species than each other, if neither X nor Y is internally divided by any further contrary. For, as Aristotle says now in Iota 8, "in the division and in the intermediates, contrarieties arise until we come to indivisibles [ἄτομα, i.e. <u>infimae species</u>]" (1058a19-21): that is, every species which is not indivisible is divided by some further contrariety, and where there are intermediates between two contraries, they are divided by their degree of these contraries into intermediates which are indivisible with respect to these contraries (although, if they are not <u>infimae species</u>, they will be divisible by <u>other</u> contrarieties).[44] And because X and Y are other in species only when they are divided from each other by a contrariety, and are the same in species only when they cannot be divided by any further contrariety, X cannot be either other in species or the same in species as its genus. It cannot be the same in species, because the genus is divisible by contraries and so is not the same in species as itself; nor other in species, because X's genus does not itself fall under either contrary, being characterized not by the contrary of X's differentia but merely by its negation (the genus animal is not <u>irrational</u>, but merely not rational)--"appropriately: for the matter is manifested through negation, and the genus is the matter of what it is said to be the genus of" (1058a23-4). And X and Y also cannot be other in species if they are other in genus, since contraries are always within the same genus, and so no contrariety can divide X and Y from each other if they do not fall under the same genus. Perhaps X can be white and Y black even if they do not share a genus, as long as they share an accidental description such as "colored," but this contrariety does not make them other in species: that requires that they share something <u>in their essence</u> which is divided <u>per se</u> by a contrariety that distinguishes them, and which is therefore a genus by the definition of Iota 8 1057b37-1058a2.

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[43]text-issue in this clause. ὅσων ἐν τῷ τελευταίῳ τοῦ γένους εἴδει οἱ λόγοι ἕτεροι is hard to construe, and Ross suggested "ὅσων, ὄντων τελευταίων τοῦ γένους εἴδων"; Ross suggests that if the transmitted text is kept, it would mean something like "things whose λόγος is different in the ultimate species of the genus" {get the wording from his translation}--i.e., really, in the ultimate specific differentia. but this seems impossible to reconcile with the explicative "οἷον ἄνθρωπος καὶ ἵππος ἄτομα τῷ γένει οἱ δὲ λόγοι ἕτεροι αὐτῶν". ἄτομα τῷ γένει means "not further divisible," as the τελευταῖα τοῦ γένους εἴδη, and not "sharing the same genus": this becomes clear from the connected passage of Iota 8. {can ἐν εἴδει mean "in the role", as in ἐν ὕλης εἴδει? is that possible with the adjective? seems too bizarre}

[44]two interpretive issues: (i) at a17-19, Ross takes ἄτομα (just the second time??) as referring to individuals rather than to <u>infimae species</u>; this is clearly wrong, and Bonitz takes the reasonable view; (ii) at a19-21 both Bonitz and Ross take τὰ μεταξύ to be things in intermediate positions on the tree between <u>summa genera</u> and <u>infimae species</u>--this is possible (then ἐν τῇ διαιρέσει καὶ ἐν τοῖς μεταξύ would be hendiadys; or καὶ ἐν τοῖς μεταξύ would mean "<u>even</u> in the intermediate stages"), but seems unlikely given what τὰ μεταξύ has been meaning, and the more obvious reading makes equally good philosophical sense

With this the main argument of Iota is finished: neither the genera nor the contraries are ἀρχαί strictly speaking, since the contraries are dependent on the genus and the genus is not a separate determinate nature but something negative and indeterminate like matter, but the genus and its appropriate contraries are in a weak sense the ἀρχαί out of which the differentiae and species within the genus are composed. But there are loose ends which Aristotle pursues further in the appendices Iota 9 and 10. Iota 8 has said of a species like horse that it is "indivisible in genus," in that it has no contrariety which would divide it per se, so that it would be a genus divided into different species. But before closing the investigation of "what it is to be other in species, and why some things differ in species and some do not," (1058b24-5, cited above--the end of Iota 9, looking back on Iota 8-9 as a whole), Aristotle raises an aporia which is supposed to help illuminate which contrarieties produce specific difference and why. It is easy to explain why white and black do not produce specific difference in animal (or in horse): they are not said of animal per se (are not "proper affections [οἰκεῖα πάθη]" of animal, Iota 9 1058a37). But male and female are said of animal per se; so why is it that they do not produce difference in species, but rather are both found within each infima species of animal (1058a29-34)? Aristotle's response is to reanalyze the case of white and black: the deeper reason why they do not differentiate animal per se is not that they are not proper affections of animal (i.e. that they can also be said of non-animals), but that they are said of animal only as taken together with its matter (thus animal is white only per accidens, because, say, the composite individual Bucephalus is an animal and Bucephalus is white). White and black do not introduce a difference into the λόγος of animal because they do not attach to the λόγος but only to the matter or the composite. And, coming back to the contested case, "male and female are proper affections of animal, not in the οὐσία but in the matter and the body, which is why the same seed when it has undergone some affection becomes either female or male" (1058b21-4). Thus on the theory of Generation of Animals IV-V the same maternal seed, acted on by the same paternal seed, will turn into a male or female member of the species, just as it will turn into a dark-haired or light-haired one, on account of heat and cold and other qualities in the matter; and any feature of the offspring that can be determined by such qualities in the matter rather than by the λόγος borne by the seed (on the theory of Generation of Animals IV-V, the paternal seed) cannot be a specific difference.

By contrast, it would be absurd to suppose that the same thing can be either corruptible or incorruptible (so Iota 10), so that the same seed might develop either into a corruptible or an incorruptible animal: this would fall back into the view attacked in B#10, that corruptible and incorruptible things arise out of the same ἀρχαί, as if, all being originally offspring of gods, "those who did not taste the nectar and ambrosia became mortal" (B#10 1000a12-13). But--to continue the thought-experiment--the seed would itself be either incorruptible or corruptible, and if incorruptible it could not become corruptible, and if corruptible it could not become incorruptible; being corruptible or incorruptible are attributes which a thing has always and as a consequence of its essence. Aristotle draws the consequence that "there cannot be Forms such as some people say, for there would be both a corruptible and an incorruptible man;[45] and yet the Forms are said [sc. by the Platonists] to be the same in species as the particulars and not homonymous" (Iota 10 1059a11-14). However, there is an oddity in the way Aristotle puts this, which has generated some confusion. He adds on to the last-cited sentence "and things that are other in genus are further apart than things that are other in species" (1059a14, the last line of Iota): this seems to assume that Aristotle has already argued that corruptible and incorruptible

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[45]reading without the καὶ in 1059a12, with EJ, against A^b Jaeger

things are other in genus, and that he is now inferring <u>a fortiori</u> that they are other in species, and therefore that there cannot be Forms conspecific with corruptible things. And indeed he has said before (both just above, 1059a10, and in the first sentence of the chapter, 1058b28-9) that corruptibles and incorruptibles are other in genus. But the <u>arguments</u> he has given seem to show only that they are other in species--why shouldn't there be a genus divided <u>per se</u> by the contrariety corruptible/incorruptible, and so containing one species of essentially corruptible things and another species of essentially incorruptible things? Ross concluded that in the two earlier passages Aristotle meant "other in genus" non-technically, as equivalent to "other in species." But at 1059a14 he clearly does mean it technically, and Ross was driven to the desperate conclusion that Aristotle had written the chapter minus the final sentence long before, then took it up again to write the polemical anti-Platonic conclusion 1059a10-14, and in so doing misread his own earlier work as having argued that corruptibles and incorruptibles are in the technical sense other in genus. But although Ross says that these last lines "have the air of an afterthought [using] for the purpose of anti-Platonic polemic a result which in the rest of the chapter was established without any polemical motive' (AM II,305), Bonitz perceived more accurately that the entire chapter is building up to this conclusion and makes no sense without it (Bonitz II,449). And even without a formal argument that corruptibles and incorruptibles are other in genus and not merely in species, it is not hard to see how Aristotle is thinking: as we saw above, Δ28 says that "things are called other in genus whose primary substratum is other, such that one is not resolved [ἀναλύεται] into the other nor both into the same thing" (1024b9-11), and there is no primary substratum that is both potentially corruptible and potentially incorruptible. Aristotle certainly does not mean to conclude that corruptible and incorruptible things cannot both belong to the category of substance. But the point against the Platonists is serious, and flows from the larger argument of Iota: incorruptible things cannot be connected with corruptible things through the kinds of genus-bound ἀρχαί that Iota has discussed (the genus itself and genus-bound contrarieties as well as genus-bound units); rather they must be found, and connected with corruptible things, through some quite different causal connection.

