

Πε: Metaphysics Z17-H: How to give the λόγος τῆς οὐσίας of a composite thing  
 Πε1: Z17 and the new approach to οὐσία: ἀρχαί, causes, and στοιχεῖα

Z17 announces an investigation of οὐσία from a new starting-point (1041a6-7), the previous approaches having led to frustration. Aristotle offers his readers the hope that this will also help make clear to us the οὐσία that exists separately from sensible οὐσίαι (a7-9), but in the first instance he is proposing a new procedure for discovering the οὐσία of the manifest οὐσίαι, and we know by now that this will not lead in any direct way to οὐσίαι beyond the sensible. (An indirect benefit, in the form of methodological advice for finding the ἀρχαί, will emerge at the end of H6). Thus the investigation of Z17-H does not belong directly to first philosophy. But it belonged to the first philosopher to raise the aporia of Z13 against giving a λόγος τῆς οὐσίας, because, if the Platonists or the physicists of B#6 were right, the study of the ἀρχαί would be the study of the στοιχεῖα in the λόγοι of sensible things, and so it would belong to the first philosopher to give the λόγος of a sensible thing; and it belongs to the first philosopher to raise an aporia against claims which, if they were true, would belong to first philosophy. Aristotle thinks the aporia is fatal against both parties to B#6, who claim that their στοιχεῖα are ἀρχαί prior in οὐσία to the things defined. However, the aporia must somehow be resolved, if there is to be any kind of λόγος τῆς οὐσίας, and thus if there is to be science; and so it belongs to the first philosopher, having raised the aporia, also to resolve it. Z17, on the basis of its new starting-point, offers the key distinction which allows the aporia to be resolved; H works out the implications, addressing the aporia directly and outlining a procedure for giving a λόγος τῆς οὐσίας of a given thing. Thus while the division of the investigation of οὐσία in the first sentence of Z3 seems to cover only Z3-16, in one important sense Z17-H do not constitute a new investigation beyond that announced in Z3, but rather a positive continuation of the branch Z10-16; in another sense, precisely by giving a positive account of the οὐσία of a thing, and by not even trying to discover separate eternal οὐσίαι, they step outside the framework of Z3-16.<sup>1</sup>

The new starting-point is the maxim that "the οὐσία is an ἀρχή and a cause" (1041a9-10). That the οὐσία of a thing is in some sense an ἀρχή is not new; what will be new is the particular way that the οὐσία is an ἀρχή of the thing, starting from the formulation that it is a cause, and more specifically a cause of being to the thing. Aristotle develops this line of thought through the first half of the chapter, Z17 1041a6-b9, with a transitional comment 1041b9-11; then in the second half of the chapter, 1041b11-33, he derives the consequences for the relation between the special kind of ἀρχή that the οὐσία is and the στοιχεῖα of the thing. These consequences will make it possible in H to resolve the dilemmas of Z10-16, and ultimately B#6.<sup>2</sup>

That the οὐσία of a thing, in the sense of the essence, is "whatever is a cause of being, present

<sup>1</sup>here compare and contrast Burnyeat in particular. also comments on ZH as a unity, and cases to be made for putting an internal book-division before or after Z17 (noting comments of Jaeger 1912, Furth, FP, Burnyeat, and versions of scepticism about the unity of ZH, in moderate versions, notably Gill [following Kosman?], and some weird extremist versions that have been circulating lately [Yu]; also St. Thomas on H as positive and systematic by contrast with Z; perhaps this is also in Averroes or earlier commentators, d check). d think about where to put all this: some of this should go either in IIα3 or in the introduction to IIδ: the current version of the introduction to IIδ was written on the assumption that it was introducing just Z10-16, with a separate IIε on Z17-H; if these are being combined into a single chapter, the introduction to IIδ will need to address the issues of Z17 and H. currently there's a very brief comment in IIα3, somewhat more in the introduction to IIδ, d cross-refs

<sup>2</sup>note issue with Burnyeat (from review) about the internal articulation of Z17 (his attempt to find two levels here too)

[ἐνυπάρχον] in such things as are not said of a ὑποκείμενον, as the soul [is the cause of being] to an animal" was said in Δ8 (1017b15-16), and most immediately Aristotle at this new turning point of the investigation of οὐσία is returning to Δ8's list of senses of οὐσία. But beyond this, and most importantly, he is relying on the account of how the sciences investigate τί ἐστὶ in Posterior Analytics II.<sup>3</sup> (Turning to the Posterior Analytics here allows him to make a point: it is no surprise if definitions as they are constructed and understood in dialectic, or in pre-scientific pre-Socratic-style physics, do not succeed in giving the οὐσία; only scientific definition properly says τί ἐστὶ, and the Posterior Analytics analyzes the methods of science.) Posterior Analytics I had analyzed demonstrations, but left it unclear how we acquire the first premisses of demonstrations, including definitions (alongside hypotheses and axioms, Posterior Analytics I,10); Posterior Analytics II tries to explicate definition by starting with the classification of the four types of scientific question or investigation, and specifically with the thesis that the investigation τί ἐστὶ is to the investigation εἰ ἔστι as the investigation διότι is to the investigation ὅτι. Thus what X is is to that X is as why S is P is to that S is P; or, in short, what X is is the cause of the fact that X is. Aristotle now draws on this to propose that the right way to discover the οὐσία of X, i.e. the answer to τί ἐστὶ X, is to follow the procedure of the Posterior Analytics and investigate the cause. (Astonishingly, Bonitz and Ross and Frede-Patzig miss this; they think that Z17 is beginning from the premiss that an οὐσία is a cause--not specifically that the οὐσία of X is the cause of the existence of X--and inferring that an οὐσία is an essence or form [they do not really distinguish these two concepts]. But it is clear that Z17 begins from the assumption that the οὐσία of X is the essence of X, i.e. the content of a definition of X, turns to the Posterior Analytics for advice on how to define and takes from it the thesis that the essence of X is the cause of the existence of X, and then draws consequences for what sort of ἀρχή the οὐσία of X will be: the chief consequence is that the οὐσία of X is an ἀρχή of X which is neither a στοιχεῖον of X nor composed out of [one or some or all of] the στοιχεῖα of X. If this conclusion were equivalent to saying that the οὐσία of X is the form rather than the matter or something including the matter, then there might be a danger of circularity in beginning from the premiss that the οὐσία is the definable essence; but this is not what the conclusion means, and there is no circularity, see discussion below.)<sup>4</sup>

Z17 takes up two favorite examples of definienda from the Posterior Analytics, thunder {ref = ref} and (lunar) eclipse {ref = ref}, which can serve as models for investigating the οὐσία of X in general, including in the cases (most interesting from Z's point of view) where X is itself an οὐσία.<sup>5</sup> In each case, in order to investigate why X is, we must first know that X is, and in order to know or even meaningfully assert that X is, we must first have a nominal definition of X. In the case of thunder, that might be "noise in the clouds"; we first recognize that there is noise in the clouds, and then investigate why there is noise in the clouds, or (as Aristotle puts it {ref?}), why noise belongs [ὑπάρχει] to clouds; the answer "because fire is extinguished in the clouds"

<sup>3</sup>I think I have some discussion of this, at a rather more sophisticated level, in Iγ2c; what to do about the conflict?

<sup>4</sup>Burnyeat is a bit better. maybe add notes on the wanderings of the commentators; note at least some (Bonitz?) seem to think that the second half of Z17 is a parallel argument to the first half, rather than an application of it

<sup>5</sup>Ross on 1041b1 (AM II,224) says that the Posterior Analytics identifies what X is with why X is only in the case of accidents. but Aristotle, as often, is starting with accidents and passing to the parallel but case of οὐσία, which is less knowable to us because it is less easy to break X down into the appropriate ὑποκείμενον and what must be received in that ὑποκείμενον, see discussion below. the Posterior Analytics draws the τί ἐστὶν:εἰ ἔστιν::διότι:ὅτι analogy without restriction, and it is not true that it gives only accident-examples: Posterior Analytics II,8 93a21-4 gives the examples of what man is and what soul is in parallel with what thunder is and what eclipse is, and the procedure is clearly supposed to be analogous in all cases

gives us the scientific definition of fire as "noise produced by extinction of fire in the clouds." Likewise the nominal definition of (lunar) eclipse might be "darkening of the moon" or more precisely "darkening of the moon at opposition"; if we ask why darkness belongs to the moon, or why the moon is darkened, and discover that it is because the earth when directly interposed between moon and sun blocks the sun's light from the moon, this gives us the scientific definition of eclipse as "darkening of the moon due to interposition of the earth between moon and sun." In both of these cases, we need to rewrite a 1-place assertion of being, "X is," as a 2-place assertion of being, "S is P," in order to investigate its cause (as Aristotle puts it a bit further down, δεῖ διαρθρώσαντας ζητεῖν, 1041b2-3).<sup>6</sup> Instead of seeking the cause, to X, of the fact that it is, or the cause, to X, of the fact that it is X--formulations that seem to lead to dead ends--we seek the cause, to S, of the fact that it is P. As Aristotle puts it here, "the why [τὸ διὰ τί] is always investigated/sought in this way, why something belongs [ὑπάρχει] to something else" (Z17 1041a10-11), whereas to ask why something is itself leads to tautology.