Iγ2c: Iota 5-6 and N1-2: critique of plurality and inequality as ἀρχαί

Aristotle's account of contrariety in Iota 4 is intended to undermine any theory that posits a pair of contrary ἀρχαί--ἀρχαί in the strict sense, thus existing separately, not dependent on any ὑποκείμενον and not merely analogically the same across genera. There are, of course, many such theories--Aristotle says that "everyone makes the ἀρχαί contraries" (N1 1087a29-30, <u>Physics</u> I,5 188a19-20) or that "everyone makes everything out of contraries" (Λ10 1075a28)-- but Iota is mainly aiming at Academic theories that posit the one and some contrary, such as "the other and another [τὸ ἕτερον καὶ τὸ ἄλλο]" or "plurality" or "the unequal" (N1 1087b26-31), as ἀρχαί; where the ἀρχή contrary to the one, if it is the unequal, might itself be a pair of contraries, "the great and the small" or "the many and the few" or "the exceeding and the exceeded" (1087b13-18). Iota 5-6, drawing on Iota 4 and digressing from Iota's general account of contraries and genera and what is composed out of them, make important steps in the argument against these Academic ἀρχαί. Officially, Iota 5-6 are discussions of two aporiai raised by the conclusions of Iota 4: Iota 5 begins, "since one thing has [only] one contrary, someone might raise an aporia how [i.e. in which of the four modes of opposition] the one and the many are opposed, and how the equal is opposed to the great and the small" (1055b30-32, cited in Iγ2b above). These are then handled in reverse order, Iota 5 on the aporia about equal

and great and small, Iota 6 on the one and the many: this has the effect of clearly marking the two discussions as going together, as a unit relatively detached from the rest of Iota. Aristotle does not use the word "ἀρχή" in these chapters, but his arguments are clearly motivated by the critical examination of Speusippus' ἀρχαί, the one and plurality, and Plato's ἀρχαί, the one and the unequal or various similar formulations. And N1-2 will in part build on these chapters in its explicit critique of these Academic ἀρχαί.

I will start with Iota 6 on the one and plurality, which builds closely not just on Iota 4's conclusion that one thing has only one contrary, and its discussion of the different modes of opposition, but on Iota 1's discussion of the one as measure and the one as undivided. But to understand the target that Aristotle is aiming at in Iota 6, and to see that the chapter is not just playing with words, it helps to look ahead briefly to N1. The argument-strategy of N1-2 is many-pronged: Aristotle first argues in general that no contrary can be an ἀρχή in the strict sense (N1 1087a29-b4),[46] then specializes to the case of one-itself and some contrary ἀρχή, surveying the different descriptions that have been proposed for the ἀρχή contrary to the one (N1 1087b4-33); he then argues, using the account of the one as measure from Iota 1-2, that there is no one-ἀρχή beyond the units appropriate to particular genera (N1 1087b33-1088a14), and then criticizes the various accounts of the contrary ἀρχή which is supposed to account for pluralization (N1 1088a15-N2 1090a2).[47] Aristotle has quite different criticisms of different Academic accounts of the ἀρχή contrary to the one, and finds some of these accounts more plausible than others. So after arguing against the great and small (or variants on them) as an ἀρχή, he says that "some people oppose the other and another [τὸ ἕτερον καὶ τὸ ἄλλο] to the one, others plurality and the one. But if, as they intend, the things that are are out of contraries, and either the one has no contrary, or, if it does, it will be plurality, whereas the unequal is contrary to the equal [sc. rather than to the one], and the other to the same, and another to [the thing] itself, the people who oppose the one to plurality have got hold of the most plausibility" (1087b26-31, partially cited above).[48] It is Speusippus who opposed the one to plurality as ἀρχαί of number, reaching them presumably by analyzing a definition of number as "plurality measured by the one" (Iota 6 1057a3-4) or the like. Aristotle thus prefers Speusippus' ἀρχαί to any version of the Platonic great and small; as we will see in Iγ3 below, the use of Speusippus against Plato is a recurrent feature of MN. But, of course, he argues that Speusippus' account is ultimately not satisfactory either (as Syrianus complains, "[Aristotle's] aim is clear, to select one [Academic] view by preference out of all of them and then attack it, so that the others may be condemned <u>a fortiori</u>," Syrianus <u>In Metaphysica</u> 167,21-2). If the one had a contrary, it would be plurality, but in fact plurality and the one are opposed in some other way, not as contraries. Here Aristotle just says very briefly that if they were contraries "the one will be few: for plurality [or manyness, πλῆθος] is opposed [sc. as a contrary] to fewness, and the many [πολύ] to the few" (1087b32-3). This seems too short for a refutation of one of Aristotle's main opponents' account of the ἀρχαί, but

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[46]1087b1-4 "all contraries are καθ᾽ ὑποκειμένου, and none of them are χωριστόν (rather, nothing is contrary to an οὐσία, as is apparent and as the argument bears witness {accepting Jaeger's transposition? or can we get pretty much the same sense without it?}), therefore none of the contraries is in the strict sense an ἀρχή of all things"--because, as Aristotle has argued just before, what is inseparably dependent on a ὑποκείμενον is posterior to that ὑποκείμενον and so cannot be the ἀρχή--"rather, [there is] some other [such ἀρχή]"--bring up into the main text, if not cited prominently elsewhere

[47]see Iγ3 for more fine-grained discussion

[48]two text issues (i) 1087b28-9 εἴπερ ἄρα μέλλει vs. εἴπερ ἀμέλει (does anyone disagree?), (ii) problems about what ἕτερον and ἄλλο are opposed to. NB do I cite this elsewhere, either above or in Iγ3? if so find one place for discussion of text and translation

this is because Aristotle thinks that he has made the argument properly in Iota 6, and assumes that his readers need only to be reminded of that argument. Looking back to the fuller argument in Iota 6, we want to see both why there is something serious in the argument about fewness, and why, if we concede that plurality is not contrary to the one, it will follow that it is not an ἀρχή as Speusippus wants.

While the many are certainly somehow opposed to the one, there is a problem about how, and Aristotle starts Iota 6 by raising difficulties against assuming that the many are contrary to the one, or, as he also puts it, that they are opposed <u>simpliciter</u> (1056b4-5). The first argument he gives is what we have seen him cite in N1, that "the one would be little or few [ὀλίγον ἢ ὀλίγα], for the many are also opposed [sc. as contrary] to the few" (b5-6): here, as in Iota 5, he is relying on Iota 4's conclusion that one thing can have only one contrary. It may not be immediately clear why it is absurd for the one to be little or few, but Aristotle intends to bring this out shortly. He first gives another argument, which at first sight looks merely verbal, to the conclusion that the one is little/few: since to double is to <u>multiply</u> by two, two must be many; and since to be many is always to be more than the little/few, and two is not more than anything except one, one must be little/few (1056b6-9). Then he reduces this conclusion to a more manifest absurdity: "if the much [πολύ] and the little [ὀλίγον] are in plurality [πλῆθος] as the great and the small are in length, and what is much is also many and the many are much (unless perhaps they differ in something continuous and fluid [εὐόριστον]), what is little will be a plurality; so if the one is indeed little, it will be a plurality," which is absurd (b10-14).[49]