The problem, however, is to find the appropriate 2-place reformulation for "X is": this may be obvious enough where X is lunar eclipse, or musical man ("musical man is" = "a man is musical," "musical belongs to man"), but is less obvious when X is itself an οὐσία. The main task will be to identify the appropriate subject-term S; but this will be whatever the per se ὑποκείμενον is of which X is predicated. Aristotle considers different kinds of examples. If X is house, then its per se ὑποκείμενον might be (for purposes of the argument) bricks and stones; then to say that a house is is to say that some bricks and stones are a house, and to investigate why a house is is to investigate why these bricks and stones are a house (so Z17 1041a26-7, with an explicit analogy to thunder). However, he also gives another kind of example: where X is man, ζητήσεται δ' ἂν τις διὰ τί ἄνθρωπος ἐστὶ ζῶον τοιονδί (1041a20-21, AbM). That must mean "why thus-and-such an animal is a man," analogous to διὰ τί ταδί, οἶον πλίνθοι καὶ λίθοι, οἰκία ἐστὶν (a26-7), and not, as EJ (and most modern editors) have it, διὰ τί ὁ ἄνθρωπος ἐστὶ ζῶον τοιονδί, "why man is thus-and-and-such an animal."<sup>7</sup> As we have seen, Aristotle treats the genus as the appropriate matter or matter-of-the-form of the species, and treats "animal" and "bricks and stones" as analogous. Thus at 1041b5-8 he picks up the examples of house and man again, and says that we seek or investigate "why the matter is something [τὴν ὕλην ζητεῖ διὰ τί ἐστὶν]."<sup>8</sup> For instance, why are these things [ταδί] a house? Because there belongs/is present [ὑπάρχει] what-it-is-to-be-a-house.<sup>9</sup> And [why is] this [these things?],<sup>10</sup> or

<sup>6</sup>Ab διαρθρώσαντας is certainly right over the vague lectio facilior διορθώσαντας EJ

<sup>7</sup>note as in OSAP paper {perhaps note on Ab and EJ in general and in Z17}. Jaeger and Frede-Patzig print ὁ ἄνθρωπος; Ross prints ἄνθρωπος, which means that in Ross' judgment Aristotle wrote ΑΝΘΡΩΠΙΟΣ; why then interpret it as ὁ ἄνθρωπος, which makes less sense?

<sup>8</sup>the second τὶ is not in the manuscripts, but is Christ's supplement, accepted by Ross and Jaeger (d check FP), with a trivial disagreement on whether to print τί ἐστὶν or τὶ ἔστιν. a supplement is pretty clearly needed (the question isn't why the matter exists), b8 where we're seeking the cause of the matter ᾧ τί ἐστὶν (or τὶ ἐστὶν according to your preference) makes clear what is needed, and the corruption from τί τί ἐστὶν to τὶ ἐστὶν is extremely easy. the alternative supplement τοδί mentioned in Jaeger's apparatus is wrong, as is clear from the immediately following phrase, οἶον οἰκία ταδί διὰ τί; {if, as is less likely because lectio facilior, AbM οἶον οἰκία ταδί διότι ... instead of EJ οἶον οἰκία ταδί διὰ τί; ὅτι ..., the point will be the same; see next note on the reading of Ab}, where ταδί is not the predicate but the underlying matter; the predicate is the indefinite οἰκία, generalized by Christ's τὶ in 1041b5 <sup>9</sup>as noted in the previous footnote, I am following (with Jaeger and Ross, check other editors) EJ οἶον οἰκία ταδί διὰ τί; ὅτι ... rather than AbM οἶον οἰκία ταδί διὰ τί; ὅτι ...; the difference will not be much. {if I understand the manuscript situation correctly, Jaeger's apparatus is misleading in suggesting that Ab omits ταδί here; in fact--if I've got this right--the ταδί which Ab omits is the ταδί which Jaeger does not print, immediately before ὑπάρχει}. also where EJ have ταδί ὑπάρχει ὅ ἦν οἰκία εἶναι against AbM ὑπάρχει οἰκία εἶναι, and Ross and Jaeger compromise on ὑπάρχει ὅ ἦν οἰκία εἶναι, I am provisionally assuming the text of Ross and Jaeger, but I wonder

[this?] body when it is disposed in this way, a man?<sup>11</sup> So we are seeking the cause of the matter (that is, the form) by which it is something; and this is the οὐσία."<sup>12</sup> Despite all the textual uncertainties of this passage, it is clear that "body" or "this body" is proposed as the ὑποκείμενον of man in the same way that bricks and stones are the ὑποκείμενον of house; "body" can be taken indifferently as the genus of man (more general than "animal") or as his matter, and the differentia or the form which is responsible for a body's being determined as human will be the οὐσία of man; τὸ σῶμα τοδὶ ἔχον or ὠδὶ ἔχον here corresponds to ζῶον τοιονδὶ at 1041a21. Once, for a given X, we have found such an appropriate ὑποκείμενον S, we will look for the cause why S is X, which might be in some cases a final cause (as in the case of a house, where what makes these bricks and stones a house is that they are assembled in order to shelter persons and chattel), in other cases an efficient cause (the cases reviewed 1041a27-32), but which will nonetheless be entailed by the form of X and will be present in its definition, as the interposition of the earth between sun and moon is present in the definition of lunar eclipse.<sup>13</sup>

As Aristotle says, "it is therefore clear that there is no investigation or teaching in the case of simples, but rather a different mode of investigating such things" (1041b9-11), where presumably the "different mode of investigating" is not properly speaking investigating the simple thing X, i.e. starting from X and determining its essence, but starting from something else and reaching the simple thing X, or starting from a vaguer description of X and reaching the conclusion that X is simple and cannot be further determined. (Thus we might start from the daily motion of the heavens and reach its mover, or start from the ἴδιον "the mover of the daily motion of the heavens," trying to determine the essence of this thing, and conclude that it is a simple, best described by the negation of any composition.) If X is a simple, then we will not be able to find a per se ὑποκείμενον and then a form or differentia added to this ὑποκείμενον to constitute X, and so we will not be able to rewrite "X is" as a two-place assertion of being, and thus Aristotle's technique for finding a λόγος τῆς οὐσίας will not work. But this is not Aristotle's

---

whether the text of EJ is defensible. that would depend on taking ὑπάρχει as indicating predication, "because these things are what-it-is-to-be-house" {is that also what ὑπάρχειν means at 1041b4-5? or is ὑπάρχειν there 1-place, with its subject τὸ εἶναι? and what does ἔχειν mean in b4? Ross ad locum "δεῖ ἔχειν, 'one must know,'. Cf. Bz. Index 305b46", followed by FP--I would be surprised, but d follow through Bonitz' texts, which do not at first seem overwhelming}. Bonitz following some recentiores prints ταδί after ὑπάρχειν, apparently with the sense "these things, sc. whatever it is to be a house, are present/obtain" {note throughout this passage that while Ross' and Jaeger's texts are similar, Bonitz' is significantly different--perhaps Bonitz is more willing to follow recentiores? Christ was probably the innovator here, largely followed by Ross and Jaeger, except that they add J, which doesn't make too much difference in practice since it rarely differs in any significant way from E}

<sup>10</sup>EJ ὀδί, Ab τοδί, M ταδί. M's reading would make sense, but stemmatically it seems more likely that the original divergence was between ὀδί and τοδί, and that ταδί is a corruption of τοδί; ταδί is I suppose also lectio faciliior in context

<sup>11</sup>ἢ τὸ σῶμα τοῦτο τοδὶ ἔχον EJ, ἢ τὸ σῶμα τοδὶ ἔχον AbM; whether we keep τοῦτο or not, Bonitz' emendation of τοδὶ to ὠδὶ (accepted by FP) is probably necessary. if we keep the transmitted text, then "this body, when it has [=when there is present in it] this [form or essence]" (so Ross). it seems reasonable to print a question-mark with FP <sup>12</sup>τὸ αἴτιον ζητεῖται τῆς ὕλης (τοῦτο δ' ἐστὶ τὸ εἶδος) ᾧ τί ἐστὶν· τοῦτο δ' ἢ οὐσία. I think Christ and Jaeger are probably right in deleting "τοῦτο δ' ἐστὶ τὸ εἶδος" as a gloss or (as Jaeger would have it) a varia lectio of "τοῦτο δ' ἢ οὐσία"; treating it as merely parenthetical means too long a gap before "ᾧ τί ἐστὶν" and too close a duplication of "τοῦτο δ' ἢ οὐσία". Burnyeat cites Laks as proposing to construe the sentence instead as "τὸ αἴτιον ζητεῖται τῆς ὕλης, τοῦτο δ' ἐστὶ τὸ εἶδος ᾧ τί ἐστὶν· τοῦτο δ' ἢ οὐσία," "we are seeking the cause of the matter, i.e. the form by which it is something, and this is the οὐσία"; but it seems to me to be dubious to speak simply of "the cause of the matter," rather than the cause by which the matter is something (the form is properly the cause of the composite, not of the matter)