Aristotle is making a serious point here, even if it takes some work to bring it out. He thinks that the plausibility of positing the one and the many or plurality as ἀρχαί depends on conflating different senses of "many" or "plurality," which go with different ways in which these terms can be opposed to the one. The opponent may think that one and many are opposed to each other, within the domain of number, as large and small are opposed to each other within the domain of continuous magnitudes, that is, as contraries. But, Aristotle thinks, this is a mistake. It is not the one but the few which is contrary to the many; "one" and "few" are certainly not equivalent, and Aristotle thinks it is wrong to say that the one is few at all, that is, he thinks that "few" makes sense only as predicated of number or plurality. If we want the many to be an ἀρχή opposed to the one, rather than to the few--and, in particular, if we want these ἀρχαί to be what is cited in the definition of number as "plurality measured by the one" (1057a3-4)--then we must mean by "many" or "plurality" not the attribute contrary to "few," but rather the domain of which both "few" and its contrary are predicated. (And the few and the contrary many could be ἀρχαί only in a very weak sense: they certainly have no chance of being substances, but are attributes of the underlying genus.) But if "many" or "plurality" means the domain, then it has no contrary, and so in particular it is not contrary to the one, but rather opposed to it in some other way; and he thinks that only the illusion that it is contrary to the one, which comes from conflating the

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[49]three textual issues, one of them connected with something interesting about the sense. (i) in 1056b10 εἰ with EJ against A^b; (ii) εὐορίστῳ , E and ps-Alex apparently report a variant ἀόριστῳ; (iii) at end of b13 πλῆθος τι ἔσται with E (J ἐστι), verb omitted A^b, seems better to keep E against the editors. the only interesting issue is about εὐόριστον, cite good texts from <u>Meteorologica</u> and GC (also occurs once in the DC), closely connected with moisture, used in definition of moist in GC II, closest to a definition of εὐόριστον, in GC I around 328b1, conn/ ready divisibility into small bits and thus reshapeability of the whole, d think about the implications here. also: think about Ross' suggestion of consistently translating "ὀλίγον" here by "few": he's right that it doesn't really mean "little" anywhere in here, that it's always an attribute specific to discrete rather than continuous quantity, and that the reason for the neuter singular is just gender- and number-agreement with what it's predicated of. but how does one indicate that in English, with a word other than "few"?

domain-sense of "many" with the sense contrary to "few," will make the many and the one seem like a plausible pair of ἀρχαί.

Aristotle uses the difficulties of Iota 6 1056b4-14 (cited above) as an occasion to introduce the distinction between the two senses of "many" or "much" or "plurality"--or, as he presents it here, between two senses of "many," one of them assimilated to "much" and the other to "plurality." In solving the difficulties he first notes that the terms "much" [πολύ] and "many" [πολλά] are not intersubstitutable, since a fluid can be "much" but not "many": "many" applies only to διαιρετά, that is, to discrete quantities, or to what we would call count-nouns rather than mass terms (1056b14-17). Next, he draws a distinction between two senses of "many," a distinction which apparently does not apply to "much." Apparently "much" always means what exceeds some standard, or exceeds something smaller than it; "but ['many'] is said in discrete things [διαιρετά] in one way if [something] is a plurality having excess, either simpliciter or in relation to something, and in the same way the few/little [ὀλίγον] is a plurality having deficiency; and ['many' is said] in another way as number, and this [sense] is opposed only to the one" (1056b16-20).[50] That is, "many" can be used either for excess in plurality, the attribute contrary to "few," or for plurality itself, the domain in which manyness and fewness are the excess and deficiency. (Aristotle here seems to use "plurality" [πλῆθος] only for the domain, although presumably "πλῆθος", cognate with "πολύ" and "πολλά", could also have the sense of "muchness" or "manyness," i.e. excess in quantity, and indeed he uses it in this sense in N1, cited above, "the one will be few: for plurality [or manyness, πλῆθος] is opposed to fewness, and the many [πολύ] to the few," 1087b31-3.)[51] The distinction here is of a type that some twentieth-century linguists, especially those influenced by Roman Jakobson, discuss under the heading of the "marked" and "unmarked" members of an opposition, here a semantic rather than a phonological opposition. Thus in the oppositions between "day" and "night," or "long" and "short," or "animal" and "human," or in old-fashioned English "man" and "woman," "night" and "short" and "human" and "woman" are the marked members of the opposition, and the unmarked terms "day" and "long" and "animal" and "man" can be used either in an exclusive sense (for just the daylight hours, just irrational animals, etc.) or in an inclusive sense for the whole domain that is divided up between the members of the opposition (as in "there are 24 hours in a day," or "only a millimeter long").[52] So, in the present case, "few" is the marked opposite, and the unmarked term "many" can have either the exclusive sense contrary to "few," or an inclusive sense; especially the abstract "plurality" readily takes this inclusive sense, so that a plurality can be many or few as a length can be long or short. Having drawn these distinctions, Aristotle can resolve the difficulties of

[50]apparently the only textual issue is a triviality, that in b18 A^b (check M) omits the first ἤ of the ἤ … ἤ. this is a regular tic: of A^b? of β?

[51]here and where you cited this before you need to correct for the problem about ὀλίγον/ὀλίγα. the sense seems always to be "few" rather than "little," regardless of the grammatical number, and presumably likewise "πολύ" here is "many" rather than "much," although as we have seen Aristotle regards the word as ambiguous between the two senses

[52]for a quick and lucid discussion of this particular aspect of the marked/unmarked distinction, see Gregory Nagy's introduction to his Pindar's Homer {ref}; somewhat fuller discussion, with references to the linguistics literature, in Linda Waugh, "Marked and Unmarked - a Choice between Unequals in Semiotic Structure," Semiotica v.38 (1982), pp.299-318. it should not be assumed that in every case where a semantic opposition has a marked and an unmarked member, the unmarked term can be used in an inclusive sense. terminology here can be confusing and not always consistent. Waugh and Nagy, following Jakobson, say "zero sense" for what I am calling the inclusive sense, and "minus sense" for what I am calling the exclusive sense; this terminology would cause serious dissonance with the mathematical example, and I will avoid it. note the art-of-measurement passage in the Protagoras on long and short lengths

1056b4-14. When it is argued that two is many, and therefore that the one (as the only thing in comparison with which two could be many) must be few (1056b6-9), and that therefore since the few is always a plurality, the one must also be a plurality (b10-14), Aristotle can reply that two is "many" only in the inclusive sense, the sense equivalent to the domain "plurality" and opposed only to "one," not in the exclusive sense, the sense of the excess opposed to the deficiency "few": so there is no inference that because two is many, it must exceed something which is few, and so no inference that the one is few (thus 1056b25-32).[53] Likewise, when it is argued that if the one is opposed to the many, the one will be few (1056b4-6), the answer is that the few is opposed only to many-as-excess and the one is opposed only to many-as-domain, so again there is no inference that the one is few. And, besides being opposed to different senses of "many," they are also opposed in different ways, since the few is the <u>contrary</u> of many-as-excess, and the one cannot be the contrary of many-as-domain, which has no contrary, but only some other kind of opposite (see 1057a12-17: the many-as-domain is not contrary either to the few or to the one).[54]

 The reason why it is important how the one and the many are opposed is that they would be a plausible pair of ἀρχαί only if they were opposed as contraries. But they are not contraries; they can be opposed in two different ways, corresponding to the understandings of the one, discussed in Iota 1 (and Iγ2a above), as the indivisible or as the first measure especially of number. The one can be opposed to plurality as the indivisible to the divisible (so Iota 3 1054a20-23, discussed Iγ2a, taken up Iota 6 1057a14-15). But the one as indivisible is not the <u>contrary</u> but the <u>privation</u> of the many as the divisible, just as (as Iota 5 argues) the equal is the joint privation of the great and the small, and a privation cannot be an ἀρχή, since it can exist only as predicated of some positive underlying nature--in this case, some other nature that is indivisible. (See Iγ2a for discussion of why the one, construed as the indivisible, cannot be an ἀρχή. Even if an Academic might insist that a privation could be an ἀρχή in its own right, he would hardly accept this status for the one--the one is supposed to be in the positive column, and the many in the privative column.) The one can also be opposed to plurality, or more precisely to number as "plurality measured by the one," as the measure to the thing measured (so now 1056b20-25 and 1057a2-6 and 1057a15-17, see Iγ2a above). Thus to the argument of 1056b6-9, that the double is multiple and therefore two is many, Aristotle says that the double of X is a multiple of X because it is measured by X, and two is many because it is measured by one; but in this sense, to say "multiple of X" is just to say "X's," and to say "many" is to say "ones" (1056b20-25).[55] We have seen in Iγ2a why the one, understood as a first measure, cannot be an ἀρχή (to be a measure is a relation, and there must be something absolute that bears this relation to some domain). But even if the one so understood were an ἀρχή, the correlative many could not be a further ἀρχή beside the one. For to posit the many in this sense is just to posit ones, not to posit something beside the