<sup>13</sup>there is no reason to bracket at 1041a28. maybe say something about λογικῶς. on τοιοῦτον/θότερον at a31-2, probably efficient vs. final

fault: simple things do not have λόγοι, and both physicists and dialecticians agree that it is complexes that have λόγοι spelling them out in terms of their simple constituents, whether these are maximally universal genera, or earth, water, air, and fire, or Democritean atoms. Thus "since the so-called genera are universal and indivisible (for there is no λόγος of them), some people say that the genera are στοιχεῖα" (Metaphysics Δ3 1014b9-11). And thus Socrates in the third part of the Theaetetus, in recounting his Dream, says that the στοιχεῖα can only be named, and that since a λόγος is an interweaving of different names and there is no ἐπιστήμη without λόγος, "the στοιχεῖα are ἄλογα and unknowable [ἄγνωστα], but only graspable by sensation [αἰσθητά]" (202b5-6); the λόγος of the first syllable of "Socrates" is "that it is sigma and omega," but sigma itself has no λόγος (203a3-b7).<sup>14</sup> Aristotle seems to be echoing this part of the Theaetetus when he says in Posterior Analytics II,19 that "all ἐπιστήμη is together with λόγος" and therefore that since the ἀρχαί have no λόγος, there is no ἐπιστήμη of the ἀρχαί, but rather νοῦς (100b10-12): Aristotle seems to be interpreting Socrates' insistence that the στοιχεῖα can be grasped only by "sensation" as meaning that they can be grasped only by an immediate act of intellection superior to ἐπιστήμη, and he is very likely to be right. What Aristotle means by saying in Z17 (in agreement with the Socrates of the Theaetetus and perhaps with a consensus of physicists and dialecticians) that there is properly speaking no investigation of simples becomes clearer in Θ10, where "it is impossible to be deceived about incomposite οὐσίαι, and they are all in actuality, not in potentiality ... so things which are just a being [ὅπερ εἶναι τι--as opposed to being composed out of an essence and a subject that underlies it] and [in?] actuality,<sup>15</sup> about such things there is no being deceived, but rather either thinking [νοεῖν] them or not; but the τί ἐστι is investigated about them,<sup>16</sup> whether they are such or not" (1051b26-33), i.e. the only way to investigate τί ἐστι about such an incomposite οὐσία is to investigate whether it is such an incomposite οὐσία, and, if the answer is yes, the investigation ceases.<sup>17</sup>

Thus for the remaining half of Z17 (1041b11-33) Aristotle is investigating only the λόγος τῆς οὐσίας of a composite thing, of which the paradigm case is a syllable. The main thesis of the second half of Z17, drawing on the application of the Posterior Analytics in the first half, is that the οὐσία of a composite thing is an ἀρχή of the thing (an ἀρχή prior in a broad sense, not implying capacity for separate existence) which is neither a στοιχεῖον nor itself composed of στοιχεῖα. This thesis, and more importantly the thinking-through of the ἀρχή/στοιχεῖον distinction (clear from the juxtaposition of Δ1 on ἀρχή and Δ3 on στοιχεῖον, but not yet explicitly applied in the Metaphysics) which necessarily accompanies the proof of the thesis, are supposed to make possible, in H, the solution of the aporia against the possibility of definition raised in Z13, and thus a final solution to B#6 and a positive program of formulating the λόγος τῆς οὐσίας of a given composite object. Although Aristotle is explicit enough about his thesis in Z17, there has been considerable confusion in the scholarly literature about its meaning, with most commentators thinking that the main conclusion of Z17 is that the οὐσία of a sensible thing is its form (as opposed to its matter or to something including its matter). Aristotle does, of course, believe that the οὐσία of a composite thing is its form, and he has said so, indeed taken it for granted, earlier in Z (e.g. Z7 1032b1-2, Z11 1037a5-7), but he does not seem to be saying

<sup>14</sup>see discussion in IIδ above; I will return to this below

<sup>15</sup>ἐνεργεῖαι (i.e. ἐνεργεία) codices, ἐνέργειαι Ross. if Aristotle wrote ENERGEIAI, the scribes' choice of accentuation has no particular authority. however, at b28 (quoted above), ἐνεργεῖαι seems guaranteed (although Ab has ἐνέργειαι) by the contrasting δυνάμει

<sup>16</sup>EJ τὸ τί ἐστι ζητεῖται; Ab has τὸ ἔστι ζητεῖται.

<sup>17</sup>check whether I've got discussion/translation of this text elsewhere, and incorporate the notes on Θ10 in the "revisions" document

that here: Z17 uses the word εἶδος only once, in a phrase (1041b8) which many editors delete as an interpolated gloss, and which, even if authentic, seems to be parenthetical; in this chapter Aristotle is either not saying at all the οὐσία is the form, or not saying it with any emphasis. Rather, the conclusion is a commentator's gloss on Aristotle's saying that the οὐσία is an ἀρχή which is neither a στοιχεῖον nor composed of στοιχεῖα (and that, at least in the case of the syllable, it is the cause of unity to the many στοιχεῖα): if we gloss "στοιχεῖον" as "material constituent," we can translate this into saying that the οὐσία is neither a material constituent nor composed of material constituents, and therefore by process of exclusion must be the form. And Aristotle does indeed say that "a στοιχεῖον is that into which a thing is divided, being present in the thing [ἐνυπάρχον] as matter,<sup>18</sup> as the α and the β are στοιχεῖα of the syllable [sc. βα]" (Z17 1041b31-3). And Aristotle does indeed believe that the οὐσία of a composite thing is its form, and it can indeed be inferred from what he says here, but in the argumentative economy of Z there would be no point in his arguing for it again here.<sup>19</sup> To say that the οὐσία of a thing is neither a στοιχεῖον nor composed of στοιχεῖα implies that the οὐσία is a form (or anyway that it has no matter), but it is strictly stronger than saying that the οὐσία is a form: someone who thinks that the οὐσία is a form might very well still hold that it is a στοιχεῖον or composed of στοιχεῖα, and Aristotle is concerned to refute this position just as much as narrowly materialist views. N4 lists as one of the reasons the Academics go wrong about the ἀρχαί that "they make every ἀρχή a στοιχεῖον" (1092a6-7), and so in saying that the οὐσία is an ἀρχή which is not a στοιχεῖον Aristotle will be contradicting the Academics as much as the physicists.<sup>20</sup> And, as we have seen, both the physical and the dialectical sides of the aporia raised in B#6 and taken up in Z10-16 think that the λόγος τῆς οὐσίας of a thing consists in spelling it out into its στοιχεῖα, whether these στοιχεῖα are (as the physicists say) the material constituents in the ordinary sense, or (as the dialecticians say) the genera as στοιχεῖα of the form or species. Aristotle thinks that Plato and other Academics have here borrowed from the physicists a dangerously materialistic metaphor for the ἀρχαί, and that they get into all kinds of difficulties as a result, which we have seen worked out in detail notably in Z14 (there is more in H and MN). Indeed, in H3 he goes so far as to accuse the dialecticians of citing exclusively material ἀρχαί: "nor is man animal and biped, but there must be something beside these, if these are matter, something which is neither a

<sup>18</sup>better "that into which a thing is divided as matter, being present [within the thing; or a constituent, ἐνυπάρχον]"?