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[53]so for Aristotle two is a πλῆθος (in the domain-sense) which is always few and never many (in the excess-sense) in relation to any other πλῆθος. nowadays we might say that one is a πλῆθος in the domain-sense, i.e. a set, and that plurality implies "more than one" only when "plurality" is taken in the excess-sense rather than the domain sense. but Aristotle rejects this: this line makes sense only if we have a conception of set that allows us to distinguish the singleton set {x} from its member x, and Aristotle does not have such a conception, and would probably reject it if offered, for reasons I discuss elsewhere (Iγ2a? Iγ3?: about the individuation of singleton sets as pure units)

[54]careful though: what does πάντως mean at 1057a14? Ross may be right that he means that the many as divisible is indeed contrary to the one as indivisible (although strictly they're opposed as privative to positive). but, as we'll see, even if this is admitted it doesn't do the opponent much good

[55]perhaps a note on the textual issue at 1056b20-21. there is something to be said for Schwegler's rather drastic proposal. or Bonitz could be right (warning: Ross' report is misleading), or Jaeger and Ross, or we could read καὶ τὸ μετρητὸν πρὸς τὸ μέτρον, taking τὰ μετρημένα as a varia lectio for τὸ μετρητόν. but the basic sense is unlikely to be affected

one, as it might seem if we confused this sense of "many" with the many-as-excess, and made it contrary to the few or to the one as an extreme of fewness. We might also say that Plato, in the third Hypothesis of the Parmenides, is treating the plurality that is measured by the one as an ἀρχή contrary to the one, by identifying this plurality or "otherness" with divisibility and the one with indivisibility: so the "others" when separated from the one will be purely divisible and thus infinite in plurality, acquiring numerical plurality, plurality measured by the one, only when they come to participate in the one.[56] But even if we grant Plato all his assumptions, he is not treating this plurality as ones (it is rather a continuum), and precisely for this reason it will not succeed as an ἀρχή of number, since the "units" formed when a part of the plurality comes to participate in unity will be divisible, and will not combine into numbers. (The assemblies of such "units" may participate in numbers--but then the numbers are presupposed, and cannot themselves be generated out of these ἀρχαί.) Perhaps Speusippus, who explicitly posits the one and plurality as ἀρχαί of numbers, is indeed treating this plurality as ones, i.e. as something divisible into indivisibles and not a continuum; this seems the only way that plurality can be, as Speusippus wants, a material ἀρχή specifically appropriate to numbers and not to magnitudes. But then, as Aristotle argues against Speusippus at M9 1085b12-27, he is not positing another ἀρχή beside the one which can explain why there are many units--rather, he is simply positing many units, each an independent ἀρχή. Nor is he, as he wishes, positing the one and plurality as ἀρχαί of number, since "the person who says this is making [i.e. positing] nothing but another number: for a plurality of indivisibles is a number" (1085b21-2): such a plurality simply is number, and not an ἀρχή from which number can arise. Iota 1-2 on the one as indivisible and as measure, and Iota 6 (and Iota 3 1054a20-29) on the different senses of the many and the different ways it can be opposed to the one, function together in undermining all versions of an Academic theory of the one and plurality as ἀρχαί, and especially as ἀρχαί appropriate to numbers. The best hope for making them independent and contrary ἀρχαί might be to construe the one and plurality as the indivisible and the divisible, but even aside from Aristotle's arguments in Iota 1-2 and Physics III,5 (respectively) that the indivisible and the infinitely divisible cannot be natures existing καθ αὑτά, even if these things were posited as ἀρχαί they could not be ἀρχαί of numbers.[57]

The equal and the unequal or the great and the small

Aristotle takes for granted in Iota 5 that the equal is somehow opposed to the great and the small, since we can ask whether something is greater or smaller or equal, and we can only ask whether something is X or Y if X and Y are opposites.[58] The question is how the equal is opposed to the great and the small. (Aristotle goes back and forth freely in this chapter between talking of "great and small" and talking of "greater and smaller"; both he and his Academic opponents think that the great and the small are already relative or comparative, and that there is nothing to be gained by distinguishing the simple from the comparative degree of the adjectives.) Aristotle's main claim against his Academic opponents is that the equal cannot be opposed as contrary to the great and the small, since it cannot be contrary to just one of them (why one more than the other?), and since we have established that one thing cannot have two contraries, so that

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[56]this infinity in plurality might be described as the "complete privation" of unity, and so as its contrary
[57]reference to treatment of Physics III,5 argument (should be in Iβ4), and to fuller treatment of the argument against Speusippus, in its context in M6-9α, and more broadly in MN, in Iγ3
[58]note Cattanei's comment in Centrone about Ross' interpretation of Iota 5 as being about the logic of whether-questions. I'm not sure that's fair, but she might be right; if so it's appalling

it cannot be contrary to both of them. We might be inclined to say that the equal is contrary to the <u>unequal</u>, but if "the unequal" means the same thing as "the great and the small" (as is maintained especially by those who say that the unequal is an indefinite dyad--but Aristotle too agrees), this will still lead to the impossible result that one thing has two contraries. Perhaps the deeper difficulty, however, comes not from Iota 4's conclusion that one thing cannot have two contraries, but from the reason on which this conclusion was based, namely that contraries are always two extremes, as different from each other as they can be within the range of variation (the same genus, same recipient, etc.) which they share. So the contraries cannot be intermediates: other things in the same range of variation are intermediate <u>between</u> the contraries. But the equal is intermediate between the great and the small, and so it cannot be contrary to the great, or to both the great and the small, or to the unequal; rather, the great and the small must be contrary to each other, with the equal as an intermediate between them. How then is it opposed to the great and the small, if not as their contrary? Clearly it is not their correlative (the great is correlative to the small; the unequal would have to be correlative to itself, if it has a correlative at all). So the opposition must be either negative or privative, and it is not simply negative, because the alternative "greater or smaller or equal" does not apply except to things that are naturally capable of being greater or smaller (a surface is neither great nor small nor equal in comparison to a color, or even to a line). The opposition is therefore privative; and since the great and the small cannot both be the privation of the equal (and if the unequal were the privation of the equal, it could not divide into great and small),[59] the equal must be the privation of both of them, is expressed by the definition, "what is neither great nor small, but naturally suited [πεφυκός] to be great or small" (1056a22-3).[60] The equal is therefore intermediate between the great and the small, in the way that whatever has neither of two contraries, but is naturally suited to have them, is intermediate between them.

   This may seem like a rather small payoff for the work of Iota 4. But the surprise value is supposed to come, not so much from the result that the equal and the unequal (or the equal and the great and the small) are opposed privatively and not as contraries, but from the corollary that the equal is the privative opposite, and the great and the small are positive. Going by the grammatical form of the word, it is the unequal [τὸ ἄνισον] which should be the privative term. (Δ22 says that "privations are said in as many ways as negations with alpha," i.e. as what we now call alpha-privatives, and gives as its first example that "the unequal is so called through not having equality although being naturally suited to have it," 1022b32-4.) Those Academics who speak of the unequal, or equivalently of the great and the small, as an ἀρχή, seem always to assume that it is a privative ἀρχή. So Aristotle in <u>Physics</u> I,9 contrasts his account of matter with Platonic or Academic accounts by saying that "<u>we</u> say that matter and privation are other, and that the matter is not-being <u>per accidens</u>, but that the privation [is not-being] <u>per se</u>, and that the matter is close to οὐσία and is in a sense οὐσία, but the privation not at all; whereas <u>they</u> say that the great and the small are not-being alike, either the composite [of the great and the small] or each of them separately" (192a3-8). And indeed we have an fragment of Plato's "companion" Hermodorus apparently arguing that the great and the small, and the unequal, because they admit more and less <u>ad infinitum</u>, should be called "ἄστατον and ἄμορφον and ἄπειρον and not-being, in the sense of a negation of being" (Simplicius <u>In Physica</u> 248,13-14 = Hermodorus Fr.7,26-7

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[59]cp. <u>De Partibus Animalium</u> I,2ff for the point that a privative differentia cannot be further differentiated

[60]Aristotle calls it a "privative negation of both," and also a "joint negation [συναπόφασις]" {ref.}, but these seem to be just expansive ways of saying "privation"; it is the privation of <u>both</u>, because we can ask <u>whether</u> something is equal or greater or smaller, but not whether something is equal or greater

Isnardi Parente). Hermodorus infers that the great and small are not an ἀρχή: he agrees with Aristotle that no privation can be an ἀρχή, and he finds it easier to give up on the thesis that the great and small are an ἀρχή than to give up on their being a privation.[61]

   It is typical of the Academics that they try to determine what the underlying nature of something is in itself by stripping away in thought all the determinations it has received by participating in some form: the positive determinations will be stripped and the privative determinations will remain and be attributed to the underlying nature, and this is some of what Aristotle means by saying that his Academic opponents do not distinguish the matter from the privation. Thus the third Hypothesis of the Parmenides considers what "the others" would be before they come to participate in the one either as a whole or as parts, and concludes that "their own nature in themselves [gives them] unlimitedness [ἀπειρία]" (158d5-6), whereas they receive limit and unity and definite multiplicity from their association with the one (discussed above Iβ4). Equality too is something that things receive by participating in the one--thus Aristotle almost never mentions equality and inequality as Academic ἀρχαί, but rather the one and inequality[62]--and to understand what the other nature is in itself we must strip away equality: in itself it must be unequal, that is, great and small. The first instance of equality is between the units within the number two (since all units within a number must be equal), and so there must be, prior even to the number two, not only the one but also a non-numerical dyad of the great and the small (more below on why this is an "indefinite" or "indeterminate" dyad): the units in the number two come to be, and the number two itself comes to be, when this great and small are "equalized" (so M7 1081a23-5--apparently attributed to Plato personally--and M8 1083b23-8, N4 1091a23-9, briefly discussed Iγ2a above). Thus while the third Hypothesis of the Parmenides strips away the units within a whole to discover the infinite or unlimited as the underlying nature which receives unity and numerical multiplicity, here stripping away the equality of the units within a numerical whole leads to the unequal as the underlying nature which receives equality. Aristotle will, of course, reject this procedure. Against the view that the unequal is the underlying nature which comes to participate in its contrary the equal, or which acquires equality by coming to participate in its contrary the one, Aristotle says rather that inequality does not exist καθ᾽ αὐτό but presupposes another underlying nature (namely quantity), not because it is a

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[61]reference to discussion of Hermodorus below (now moved to probably Iγ3); note Cherniss' issue about whether the bit I've quoted line might be Dercyllides' addition. also note in the Sextus (Old Academic or Old Academic-influenced) "Pythagoreans" passage which I discuss in the same place, at AM X,271 equal and unequal are contraries, and it is clear from the other examples that Sextus compares them with that the equal is thought of as positive and the unequal as privative, although he doesn't use these terms (I don't remember this source speaking of "privation" at all)

[62]the best text for the equal as an ἀρχή opposed to the unequal is Λ10 1075a32-3, "some people make one of the contraries [a] matter, like those who [make] the unequal [matter for] the equal, or the many for the one." the longer version in N1, in the transmitted text, has "some people make one of the contraries [a] matter, some [making] the unequal [matter for] the one, the equal, on the ground that this is the nature of plurality, the other person{i.e. Speusippus: reading, with Jaeger, EJ's ὁ, which as Jaeger says is presupposed by τῷ in b8; Ross prints Aᵇ's οἱ, with which, surprisingly, M agrees, d check the Aristoteles Latinus and maybe other manuscripts--the situation is strange given the stemma, but I suppose οἱ δὲ for ὁ δὲ after οἱ μὲν is a natural enough corruption that it might occur twice} [making] plurality [matter] or the many for the one" (1087b4-6). here Ross and Jaeger bracket "the equal" as a gloss on "the one": Crubellier thinks we might be able to keep it {check Annas}, but even if so able], the equal is an ἀρχή and formal cause to the unequal only so far as it can be identified with the one: what Aristotle goes on to say in the N text makes clear that the ἀρχή contrary to the unequal is the one, and indeed he seems to attribute the one as an ἀρχή to virtually every Academic, for all their disagreements about what the contrary ἀρχή is. the Λ10 and N1 texts are verbally very close, the Λ text being plausibly explained as a abridged recollection of the N text: on the relation between Λ10 and N see IIIγ3 below

privation, which on Aristotle's view it is not, but because it is a relative; and equality is not something independent of this underlying nature, or something it acquires by participating in some other positive nature, rather the equal is simply the joint privation of the two contrary-correlatives, the great(er) and the small(er), presupposing the same underlying nature (namely quantity) that they do. The considerations about the relative character of the equal and the great and the small, and the non-relative underlying nature that they presuppose, are not directly relevant to the argument of Iota 5. But they are highly relevant to the issues about the ἀρχαί which are the motivation for Iota 5, and which were also the motivation for the Platonist position that he is criticizing in Iota 5. They involve Aristotle's critique of Plato's test, since if Plato's test were sufficient to establish priority in οὐσία, it would show that a relative term such as "great" is prior to the absolute thing of which it is predicated (quantity) and does not presuppose it as Aristotle insists that it must; and they involve Aristotle's critique of theses of the Philebus that we have already seen to be relevant to the argument of Metaphysics Iota. So it will help to take a little time to see what the issues look like both from Plato's side and from Aristotle's.

Against the Platonist view that stripping away equality reveals the unequal as the nature underlying number and magnitude, Aristotle objects that "these things [sc. many, few, great, small] are affections and accidents, rather than ὑποκείμενα, of numbers and magnitudes, the many and few [as accidents] of numbers and the great and small of magnitudes" (N1 1088a17-19).[63] Certainly we can correctly say of a number that it is many or few, and of a magnitude that it is great or small: what is in dispute is whether many and few and great and small give the underlying essence of these things, or whether they are only accidents belonging to them.