<sup>19</sup>the commentators are in some embarrassment as to why the "fresh start" of Z17 should be needed, since Aristotle has certainly treated form and essence before, and said that they are οὐσία. Ross says that Aristotle "has discussed essence from many points of view, but without reaching any very definite conclusion as to whether it is substance (chs. 4-12)" as well as giving negative judgments on other characterizations of substance (matter, universals, parts) (AM II,222, basically following Bonitz, see at the beginnings of Z17 and Z15); as far as Z4-12 goes, this is complete nonsense. Frede-Patzig try, in their note on Z17 1041a6-7 (II,308), to diminish the claim of novelty, but they have no real explanation for why Aristotle thinks the fresh start is needed. for Burnyeat, of course, Z17 is just part of a larger pattern, of Aristotle following several independent paths from different starting-points, all leading to the conclusion that the οὐσία of a thing is its form (not that he has any very satisfying explanation for this larger pattern). I agree with Frede-Patzig and Burnyeat, against more "aporetic" readers, that Aristotle is not saying that his project in Z3-16 has failed; it is other people's projects, of finding an οὐσία-ἀρχή, prior to the thing and so on, in the ὑποκείμενον or the essence or the parts of the λόγος, which have failed; more particularly, those who assume that the στοιχεῖα are prior κατ' οὐσίαν to the thing and are actual οὐσίαι present in the thing, and so on, have no way to resolve the aporia of Z13, and this is why a fresh start is needed, critically examining the shared assumptions of the physical and dialectical sides to B#6. this does not explain why Aristotle would need to give a fresh argument that οὐσία is form, and indeed he does not

<sup>20</sup>indeed, Aristotle himself says in Λ that the form and matter are στοιχεῖα although the efficient cause is an ἀρχή which is not a στοιχεῖον. why he should draw the ἀρχή/στοιχεῖον distinction in different places in Z and Λ {and cp. N} is an interesting question to which I return in IIIβ1--perhaps here give a quick preview of my conclusions

στοιχεῖον nor [composed] out of a στοιχεῖον, but the οὐσία; but they leave this out, and state [only] the matter" (1043b10-13).<sup>21</sup> Since this passage is obviously drawing on Z17, whose language it closely echoes, it is clear that when Z17 likewise says that the syllable is not the same as its στοιχεῖα but also something beside these which is the οὐσία, neither a στοιχειον nor [composed] out of στοιχεῖα, it too intends to exclude the view that man is just animal and biped, a view on which the οὐσία would be a form composed out of the genera and differentiae as στοιχεῖα. So when Z17 "a στοιχεῖον is that into which a thing is divided, being present in the thing [ἐνυπάρχον] as matter,<sup>22</sup> as the α and the β are στοιχεῖα of the syllable [sc. βα], "στοιχεῖον" here has to include not only sensible matter but also the "matter of the form." Indeed, we have seen that α and β are not sensible matter, but rather matter of the form of βα, having the same status as the genera ("the form is out of the matter of the form ... the way man is out of biped and the syllable is out of the στοιχεῖον", Δ24 1023a35-b2, cited Πα3 and Πδ above, rearranged), so that the conclusions of Z17 should apply equally to both cases.<sup>23</sup>

Aristotle thus argues that, if we apply the methodology of Posterior Analytics II to defining a composite thing, like a syllable, the οὐσία will be another ἀρχή beside the στοιχεῖα:

Since what is composed out of something [is composed] in such a way that the whole [τὸ πᾶν] is one, if it is not like a heap but like a syllable,<sup>24</sup> the syllable will not be the στοιχεῖα, nor β and α the same as βα,<sup>25</sup> nor the flesh fire and earth (for when they have been dissolved, these things, e.g. the flesh and the syllable, no longer exist, but the στοιχεῖα and the fire and earth [still] exist): so the syllable is something, not only the vowel and consonant στοιχεῖα but also something else, and flesh is not only fire and earth or hot and cold but also something else; so if it were necessary that this too be either a στοιχεῖον or out of στοιχεῖα, then if it is a στοιχεῖον the same argument would hold (for the flesh would be out of this and fire and earth and something else again,<sup>26</sup> so that it will proceed to infinity); and if it is out of στοιχεῖα, clearly it must be not out of one but out of several, or it will be that [single στοιχεῖον out of which it is]; so that in this case too [if the οὐσία of the syllable is out of several στοιχεῖα] we will again give the same argument

<sup>21</sup>there is an important textual issue here; I will discuss the passage in detail in the next section

<sup>22</sup>better "that into which a thing is divided as matter, being present [within the thing; or a constituent, ἐνυπάρχον]"?

<sup>23</sup>Burnyeat p.61 says that the syllable here, since it can perish, "is clearly a token, not the type, so there is no inconsistency with the doctrine of Z10.1-35 that the letters are parts of the form." but Aristotle's concern with how to define something, of which the syllable βα is an example, and tokens cannot be defined. (nothing can be inferred from Aristotle's saying that βα perishes into β and α; "man perishes" can be a statement about the species.) Aristotle describes the στοιχεῖα here as matter, but that is consistent with their being parts of the form, since they are matter-of-the-form, and Aristotle is interested in distinguishing the οὐσία of something, not just from its sensible matter, but also from its matter-of-the-form or appropriate matter; as we saw in Z12, where the οὐσία of the thing is its ultimate differentia rather than its genera. more on the relation with Z12 below

<sup>24</sup>reading ἂν μὴ with Ab and Ross (EJ Bonitz have ἀλλὰ μὴ, Jaeger prints μὴ); then reading ἢ τε συλλαβὴ οὐκ ἔσται with Ab, against ἢ δὲ συλλαβὴ οὐκ ἔστι EJ Bonitz Ross Jaeger; this allows us to read the sentence without anacoluthon. I am not sure this is right (Ab could be smoothing) but it seems worth trying {from Crubellier's negative apparatus it seems that M agrees with EJ against Ab on the τε/δέ and ἔστι/ἔσται issues, which if so means Ab's readings are unlikely to be right; M would agree with Ab on ἂν μὴ}

<sup>25</sup>reading with M ταὐτὸ τῷ βα τὸ β καὶ α, the only manuscript reading that stands a chance of being right, although Ross and Jaeger might be right too. nothing much hangs on it

<sup>26</sup>reading ἔτι ἄλλου EJ Ross against εἶ τι ἄλλο Ab Jaeger. M has ἔτι ἄλλο, which seems unconstruable; this suggests that the archetype had ἔτι ἄλλου, the hyparchetype of the β tradition corrupts to ἔτι ἄλλο, Ab corrects to εἶ τι ἄλλο.

as in the case of the flesh or the syllable. So it would seem that this is something which is not a στοιχεῖον, but is a cause of this's being flesh and that's being a syllable, and likewise in other cases; and this is the οὐσία of each thing (for this is the first cause of being). (Z17 1041b11-28)

Here Aristotle is responding to the Theaetetus, and denies the Theaetetus' (apparent)<sup>27</sup> identification of the syllable with "all the στοιχεῖα." The argument that Aristotle uses, that β and α can continue to exist when βα no longer exists, seems in a sense too broad, since it would apply also to purely accidental unities such as β-two-feet-above-α. However, Aristotle can reply that even β-two-feet-above-α is something beside β and α, but that in this case what is beside β and α is only an accident, here a relation, whereas if the syllable is an οὐσία, what is beside the στοιχεῖα will be an οὐσία. (Recall from Z13 that if βα is actually one οὐσία, the β and α in βα cannot be actually many οὐσίαι; they must be, of themselves, potentially one, becoming actually one when united in the syllable, and actually many when the syllable is dissolved. The presence of an accident would not be enough to make them actually one οὐσία; a heap, as opposed to a syllable, would be actually many οὐσίαι with a merely accidental unity.) The last sentence of the quoted passage makes clear that Aristotle is applying the methodology for investigating οὐσία that the first half of Z17 has extracted from the Posterior Analytics: "the οὐσία of each thing (for this is the first cause of being)" is "a cause of this's being flesh and that's being a syllable, and likewise in other cases." The οὐσία of βα will be "the cause of that's being a syllable," where that is the appropriate ὑποκείμενον of the syllable βα, namely β and α: the οὐσία of βα will be whatever cause makes β and α βα, rather than αβ or two separate στοιχεῖα. So much follows automatically from the first half of Z17, applied to the case of the syllable; where Aristotle seeks to make further progress is by arguing that this cause is neither itself a στοιχεῖον of βα, nor composed of στοιχεῖα. He takes it for granted that this cause is neither β nor α, so that if it is a στοιχεῖον of βα it is a third στοιχεῖον added to β and α; but if it is a third, as it were invisible στοιχεῖον contained in βα beside β and α, then again there will be a need of a further cause which makes β and α and the third στοιχεῖον into a syllable, and there will be an infinite regress of στοιχεῖα within the syllable. Again, if we posit that this cause is itself composed of στοιχεῖα, it will be composed of more than one (Aristotle assumes that the concept of στοιχεῖον, and of dividing a thing into its στοιχεῖα, implies that there is more than one of them, otherwise there is not division), and these will require a further cause to make them into a single thing, and again there will be an infinite regress of causes of unity and στοιχεῖα within them. The claim seems to be not just that these regresses must be broken at some stage, but that only the eventual cause which is not itself a στοιχεῖον and does not need a further cause to unite it to the other στοιχεῖα, and which is not itself composed of στοιχεῖα and does not need a further cause to unite its στοιχεῖα to each other, will be the genuine cause of unity to the initial syllable; and so we should have jumped immediately to it as the cause of unity, and skipped the intermediaries. In any case, we have seen that not everything is either a syllable or a στοιχεῖον; there must be a third option, however it is to be characterized, and it is here that we must look for the cause of being of a syllable. Thus "since some things are not οὐσίαι, but those which are οὐσίαι are constituted according to nature and by nature, this nature would seem to be an οὐσία, which is not a στοιχεῖον but an ἀρχή; a στοιχεῖον is that into which a thing is divided, being present in the thing [ἐνυπόρχον] as matter, as the α and the β are στοιχεῖα of the syllable [sc. βα]"

<sup>27</sup>same footnote as in OSAP if I haven't already included it; reference to discussion in IIδ.