Aristotle's main argument that they are accidents is that great, small, etc., are in the category of πρός τι, while numbers and magnitudes are quanta; the argument is even stronger if, as the Academics maintain, numbers and magnitudes are also οὐσίαι. For "τὸ πρός τι is least of all a φύσις or οὐσία, out of all the categories, and is posterior to quale and quantum ... for nothing is either great or small, either many or few, or in general πρός τι, which is not ἕτερόν τι ὄν many or few or great or small or πρός τι" (N1 1088a22-4, 27-9, discussed Iβ4 above): that is, what is πρός τι exists only as an attribute of some underlying non-relative nature, and so even if it is prior by Plato's test it cannot be prior in οὐσία (see Iβ4 for discussion). The Platonists' motivation for positing such relative ἀρχαί, according to Aristotle in N1-2, is to explain the plurality of οὐσίαι, in the first instance the plurality of the units in the numbers with which they identify the Forms, units whose individuation (as Aristotle had argued in M6-9α) poses serious problems.[64] But, says Aristotle, it is useless to posit a πρός τι in order to explain the plurality of οὐσίαι. Even if it were possible to find a contrary to the one, and to generate things out of the one and this contrary as ἀρχαί (and already in B#11, picked up here in N1-2, Aristotle had argued that this is impossible),[65] the contrary to an οὐσία could not be a πρός τι. "Some people

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[63]cite parallel A9 992b1-4; and cp. above Iβ4

[64]some discussion Iγ2a above, more Iγ3 below

[65]after complaining about the aporia of Parmenides, which follows for anyone who makes τὸ ὄν an οὐσία, Aristotle says that a similar aporia will follow for anyone who makes τὸ ἕν an οὐσία, making it impossible for numbers to be οὐσίαι: ἐκ τίνος γὰρ παρὰ τὸ ἓν ἔσται αὐτὸ ἄλλο ἕν; ἀνάγκη γὰρ μὴ ἓν εἶναι· ἅπαντα δὲ τὰ ὄντα ἢ ἓν ἢ πολλὰ ὧν ἓν ἕκαστον (1001b4-6); towards the end of the aporia he talks about people who "make number out of the one itself and something else which is not one" (1001b20-21), and specifies that the ἀρχή other than the one is "inequality" (1001b23). Likewise in N2 Aristotle blames his opponents for falling into the aporia of Parmenides (1088b35ff), and of trying to explain how there can be more than one being by looking for "an opposite to being and to the one, out of which together with these [sc. being and the one] the things-that-are will be; [so they] posit the relative, i.e. the unequal, which is neither a contrary nor a negation of these [sc. being and the one], but is one nature

oppose the other and another [τὸ ἕτερον καὶ τὸ ἄλλο] to the one, others plurality and the one. But if, as they intend, the things that are are out of contraries, and either the one has no contrary, or, if it does, it will be plurality, whereas the unequal is contrary to the equal [sc. rather than to the one], and the other to the same and another to [the thing] itself,[66] the people who oppose the one to plurality have got hold of the most plausibility" (N1 1087b26-31): a relative like the unequal could at best be contrary to another relative, the equal. The relative, or specifically the unequal, is "neither a contrary nor a negation of [being and the one], but is one nature among the things-that-are, just like the τί [i.e. οὐσία] and the quale" (1089b6-8),[67] and an ἀρχή chosen from one category, including the relative, cannot explain the plurality within any other category. The Platonists are presumably most interested in explaining plurality of substances (since they take the numbers, and the units within them, to be substances), but in any case the ἀρχή of plurality within any kind of being must be something appropriate to that kind of being, namely what is potentially that kind of being, and "the relative is neither potentially nor actually substance" (N1 1088b1-2).[68]

Plato on πρός τι and the great and the small

It is indeed strange to make a πρός τι an ἀρχή, implying that it has no non-relative underlying nature: no one was tempted to do this before Plato (none of the lists of Pythagorean ἀρχαί or contraries, except those obviously influenced by Plato, contain anything relative), and Plato himself did not start by thinking in this way. Nonetheless, we can see why he might have been tempted in this direction. The problem of πρός τι comes up already in the Phaedo, and indeed specifically in connection with the great and the small. Simmias is greater (that is, taller) than Socrates and smaller than Phaedo, and he must therefore participate both in the great and in the

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among the things-that-are, just like the τί and the ποῖον" (1089b4-8). Λ10 1075b14-16, probably drawing on N, makes basically the same point, d cite. in all of these passages there is a polemical assumilation of the problem about units other than the one-itself to the problem about beings other than being-itself; Aristotle must know that these are different problems, and that, while the Academic material ἀρχαί may be non-beings in the sense that they are privative, they are not contrary to being as such, whereas they are supposed to be contrary to unity as such; he nonetheless wants to bring out the fundamental structural similarity to Parmenides' problem as he interprets it (i.e. as he misinteprets it, following the Sophist; I think I have a note on this somewhere). {I've just finally realized the function of the Zeno argument in B#11, which is a prologue to a Speusippean argument against the Platonists, connected with arguments in MN; d add something about this maybe in Iβ3--d check, have I now done this?}

[66]the issue at 1087b28-9 εἴπερ ἄρα μέλλει E vs. εἴπερ ἀμέλει JA^b (= γ) has no real implication for the meaning, and anyway the lectio difficilior of E seems clearly preferable. M has εἴπερ ἄρα, confirming E, but omitting μέλλει; hyparchetype α must have had the reading of E, and the archetype must have had either the reading E or the reading of M. at 1087b29-30 contrary is τὸ ἕτερον τῷ ταὐτῷ EA^bM (αὐτῷ J) and τὸ ἄλλο αὐτῷ EJM (πρὸς τὸ αὐτῷ A^b); assuming Harlfinger's stemma for books MN is right, the consensus of EA^b against J the first time and of EJ against A^b the second time should be sufficient to determine the reading of hyparchetype α, and this is now confirmed by the reading of M. Aristotle is here shooting down in sequence those who make ἕτερον or ἄλλο the contrary to the one (as previously he'd shot down those who make the great and small contrary to the one), and the juxtapositions might allow us to see some difference in meaning between ἕτερον and ἄλλο (the same vs. other, it vs. another?); d flag in the note near the beginning of Iγ2b on the distinction or non-distinction ἕτερον and ἄλλο.

[67]note the at least verbal contradiction with the text cited just above on whether the πρός τι is a φύσις.

[68]this is connected with Aristotle on the three senses of τὸ μὴ ὄν; he concedes (rather surprisingly) that we can look for τὸ μὴ ὄν as a principle of pluralization within each domain, but says that it must be in the sense of τὸ δυνάμει, rather than falsehood or a categorial sense. think where to treat this; I was planning to mention it in the section on the argument-structure of MN, but not to dwell on it, except possibly (i) inasmuch as Aristotle uses it in Λ2, (ii) the perennial question about whether he's misreading the Sophist on not-being, and whether that discredits the rest of his reports of Plato

small, since "great things are great, and greater things are greater, by greatness, and smaller things are smaller by smallness" (100e5-6): so both greatness and smallness are present in Simmias (102b5-6), and "Simmias has from them the names of being both small and great, being in the middle of the two" (102c10-11). Here it is quite important that "great" is predicated of Simmias as a πρός τι, i.e. that he is both great and small and that the contradiction is resolved by saying that he is great πρός some things and small πρός others, but the text does not suggest that being πρός τι is a characteristic of greatness as such.[69] Rather, it is a deficiency in the way that Simmias is great, which implies that he participates in both greatness and smallness at once; the form of greatness will not participate in smallness, and will not be intermediate between greatness and smallness, so it will not be great πρός some things and small πρός others, but simply great. Being πρός τι thus seems to be not an attribute of the intelligible ἀρχαί, but an aspect of the imperfection of sensible things. And Plato reinforces the point in Republic VII, where he describes the sensory perception of compresent contraries as stimulating the search for intelligible realities: "sight saw great and small, but not separated [κεχωρισμένον] but rather as something confused [συγκεχυμένον] …. So intellect, in order to clarify this, was compelled to see great and small not confused but distinguished [διωρισμένα]" (524c3-4, c6-8). So the disturbing compresence of greatness and smallness leads us to discover in the intelligible world a separated greatness which is only great, and a separated smallness which is only small. If such a separated greatness can be said to be great πρός something, it can only be in the way described in the Parmenides, where "greatness itself is not greater than anything but smallness itself, nor is smallness itself smaller than anything except greatness itself" (150c4-6), and smallness can never be equal to or greater than anything (150a7-b1), but only smaller, namely than greatness.