(1041b28-33).<sup>28</sup> Aristotle is here certainly not concluding the chapter and the book with an emphatic declaration that, among sensible things, only the natural ones and not artifacts are genuine οὐσία: that would come out of the blue, with no argument at all, and without much indication that the issue had ever been of interest. Rather, his tone here is concessive: admittedly, many sensible composites (such as heaps, or indeed syllables) are not οὐσία, and so seeking the cause of being of such things will not get us to the οὐσία of sensible οὐσία; nonetheless, the examples we have given, which are easier to analyze, are analogical models for seeking the causes of being of the more interesting natural bodies (the things to which οὐσία most obviously belongs according to Z2, presumably because prior to all other bodies); in such cases, the cause of being will be the nature, and this nature will be, like the cause of unity to the β and α in βα, an ἀρχή which is not a στοιχείον. The emphatic final position is given, not to considerations about nature, but to the ἀρχή/στοιχείον distinction, here made explicit for the first time and offered as the key to solving the problem about οὐσία, and to the notion of στοιχεῖα as ἐνυπάρχοντα into which things are divided as matter, taken from Δ3.

But what are we supposed to have learned in concluding that the cause of being of a composite is not a στοιχείον? In the case of the syllable βα, we have learned that the letters β and α are not enough to be its cause of being, and whatever else must be added to β and α to turn them into βα cannot literally be a third letter in the syllable; we are also not to think of it as analogous to a letter, although it must still be some kind of ἀρχή. But how exactly will it be different from a letter, and how will that solve the problem of a regress of στοιχεῖα? It is not enough simply to say that it is formal rather than material: as we have seen, Aristotle thinks that people who think of the form as a στοιχείον, or as being composed out of the genera as στοιχεῖα, are in the same difficulty as those who posit more straightforwardly material στοιχεῖα. But what are these people doing wrong, and how should their way of thinking of the ἀρχαί be modified to solve the problem? The crucial assumption that generated the regress was that neither β nor α can be the cause of the unity of β with α and thus of the being of βα; whatever third thing X we introduce as a cause must also be the cause of its own unity with the στοιχεῖα in the syllable. But for this solution to be possible, X must not be capable of existing καθ' αὐτό apart from the στοιχεῖα: its existence must entail that they exist and are united to it. (Thus X cannot be a στοιχείον in the sense that the composite is "divided" into it and the other στοιχεῖα: if the composite is "divided," in such a way that X ceases to be united to the στοιχεῖα, X must cease to exist.) This will be the case if the στοιχεῖα are the per se ὑποκείμενον for X, not in the sense in which they are the per se ὑποκείμενον for the syllable, not in the sense in which the matter is the per se ὑποκείμενον for the matter-form composite, but in the sense in which the matter is the per se ὑποκείμενον for the form, if the form is something like the form of snubness, which is said neither according to nose nor without nose. Just saying that the cause X is united to the στοιχεῖα as form to matter is not in itself a solution: if X is a form which can exist separate from matter, or even if X depends on a more general matter but not on the particular matter of the στοιχεῖα (say

<sup>28</sup>note textual issues (i) ὄσαι οὐσία is right, (ii) κατὰ φύσιν καὶ φύσει is one of Jaeger's more plausible cases for a varia lectio in the hyparchetype of E and J, but it remains possible that J preserves the original reading, and that E and Ab independently simplify {as FP note, Asclepius has it, so much older than e.g. a marginal note in the exemplar of J}; if we keep J's text, maybe "naturally, and thus by some nature," making a transition to thematizing that nature {FP's idea of a κατὰ φύσιν/φύσει distinction less likely, where such a distinction does appear the φύσει things aren't οὐσία}; (iii) the more interesting issue is 1041b30 φανεῖη ἄν τισι; if this is right, which it might be, it weakens all the more the point about nature; but more likely it's like δόξετε δ' ἄν in b25 (who reads the καί mentioned by Ross but not Jaeger? it seems the archetype must have had something there, presumably something ending in iota). M agrees with Ab throughout here.

X is the form of sphere, which depends on three-dimensional extension but not on bronze), a further cause of unity of X and the στοιχεῖα will be required. What is needed is that X should depend in its λόγος on the στοιχεῖα, in the way that "with the β before the α", as the cause that makes β and α into the syllable βα, depends on β and α.

This line of thought helps to show how Aristotle would avoid the argument which Plato uses in the *Theaetetus* to show that the syllable must be the same as all its στοιχεῖα together. Working on the hypothesis that nothing can be scientifically known without a λόγος, that στοιχεῖα are unknowable because they are simples and so have no λόγοι, and that we can know syllables only by going through their στοιχεῖα and thus giving their λόγος, Plato argues that if the syllable is something other than all its στοιχεῖα, but is rather "some one form that comes-to-be out of each of the στοιχεῖα when they are fitted together" (204a1-2), then the syllable too will be simple and will not have a λόγος, and so will be unknowable like the στοιχεῖα (205c1-e4, cited IIδ above). Aristotle will say that while the syllable contains something else, the οὐσία, beside the στοιχεῖα, and while this οὐσία itself cannot have στοιχεῖα on pain of an infinite regress, this οὐσία is not itself a further simple in the same sense that the στοιχεῖα are, as if it could exist apart from them. Rather, it presupposes the στοιχεῖα as its appropriate matter, and is neither them nor without them, as snubness is neither nose nor without nose, and so a λόγος can be given of it, in the same qualified sense that a λόγος can be given of snubness: we explain what snubness is by explaining what it is for a nose to be snub, and we explain what the οὐσία of βα is by explaining what it is for β and α to be βα (namely, for them to be joined with the β before the α). As we saw, this is how Aristotle explains the relation between genus and differentia, with the differentia presupposing the genus as snub presupposes nose, rather than being added to it as a further στοιχεῖον: this was the key to his resolving an aporia against genus-differentia definitions in Z12, and he takes the idea up again in Z17 and in its subsequent development in H.

This is not a coincidence: the genus-differentia definitions discussed in Z12 are among the kinds of λόγοι τῆς οὐσίας that will result from the procedure described in Z17: this is clear from the example of man, where we start from the appropriate ὑποκείμενον, animal, and then investigate the cause why thus-and-such an animal is human, which will be a differentia. Indeed, the example of βα can be put in this way too: the genus of βα is β and α, and the differentia of βα is with-the-β-before-the-α. And it would be very surprising if Z17, in describing the οὐσία of a thing, contradicted the conclusion of Z12 that the οὐσία of a thing is its ultimate differentia. Z17 is, rather, going beyond Z12, asking further questions about the status of the οὐσία of a thing and its relation to the στοιχεῖα and the procedure for finding it, and doing so in a broader context, rather than simply assuming the genus-differentia structure of definitions.

The scholarship usually has not connected Z17 with Z12 on differentiae, in part because of the false view that Z12 is not an intended part of Z, but also because Z17 is usually taken to say that in every case the οὐσία of a thing is the cause of unity to its many στοιχεῖα (and this is taken to mean the cause that unifies and arranges the material constituents--which is just to say, the form). But actually Z17 seems not to say this. Z17 says that in every case the οὐσία of X is the cause which explains why the ὑποκείμενον of X is X; this will be a cause of unity to many στοιχεῖα in the case of house (where the ὑποκείμενον is bricks and stones), but apparently not in the case of man as Aristotle describes it in Z17. Aristotle thinks that in every case the οὐσία is an ἀρχή which is neither a στοιχεῖον nor composed of στοιχεῖα, and he devises a clever infinite regress argument to prove this in the cases where the οὐσία is a cause of unity to many στοιχεῖα. This proof also clarifies the concept of an ἀρχή which is not a στοιχεῖον, and allows us at least to recognize the possibility that the οὐσία is in every case not a στοιχεῖον; perhaps it

even allows us to prove this, since if the οὐσία of X were a στοιχείον of X, there would have to be at least one other στοιχείον, and if no στοιχείον can be the cause of its own unity with other στοιχεῖα, there would have to be a further cause of the (at least two) στοιχεῖα in X, and this, rather than any of the στοιχεῖα, would be the οὐσία of X. But none of this implies that in every case the οὐσία of X is the cause of unity to many στοιχεῖα, or that every X has many στοιχεῖα that must be mentioned in its definition. Beyond the example of man in Z17 itself, this point becomes clear in H, which (as we will see in the next section) is systematically applying Z17's procedure for formulating the οὐσία of a thing: first find the appropriate ὑποκείμενον of X, then find the cause which makes this X (this procedure is made especially explicit in H4, but governs the whole of the book). H2 puts this by saying that having discussed the "οὐσία as underlying [ὑποκειμένη] and as matter, and this is what is potentially [οὐσία]," we must proceed "to say what the οὐσία as ἐνέργεια of the sensibles is" (1042b9-11), where this is the differentia. But "there are clearly many [kind of] differentiae: some things are said through the composition of the matter, as whatever are said through blending, like honey-water; other things are said through tying, like a bundle; others by gluing, like a book [i.e. a scroll]; others by nailing, like a box; others by several of these; others by position, like a threshold and a lintel [at the bottom and top of a doorway respectively], for these differ by being placed [κεῖσθαι] in a certain way; others by time, like dinner and breakfast; others by place, like the winds; others by affections of the sensibles like hardness and softness, denseness and rareness, dryness and wetness, and some by some of these and some by all of these, and, in general, some by excess and some by deficiency" (1042b15-25). Here the differentiae which are the οὐσίαι of the box, book, bundle and honeywater are causes of unity to many στοιχεῖα, but it seems very hard to maintain this for the threshold, the winds, and breakfast, or for hardness and softness and so on; and yet Aristotle treats all of these as cases of the same procedure of definition, surely the procedure introduced in Z17. In H, as in Z17, Aristotle is concerned to show the insufficiency of definitions that merely list στοιχεῖα, including the genera and differentiae when these are conceived as material constituents in the intelligible world, which is how he thinks the Platonists conceive them ("nor is man animal and biped, but there must be something beside these, if these are matter, something which is neither a στοιχείον nor [composed] out of a στοιχείον, but the οὐσία; but they leave this out, and state [only] the matter," H3 1043b10-13, cited above); but he does not claim that in every case the οὐσία is the cause of unity to many στοιχεῖα, and his positive view is surely not that the οὐσία of man is a third thing which is the cause of unity to the στοιχεῖα animal and biped, but rather that it is biped (or whatever the ultimate differentia of man turns out to be), which when rightly conceived is not a στοιχείον but some other kind of ἀρχή, and which, because it essentially presupposes the genera and higher differentiae, needs no further cause to unite it to them.

The reason why Aristotle is drawing this ἀρχή/στοιχείον distinction in Z17, and arguing (using the Posterior Analytics account of the οὐσία as the cause of being and the infinite regress argument) that the οὐσία of a thing is an ἀρχή which is neither a στοιχείον nor composed of στοιχεῖα, is to resolve the aporia from the end of Z13, which argued that we cannot give any λόγος τῆς οὐσίας, because an οὐσία cannot be composed either out of non-οὐσία (since then non-οὐσία would be prior to οὐσία) or out of οὐσίαι present in it in actuality (since then it would be many οὐσίαι and not one οὐσία). That argument depended on the assumptions, taken for granted by the Theaetetus and by both sides of the dispute in B#6, that the λόγος of a thing consists in spelling it out into its constituent στοιχεῖα, that the οὐσία of the thing is all of these στοιχεῖα collectively (in a different way, each στοιχείον individually can be called the οὐσία of

the thing), and that these στοιχεῖα are prior to the thing, drawing no distinction between priority in λόγος and priority in οὐσία. The aporia was neutral to whether the στοιχεῖα were physical or dialectical στοιχεῖα, and Z15 does not resolve the aporia by saying that the definable οὐσία is a form, and if this were what Z17 were saying it would not resolve the aporia either. But given what Z17 has in fact done in challenging the assumptions about the relation of the οὐσία to the στοιχεῖα, we can go back to the aporia of Z13 and see if there is now a way out. An οὐσία X has no λόγος if it is simple, and so it is legitimate to ask what X is composed out of. If it is composed out of non-οὐσίαι, in the sense of being composed out of things in the other categories, then it is indeed impossible to explain how an οὐσία could arise out of them; however, if the objection is rather that a non-οὐσία would be prior to an οὐσία, we can answer by saying that the constituent στοιχεῖα which are mentioned in the λόγος of a thing must be prior to it in λόγος, but not necessarily in οὐσία. If the στοιχεῖα cannot be things in accidental categories, and cannot be actual οὐσίαι, the obvious alternative is to say that they are potential οὐσίαι, and indeed this is what Aristotle has said both about physical material constituents in Z16 and about genera in Z12. Now if the στοιχεῖα are each merely potential οὐσία, the totality of the στοιχεῖα would not be an actual οὐσία. But X is not simply the totality of its στοιχεῖα, but also something else, and this something else is the ἐνέργεια of the στοιχεῖα, as Z12 of the differentia as the ἐνέργεια of the genus, and as is also true of the soul as the ἐνέργεια of the parts of the animal. It should therefore be possible to give a λόγος of X without falling into the aporia of Z13, if we start by finding the appropriate ὑποκείμενον of X (whether this is a single genus or a single matter or a plurality of στοιχεῖα), where this ὑποκείμενον is potentially X, and then add the cause which makes this actually X. Because the ὑποκείμενον is only potentially οὐσία, it or its parts will not be prior to X in οὐσία but only in λόγος, and there will not be actual οὐσίαι present in X; because the actuality essentially presupposes the ὑποκείμενον, there will be no regress to a further cause to unite it with the ὑποκείμενον; and because this actuality can no more exist without the composite than the composite can exist without it, it will not properly be prior in οὐσία, but rather simultaneous. And indeed, Metaphysics H, starting from Z17, will develop all of these thoughts, and not simply as an answer to an aporia, but as a program for actually stating the λόγος τῆς οὐσίας of a given X.

This does not mean that B#6 has now been solved. We have seen how Aristotle resolves an objection that Z13 raises equally against both sides of B#6. We have also seen some advice about how to give either a dialectical or a physical definition. A good genus-differentia definition of X should start from the appropriate genus of X, a genus which must be potentially X, and therefore cannot be a separate unchangeable οὐσία, and must proceed to differentiae which are appropriate to that genus. A good physical definition should start from the appropriate matter of X, which cannot be an individual matter, and it must give not merely the material constituents, but also the form which is essentially inseparable from those material constituents, and which actualizes them. But the problem remains which was stated in B#6: there is good reason to think that to know X we must give its physical definition, and good reason to think that we must grasp its form through a genus-differentia definition; "but it is not possible to speak in both ways of the ἀρχαί. For there is one λόγος τῆς οὐσίας [of a given thing]; but the definition through genera and the one that says out of what constituents [the thing] is are different" (998b11-14). Here too H will take up the issue on the basis of the conclusions of Z.

Πε2: H: the path to the λόγος τῆς οὐσίας

I will not discuss H in nearly as much detail as Z, because it is not a crucial link in the overall argument of the Metaphysics. As I have noted, there is a sense in which it does not belong to metaphysics at all. H shows how to give a λόγος τῆς οὐσίας in a way that escapes the aporiai first raised in B#6 and then developed in Z, especially Z13. These aporiai were raised in order to block the physicists' and dialecticians' projects of reaching the ἀρχαί as the στοιχεῖα into which things are spelled out by their definitions, and in Aristotle's view the aporiai, as aporiai against those projects, are decisive and unsolvable. But because the aporiai also challenge the possibility of giving any λόγος τῆς οὐσίας, and thus the possibility of science, it is also important for Aristotle to solve the aporiai, in a way that makes clear that neither the στοιχεῖα, nor the cause additional to the στοιχεῖα, is an ἀρχή in the strict sense (prior to the thing in οὐσία and thus separable from the thing). This solution belongs to metaphysics in the weak sense that it belongs to the first philosopher to raise aporiai about the ἀρχαί, and, once he has raised these aporiai, it also belongs to him to solve them. Certainly something would be seriously missing from the Metaphysics if we did not have H, if Z simply ended with the aporiai, especially from Z13, at a loose end. Now indeed, as I have been stressing, Z17 gives the crucial starting-point for solving the aporiai. But only the starting-point: it does not explicitly address the aporiai, and, in particular, does not mention the actuality-potentiality distinction, even if, in the light of Z12 on the genus as matter, Z16 on the parts of animals and earth-water-air-fire as δυνάμεις, and Z13 on the parts of an οὐσία as only potentially present, it is obvious that the στοιχεῖα of X collectively are only potentially X, and that στοιχεῖα are only potentially οὐσία. Z17, in reflecting on the Posterior Analytics program of finding the οὐσία of X as the cause of the existence of X, and more precisely as the cause, to the *per se* ὑποκείμενον of X, of its being X, and in thus reaching the conception of an ἀρχή which is not a στοιχεῖον, reaches the end of an upward way; H gives the downward way from this starting-point back down to the λόγος τῆς οὐσίας.