This, however, is something close to a reductio ad absurdum. Greatness is always predicated in the first instance of quantities, and it is not an imperfection of sensible things, but a necessary consequence of the nature of quantity, that every quantity, besides being greater than some things, is also smaller than some things, for instance, smaller than its double. A great that is not in any relation small thus contradicts the concept of greatness. Now we could of course resolve this difficulty if we denied or reinterpreted the "self-predication of the forms," saying that greatness is not itself something great, but is what it is for something to be great, and so on. And similar moves can resolve all the other difficulties against positing an F-itself, whatever F may be. But this is to evacuate the meaning of positing forms in the first place, and, quite properly, no one in the Academy, on any side of the debate, ever considered such a move. There can be no single overall solution to the problems about forms, but only an investigation, for each F, of whether it is possible, and whether it is necessary or desirable, to posit a separately existing F-itself, which will be the most F thing, and the cause of F-ness to the other things that are F.[70] In cases where F is a πρός τι, Aristotle thinks it is clear (much clearer than in other cases) that there cannot be a separate F-itself, since (to cite the passage from N1 again) "τὸ πρός τι is least of all a φύσις or οὐσία, out of all the categories, and is posterior to quale and quantum ... for nothing is either great or small, either many or few, or in general πρός τι, which is not ἕτερόν τι ὄν many or few or great or small or πρός τι" (1088a22-4, 27-9). So too in A9, Aristotle thinks it shows that there must be something wrong with a range of arguments for the forms if "some of the 'more precise arguments' produce ideas of things τὰ πρός τι, of which we say that there is no

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[69]this text and many of the others I will cite do not use "πρός" but rather a genitive of comparison, but it makes no difference: cite the Categories' definition of πρός τι for this indifference
[70]see discussion of Eudemian Ethics I,8 in Iα3 above

genus καθ᾽ αὐτό" (990b15-17 = M4 1019a11-13).[71] As we will see in Iγ3, several other people in the Academy agreed with Aristotle that no πρός τι could exist by itself and therefore that no πρός τι could be an ἀρχή. And Plato too, sometime after the Republic, seems to have given up on positing a great that was only great and a small that was only small, presumably conceding the obvious point that everything that is great is also smaller than (for instance) its double.

But Plato continues to posit a great that exists separately, not in the sense that the great is separated from the small (as in Republic VII 524c3-8, cited above), but in that it is something that is only great and small, or only unequal. He makes this move not only in the case of great and small, but also with other pairs of contrary πρός τι which admit more and less. We are not entirely dependent here on Aristotle's testimony (or on fragments of other Academics): Plato in the Philebus discusses things that fall under the class of the ἄπειρον, taking as his example "hotter and colder," which admit more and less, and in which no limit [πέρας, τέλος] can be recognized (24a1-b8). These things are ἄπειρα not only because they can increase in degree with no limiting maximum, but also because they do not contain τὸ ποσὸν … καὶ τὸ μέτριον, a determinate amount and a fixed measure (24c7). Plato's meaning here becomes clearer through comparison with a passage of the Statesman which contrasts two ways of judging great and small, and two ways of being great and small, so that "in the first way they are said in relation to each other [πρὸς ἄλληλα--so that 'the greater is greater than nothing other than the smaller, and the smaller is smaller than the greater and nothing else,' 283d11-e1], but in the second way they are said in relation to a fixed measure [πρὸς τὸ μέτριον--so that the great, or the greater (Plato does not distinguish these terms), is greater than the μέτριον, and the small or the smaller is smaller than the μέτριον]" (283e8-11). So, in the Philebus, if the hotter and the colder do not contain τὸ ποσὸν … καὶ τὸ μέτριον, this means that there is no fixed "measured" degree of heat, than which the hotter would be hotter and than which the colder would be colder; and therefore there would also be no ποσόν in hot and cold, since such a quantity would arise only through determinate relations to this fixed degree.[72] (We are now used to determining degrees of temperature in this way, but for a Greek, the primary example of such a quantitative determination of a range of qualitative variation would be in music, where first one fixed note is determined, and then all the other notes are determined by going up and down in fixed intervals from the first note--in the simplest case, the diatonic scale, by going up and down in intervals of an octave and a fifth, thus in numerical ratios of 2:1 and 3:2.) The hotter and colder as described in the Philebus--or the great and the small, for Plato surely intends this analysis to apply to them as well--will thus not be separated and διωρισμένα like the great and small of Republic VII 524c3-8, but rather ἀόριστα. That is to say: there is not a pure hot which is not also cold--either as an extreme limit of heat, or as the half of the range of variation which is hotter than a fixed μέτριον--and a pure cold which is not also hot, so that hot-and-cold intermediates could arise

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[71]see discussion in the account of M4-5 in Iγ3 below {to which, perhaps, defer the following note:} a fuller version, with an example of a more precise argument, why it is more precise, and why it would equally establish ideas of τὰ πρός τι, is given in Alexander's commentary on the A passage, In Met. 82,11-83,33 = Ross Aristotelis Fragmenta Selecta #?, drawing on Aristotle's Περὶ ᾽Ιδεῶν. Alexander (or Aristotle) notes that τῶν δὲ πρός τι οὐκ ἔλεγον ἰδέας εἶναι διὰ τὸ τὰς μὲν ἰδέας καθ᾽ αὐτὰς ὑφεστάναι αὐτοῖς οὐσίας τινὰς οὔσας, τὰ δὲ πρός τι ἐν τῇ πρὸς ἄλληλα σχέσει τὸ εἶναι ἔχειν (83,24-6), giving as examples of the πρός τι of which there will be ideas first τὸ ἴσον, and then, if that is not enough to make the absurdity manifest, τὸ ἄνισον.

[72]note that the Categories is concerned to say which kinds of things admit more and less (μᾶλλον and ἧττον, same terminology as in the Philebus), and uses this (along with whether they have contraries) as a tool for classifying things; some but not all relations admit more and less, but Aristotle insists that ποσά do not, 6a19-25. "great" and "small" do admit degrees, but that just shows that they are relations rather than quantities

through mixing the two. Instead, everything that is hot is also cold, and everything that is cold is also hot, and this is not a deficiency in the things that participate in the hot and the cold, but belongs to the nature of hot and cold from the beginning. Only afterwards, when τὸ μέτριον comes to be within the range of variation from the class of the πέρας, are there predicates, arising through determinate relations to this μέτριον, which can apply to something without their contrary applying at the same time.[73]

This is not yet the Platonic theory of ἀρχαί reported in <u>Metaphysics</u> A6 and criticized in N1-2. In the <u>Philebus</u> Plato is not talking about the great and the small as a single ἀρχή presupposed by all things other than the One, but about a whole class of ἄπειρα things including hotter and colder and so on. Still, the <u>Philebus</u> too is not simply classifying beings into ἄπειρα and πεπερασμένα, but analyzing things into their ἀρχαί. Prior to any determinate degree of heat are the indeterminate hotter and colder, and this ἄπειρον, together with the appropriate πέρας, are the ἀρχαί from which the relevant class of "mixed" things arise: the ἄπειρον of the hotter and colder is an ἀρχή discovered, in the usual Platonic way, by removing in thought the μέτριον in hot and cold, and therefore also removing degrees of heat and cold constituted by determinate relations to this μέτριον, and so the resulting ἀρχή is as usual a privation. The Platonic account of the ἀρχαί that Aristotle reports in A6, and its variations reported in N1 (replacing the great and the small by the many and the few or the exceeding and the exceeded), develop the <u>Philebus</u>' procedure for analyzing things back to their ἀρχαί, applying it not to predicates like hot and cold but to <u>quantitative</u> predicates, so as to get ἀρχαί which will be prior to the numbers, and which therefore, if numbers are prior to everything else, will be ἀρχαί of all things. But despite the differences between the <u>Philebus</u> and these accounts of the ἀρχαί of all things, and despite our uncertainties about the details of these accounts, the <u>Philebus</u> passage is enough for us to see that Plato is indeed taking the paradoxical position which Aristotle attacks in N1, of saying that there are primitive πρός τι, which are simultaneous with their contrary correlatives, but are not dependent on any non-relative ὑποκείμενα. Indeed, it is even more paradoxical than that: Plato is not saying simply that there is a pair of primitive πρός τι, each of them being what it is πρός the other, as masterhood and slavery are described to be in the first part of the <u>Parmenides</u> (133e3-6), and as greatness and smallness are assumed to be in a parallel passage of the second Hypothesis (150c4-6). Rather, Plato is now assuming that, instead of there being one thing which is only great (πρός the small), and another thing which is only small (πρός the great), there is one