In describing briefly how H does this, my main concern will be with the internal argument-structure of H, and with its relations to threads of argument left over from Z. In particular, I want to show that H has an argument-structure. This does not go without saying: it seems to be fairly widely believed that H is just a pile of scraps left over after Z. This is certainly a priori possible--something like this seems to be true notably of α, and H as a much shorter book after Z bears some resemblances to α coming after A--but I think it is not true of H.<sup>29</sup> On the other hand, it also seems to be fairly widely believed that H in some important way goes beyond Z. Certainly H applies the concepts of ἐνέργεια and δύναμις much more often than Z, and this fact needs to be explained one way or another; some writers have thought that by so doing H constructs a bridge from Z to Θ or even to Λ (needed perhaps because, while separate unchanging οὐσία are not the focal meaning of form, they might still be the focal meaning of ἐνέργεια), but I think this is true only in a weak and disappointing sense.<sup>30</sup> Beyond this, there has been the thought, going back at least to Thomas Aquinas, that Z is in some sense provisional or dialectical, and that only H gives a positive scientific exposition of οὐσία; this view is held nowadays by those followers of the criteria-and-candidates reading of Z who think that Z does not argue decisively for any one candidate, and in a different way by Burnyeat, who thinks that the argument-structure he discerns in Z, of repeated investigations beginning from different logical starting-

<sup>29</sup>cf. Burnyeat in his map of Z for the best account I have read of the shape and functions of H, but even though Burnyeat explicitly sets himself against the pile-of-scraps view, he is only able on his own terms to save some parts of H, while leaving others as piles of scraps (though sorted piles, i.e. a pile of scraps on matter here, a pile of scraps on form there). given a different reading of Z and of the overall agenda of ZH, I think we can do better

<sup>30</sup>some references, and note on the idea of two distinct potentiality-actuality models, the second replacing the first (Gill building on Kosman)

points and then drawing on physics, each supporting the conclusion that the οὐσία of a thing is its form, is given up in H and replaced by systematic positive exposition.<sup>31</sup> Given the interpretation of Z that I have offered, it should be possible to give an overall account of H which explains these different appearances. It is true that H resolves aporiai left over from Z, not the alleged aporia about whether matter or form or the composite is more properly οὐσία (Z makes perfectly clear that the form of a natural thing is its οὐσία, and Aristotle has no interest in ranking candidates for οὐσία), but aporiai about how to state a λόγος τῆς οὐσίας. It is also true that H gives a systematic positive account of οὐσία and that Z does not: not because Z aims at a metaphysical theory of οὐσία and is unable to get beyond the preliminary dialectical phase, but because Z is a successful demolition of the physicists' and dialecticians' attempts to reach the ἀρχαί as οὐσίαι of the manifest things, and because, in refuting the physicists' and dialecticians' strategies for giving a λόγος τῆς οὐσίας, Aristotle creates for himself a problem about whether we can give a λόγος τῆς οὐσίας at all. H's positive account of οὐσία--that is, of definition--is not a step beyond Z into positive metaphysics (which might be carried further by Θ or Λ), but a consolation prize after Z has shown that there is no way from being-as-οὐσία to a positive account of the ἀρχαί; and Θ abandons the investigation of the ἀρχαί as causes of οὐσία and tries a different approach instead, one that will lead to the positive conclusions of Λ. While H's mode of exposition is positive, it contains no really new ideas, just a working out of consequences from Z, especially from Z17; it is understandable that the result looks like a pile of outtakes from Z, but if we keep in mind the goal of resolving the aporiai about definition we can see what they are all in aid of. And even the "positive" H (like the "positive" Θ and Λ) contains much that is negative: Aristotle wants to show that his account of οὐσία can resolve the aporiai about definition, and that other accounts, especially Platonist accounts, cannot, and thus H winds up including what have been seen as gratuitous and digressive polemics against Platonist positions.

One way in which a contrast between an "aporetic" Z and a "positive" H is misleading is that it is really only Z3-16 which are aporetic: Z17 offers positive results (for the investigation of the οὐσία of sensible things, not for the attempt to get from the οὐσία of sensible things to prior eternal οὐσίαι, which has received its decisive negative conclusion at the end of Z16), and H picks up on Z17 continuously enough that we might well want to challenge the traditional book-division between Z and H, and put the break at the end of Z16 instead. (Even the Jaeger of 1912, who thought that almost every book of the Metaphysics was a quasi-independent λόγος or μέθοδος, treated ZH together as a single μέθοδος, and it would be very hard to deny that ZH form a unit within the larger Metaphysics. Both Furth and Burnyeat, in outlining ZH, treat Z17-H as a single unit within ZH.<sup>32</sup> The case is similar to that of MN, where Syrianus says that some manuscripts put the book-break in the middle of M9, at 1086a21, and where this division indeed makes as much sense as the transmitted one.)<sup>33</sup> However, there is certainly an objective

---

<sup>31</sup>It is, however, also sometimes thought that H, particularly in the "summary" of Z in H1, misstates, or states too crudely, the structure or conclusions of Z. This is most often used to show that H presupposes an earlier version of Z, and that Z7-9 or Z12 are later insertions; this idea is groundless, and I have dealt with it above {refs}. Sometimes the same premiss is used for wilder conclusions, e.g. that H is not in fact a sequel to Z, or that H1 is spurious--as e.g. the Londinenses suggest to avoid admitting that Z is about the "causes and ἀρχαί and στοιχεῖα of οὐσία". There is no point in discussing this kind of thing, but it is worth thinking about how H presents the results of Z, with what emphases and omissions, and why.

<sup>32</sup>although there is tension in Burnyeat between treating Z17-H together and saying that Z17 (like Z3-16) follows the two-level method and that H does not; see my review

<sup>33</sup>refs in Syrianus and in discussion of MN above

articulation in the text where the manuscripts mark the beginning of H: "so we must reason [συλλογίζεσθαι] from the things that have been said, and, after collecting the main point [συναγαγόντες τὸ κεφάλαιον],<sup>34</sup> add a conclusion [τέλος]. Now it has been said that we are investigating the causes and ἀρχαί and στοιχεῖα of οὐσίαι [rather than of something else] ..." (1042a3-6). So here we are in some way pausing to take stock of the results achieved in Z, and assessing their implications for the question of the causes and ἀρχαί and στοιχεῖα of οὐσίαι. When Aristotle says that we must now συλλογίζεσθαι, Bonitz and Ross suggest that this should be taken in the etymological sense of "reckoning up the sum" of the results of Z; this is attractive and I think at least partly right, but misleading if it suggests that all of the real work has already been done in Z. It is more accurate to say that Z has completed the upward way to the principles of this investigation, and that H then reasons downward from these principles, and in particular applies them to solving questions left over from Z; a good parallel is in M4, where Socrates "reasonably, was seeking the τί ἐστὶ: for he was seeking to συλλογίζεσθαι, and the starting-point [ἀρχή] of συλλογισμοί is the τί ἐστὶ" (1078b23-5). Here the point is not simply that Socrates was seeking to construct formally valid arguments, since these can have any kind of premisses, and do not require knowledge of essences; rather, he was seeking the demonstrative syllogisms that constitute scientific knowledge, and since these must begin from definitions that grasp the τί ἐστὶ, he was on the upward way seeking these definitions through induction and dialectical refutations. If the aorist συναγαγόντες τὸ κεφάλαιον is correct (and it appears to be), Aristotle would be distinguishing two stages: first, in the retrospective H1 1042a6-24 we summarize the results of Z, and then in the main body of H we add the "conclusion," showing how on the basis of these results to give the λόγος τῆς οὐσίας of a given X in a way that avoids the aporiai.<sup>35</sup> However, the summary does not seem to give us the results of Z which we will actually need in order to draw the conclusion. The summary (following Z2-3, see discussion in Πa) emphasizes the distinction between the "agreed-on οὐσίαι" (earth, water, air, fire, the heavenly bodies, plants and animals and their parts) and further contested οὐσίαι, which might be entirely independent from the sensible οὐσίαι (as mathematical are often supposed to be, and as Platonic forms might also be), but which might also be connected with the agreed-on οὐσίαι, if it can be argued that they are the οὐσίαι of the agreed-on οὐσίαι (in any of the four ways listed in the first sentence of Z3), and are therefore οὐσίαι in an even higher degree than

<sup>34</sup>note with both verbs the manuscript divergence present/aorist, d discuss. the interpretive issue is much more important with the second verb, where (according to Jaeger) we have συναγαγόντας J, συνάγοντας E (but with the  $\varsigma$  then erased), συναγαγόντα Ab; I don't know what M and C have. if there is no contamination, the archetype must have had συναγαγόντα or συναγαγόντας; and from this to συνάγοντα or συνάγοντας is a far easier corruption (by saut du meme au meme, as well as producing a more common form) than the reverse