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[73]NB some of this note is important enough that it should probably be brought up into the main text. on the senses of ἀδιόριστος cp. Meinwald in Gentzler p.173, interpreting <u>Philebus</u> 24a7-8, as she renders it "First in the case of Warmer and Colder see if you can ever notice any <u>peras</u>." she says commonly taken two ways: #1 capable of infinite increase in either direction; #2 "warmer" is indefinite or fluctuating, unlike "70 degrees Fahrenheit." she herself favors #3, no boundary demarcating warmer from colder, which she connects with the "indefinite dyad." I think both #1 and #3 are involved, and #2 is also connected. also: compare the Sacred Meadow attached to the shrine of Demeter and Kore at Eleusis, on an undemarcated region of the Attica-Megarid border (ἀόριστος at Thucydides I,139, check other refs, from commentaries on Thucydides, or from Bowden--there's an inscription relating to an oracular consultation, which is printed in a handy volume of documentary sources for Greek religion or the like). I suspect that "ἀόριστος δυάς" will have called the Sacred Meadow to mind for Plato's original hearers. the word "ἀόριστος" is not common in anyone before Aristotle (in whom it is quite common): a few uses in the <u>Laws</u>, a few in Demosthenes and Aeschines, sometimes in saying "the legislator has not left this undetermined," sometimes in "ἀόριστος χρόνος"; then later use in logic and grammar. there's a book-title in Xenocrates (apud DL) περὶ τοῦ ἀορίστου, not sure whether context allows us to guess the meaning. Hermodorus, to be discussed in Iγ3 (?), contrasts ἀόριστον vs. ὡρισμένον, in precisely the context of distinguishing kinds of relations, greater and smaller are ἀόριστα whereas double and half are ὡρισμένα. ἀδιόριστον seems to be virtually unknown before Aristotle, although it seems innocuous enough as the opposite of διωρισμένον.

thing which is both great and small, like the one ἄπειρον in the <u>Philebus</u> which is both hot and cold. It is a δυάς and not an indivisible unit, because nothing can be greater than itself as a whole, but it is an ἀδιόριστος δυάς, because it does not consist of one part which is simply great and another non-overlapping part which is simply small: every part of it is both great (πρός some part of it) and small (πρός some other part of it). Thus Plato no longer believes that the great and the small are χωριστά from each other, but he still seems to believe that the great and the small are χωριστά from everything else, and that the great-and-small together exists χωρίς, in other words that there is nothing whose nature is just to be great, or just to be small, but that there is something whose nature is just to be great and small. (<u>Categories</u> c6 6a4-8 argues, surely against Plato, that great and small cannot be contraries, on the ground that "it will follow that the same things are contrary to themselves: for if the great is contrary to the small, and the same thing is simultaneously great and small, the same thing would be contrary to itself, but it is impossible for the same thing to be contrary to itself." If this means merely that Simmias, who is great πρός Socrates and small πρός Phaedo, is therefore contrary to himself, then this incidental self-contrariety does not seem sufficient to refute the opponent; but if the opponent is committed to the view that "the same thing is simultaneously great and small" because both belong to its essence, it will be contrary to itself <u>per se</u>, and the paradox will be much more serious.) Aristotle denies that there is anything whose nature is just to be great and small, maintaining that the great or the greater (which he, like Plato, takes as equivalent) is always posterior to some determinate quantity of which it is predicated, just as the hotter is always posterior to some determinate degree of heat. To describe the range of variation as "the hotter and the colder" is merely to give accidents of some underlying non-relative nature, and likewise "these things are affections and accidents, rather than ὑποκείμενα, of numbers and magnitudes, the many and few [as accidents] of numbers and the great and small of magnitudes" (N1 1088a17-19, cited above, cf. A9 992b1-4). Plato will say that determinate degrees of heat are posterior to the hotter and the colder, and that determinate quantities are posterior to the great and the small, and indeed they must be by Plato's test, since no determinate degree of heat or quantities can exist without being hotter and colder, greater and smaller, whereas all these relatives can exist without any given determinate degree or quantity. But for Aristotle (and, as we will see in Iγ3, for some others in the Academy) this result only shows the inadequacy of Plato's test: even if the indeterminate relative "greater" is prior to the determinate relative "double," both of these relations are inseparable and posterior κατ᾽ οὐσίαν to quantities, and these in turn to οὐσίαι, and Plato's test is not sufficient to prove that such inseparable things are prior to their ὑποκείμενα.

   This line of thought in Plato, starting in the <u>Philebus</u> and then developed in places to which we do not have direct access, helps bring out the point of Aristotle's conclusions in Iota, and especially in Iota 5. If the equal is the joint privation of the great and the small, this means that there is a non-relative nature, namely quantity, which underlies the relations of being great(er) and small(er), and that things are equal, not through participating in a one independent of this underlying nature, but just through having this underlying nature which <u>could</u> be great(er) or small(er) and <u>not</u> being great(er) or small(er). The implication is that quantity does not, as the Platonic account (following Plato's test) says, arise from the indefinite dyad of the great and the small when equality and other determinate relations are imposed on it; rather, quantity is prior in οὐσία both to the great and small and to the equal. Aristotle develops this argument in <u>Metaphysics</u> N1-2. We will see the argument again in the next section, Iγ3, in examining MN, and more specifically M6-N6, which criticize Academic accounts of eternally unchanging things mathematically described and how they arise from their ἀρχαί, conceived either a plurality of

units or as a single one-itself and a contrary ἀρχή responsible for pluralization. We have already seen Aristotle's basic arguments against the theses that the one and the unequal, or the one and plurality, are a pair of contrary ἀρχαί from which quantities or specifically numbers arise, and the following section Iγ3 will not show us anything to alter the picture of how the arguments fundamentally work. But it will put these arguments, and thus also Iota 5-6 and Iota more generally, into a larger context, not just in the sense that it will place them within the larger argument-structure of Metaphysics MN (itself understood as part of the larger argument-structure of the Metaphysics), but in two further senses. First, we can see that Aristotle is not just, as a kind of optional appendix to the serious business of the Metaphysics, shooting down some bizarre offhand comments of his Academic colleagues. Rather, the project of finding separate unchanging ἀρχαί as ἀρχαί of separate unchanging things (which is the alternative to seeking them either as formal causes of sensible things, or with Aristotle as causes of motion to sensible things) essentially turns on describing these unchanging things as numbers (or as spatially extended things which depend on numbers). If there are separately existing numbers, there must be a plurality of separately existing units; and, as Aristotle has argued already in B#11, if there are separate numbers there must be a separate one-itself, and if there is a separate one-itself there is a problem how a plurality of units can arise and be individuated; a contrary ἀρχή responsible for pluralization is treated as the best hope already in B#11. M6-N6, in ruling out any possible account of how separate numbers and their constituent units can arise, is not just answering B#11, but examining and excluding the whole approach to the ἀρχαί as ἀρχαί of separate unchanging things, one main branch of the metaphysical project. Second, we can see that these arguments are not just Aristotle's arguments against Plato, or Aristotle's arguments against Plato and against Speusippus' variant on Platonism. Rather, Aristotle's arguments are part of a continuing discussion within the Academy, with all sides adjusting their positions in response to each other's criticisms. In particular, criticisms of Plato's theory of the one and the indefinite dyad, and alternatives in the light of those criticisms, had been put forward by others in the Academy, and Aristotle is often adapting these arguments, turning them against their authors, and so on; in other words, he is part of a normal ongoing philosophical discussion. MN is an important branch of the argument of the Metaphysics, and a window into the Academy, but also into Aristotle's methods of constructing arguments in response to others' arguments. Metaphysics Iota, both in its account of unity and in its account of what is opposed to unity, lays the foundations, but for the consequences for numbers and for the ἀρχαί of numbers, which are a central motivation in Iota, we must turn to MN.