<sup>35</sup>see Burnyeat for the idea of two stages, first a summary and then a conclusion. Burnyeat does not, however, seem to think of the main body of H as solving an aporia left over from Z, or as a "downward way" from the crucial distinction, needed for the solution and drawn in Z17 (although he does see it as starting from Z17, and as giving a systematic positive exposition in a way that Z does not), and he does not take it as syllogizing in any strong sense from results of Z. Burnyeat also says enough to dispose of the silly idea that H1 1042a6-24 is summarizing not Z but something else (except that he is willing for it to be summarizing a version of Z prior to the insertions of Z7-9 and Z12; there is no good reason to accept this, see discussions above). he makes the interesting suggestion that the text is summarizing not the results of Z but rather the main heads of discussion, and there is something to be said for this: it does mention some conclusions, but very selectively and schematically. however, it does not seem easy to get κεφάλαιον to mean this before the imperial period. see the quite interesting article in LSJ s.v. κεφάλαιος: the relevant sense seems to be II,2 (something like a ὑποτύπωσις--I think I've discussed that, probably in discussing Z3--except after rather than before the full discussion), with perhaps also a metaphorical use of the financial sense II,5 (the sense "head of discussion," cited from writers of the first century AD, is II,4; but there seems no explanation of why it would be singular in this sense)

the agreed-on οὐσίαι are (so 1042a6-16). Aristotle does record that the investigation of the essence led us to consider definitions, and thus the parts of the λόγος, and the question which parts of the thing are parts of its οὐσία or of its definition (1042a17-21--presumably the parts of the definition, if not themselves already agreed-on οὐσίαι, would be among the further οὐσίαι that we could argue to as οὐσίαι of the agreed-on οὐσίαι), but he does not recall the aporiai about definition, or any of the results, except that the universal and the genus are not οὐσία (1042a21-2). Most strikingly, he has no recapitulation of Z17, which has made the decisive contribution to solving the aporia of Z13, and which is the part of Z that H will in fact draw on most heavily. Burnyeat has proposed what must be the right explanation of this absence: H1 is directly continuous with Z17 and so has no need to summarize it; rather, H1 is looking back on earlier parts of the investigation of Z from the perspective of the new starting-point of Z17. H will not make inferences from the summary of Z2-16 in H1 1042a6-24, but rather will make inferences from Z17 on the topics of Z2-16 as presented in the summary, topics concerning "the causes and ἀρχαί and στοιχεῖα of οὐσίαι," with the exception of those topics which the summary reports as having already been settled (negatively) in Z, that is, the genus and the universal as ways to further οὐσίαι. The remaining topics, as H1 reports them, are the ὑποκείμενον, the essence, and the definition and its parts; and since it is clear from Z17 that the appropriate ὑποκείμενον of X will be included in the definition of X, this reduces to saying that we must investigate the definition and its parts as expressing the essence of the thing, in the light of the application of Posterior Analytics II in Z17 and of the resulting distinctions.

#### H1-2: ὑποκείμενον and differentia

H3 begins something new in the argument of H, and something clearly going beyond Z, and it is here that the controversies about the structure (or lack of structure) of H become acute,<sup>36</sup> but it is clear that the second half of H1 (1042a24-b8), and then H2, are deliberately designed as a pair of discussions, first of the "οὐσία as underlying [ὑποκειμένη] and as matter, and this is what is potentially [i.e. potentially οὐσία, or potentially each given οὐσία]" (thus summarized H2 1042b9-10), and then of "the οὐσία as ἐνέργεια of the sensibles" (b10-11; all summarized at the end of H2, 1043a26-8). To investigate either of these, as in Z, we begin with the form-matter compound οὐσία, and keep on analyzing τί ἐστὶ. The underlying matter is said to be "agreed on" (1042b9-10) and does not need an extended treatment, while there is more to be said about the form or ἐνέργεια. Aristotle's accounts here can seem disappointing, as if they are merely a survey (summarizing from Z, or adding a few bits that he forgot to include in Z) of the different things within the sensible domain that are called οὐσία, the composite and the matter and the form (each of which is with different qualifications, e.g. "actually" or "potentially," said to be οὐσία and τόδε τι or separate, H1 1042a26-31), giving a brief description of each. But in fact these paired discussions (with the heavy emphasis on the second, H2) are parts of an ongoing argument, developed throughout H, about how to give a λόγος τῆς οὐσίας of a given X. First you must find the ὑποκείμενον of X. The point Aristotle now wants to make about this ὑποκείμενον is not (as in Z3) that it is not without serious qualifications an οὐσία or an ἀρχή (although that is recalled 1042a27-8, "I call matter what, not being a this in actuality, is a this in potentiality"), but that different things have different appropriate ὑποκείμενα, as is revealed by physical analysis of what must underlie the change from not-X to X. (The claim "that matter too is οὐσία", 1042a32, is apparently meant to be justified by the argument that, like the more

<sup>36</sup>cite Burnyeat p.71 if not cited already



obvious kinds of change, generation and corruption too have a persisting ὑποκείμενον: this will be the appropriate ὑποκείμενον of X if X is an οὐσία, and it will be--in potentiality--an οὐσία rather than some other category.)<sup>37</sup>

We might now expect H2 (following the model of Z4-9) to turn from the ὑποκείμενον to the essence, but now Aristotle speaks instead of turning from the ὑποκείμενον to the differentia, and (also) from the potential to the actual οὐσία. And this is following out the program of definition begun in Z17. We are not turning from the ὑποκείμενον to the essence as if the ὑποκείμενον were extrinsic to the essence: rather, to determine the essence of X, we begin by determining the appropriate ὑποκείμενον of X, and then proceed to determine the cause, to this ὑποκείμενον, of its being X, which will be the differentia of X.<sup>38</sup> This differentia is the cause of there being an X (ἀρχαὶ τοῦ εἶναι, 1042b32-3), and since, as Aristotle now recalls from Z17, the οὐσία is the αἴτιον τοῦ εἶναι ἕκαστον (1043a2-3), the differentia can be called the (whole) οὐσία of X: not, however, as excluding the ὑποκείμενον of X, but rather because it presupposes this ὑποκείμενον, as snub presupposes nose or as the ἐνέργεια of some δύναμις presupposes that δύναμις. Aristotle will say (with reference back to the two types of definition from B#6) that "the λόγος by way of the differentiae is [the λόγος] of the form and the ἐνέργεια, while the λόγος out of the constituents [ἐνυπάρχοντα] is rather [the λόγος] of the matter" (1043a19-21), and if he had said "the λόγος by way of the genera and differentiae is [the λόγος] of the form" it might have been plausible to think that he meant this kind of λόγος to exclude rather than to presuppose the matter; but since he says "the λόγος by way of the differentiae," it is clear that he means that the differentiae presuppose and implicitly contain what they are *per se* predicated of, what they are differentiae of; and since H2 regularly speaks of the differentia (or equivalently the ἐνέργεια) as being the differentia (or the ἐνέργεια) of a ὑποκείμενον or a matter rather than of a genus, he means this λόγος to presuppose and implicitly include the appropriate underlying matter. (This kind of λόγος of X will not include the matter of X under every description--certainly not this individual matter, or any other matter which is not required by the differentiae of X, so if X is house, perhaps not bricks or stones but only housebuildable material in general.) It is contrastive with most of Z, both that Aristotle now speaks of searching for the differentia (and not simply for the essence), and that he speaks of it as signifying the ἐνέργεια (and not simply the form). The concepts of ἐνέργεια and δύναμις will be crucial in applying the program of Z17 to solve the aporia from Z13: if X is an οὐσία, the things in the λόγος of X cannot be mere qualities, but neither can they be actual οὐσίαι, or rather, no more than one of them can be actual οὐσίαι; all but one of them must be potential οὐσίαι, indeed must be (collectively if they are more than one) potentially a single οὐσία; these will be (collectively if they are more than one) the ὑποκείμενον of X, and the remaining thing in the λόγος of X, the differentia, will be what actualizes them, and actualizes them in the particular way that makes them X rather than something else. But this solution works only if both the ὑποκείμενον and the differentia are appropriately chosen, in such a way that the ὑποκείμενον is in potentiality to the differentia and

<sup>37</sup> note on the three texts that talk about ὅλη τοπική or some equivalent; think about whether this is a substance or an accident, etc.--it is just possible that H1 is arguing that the persisting subject of any of these kinds of change must be οὐσία, because it satisfies the ἴδιον from the Categories of being able, numerically single, to underlie contrary attributes; but that's not what the rhetoric in H1 suggests, which is all building up to "so too for generation and corruption"

<sup>38</sup> see the discussion of Z17 in the previous section, making the point about H2 (and H3 and H4) carrying out the program of Z17; and making the point (by quoting much of H2) that Aristotle is saying that this cause of being will in all cases be a differentia not requiring a further cause to unite it to its ὑποκείμενον/genus, but not that it will be in all cases itself a cause of unity to many στοιχεῖα.

the differentia presupposes the ὑποκείμενον, so that they do not require any third thing to unite them. Much of H will be about the rules and presuppositions for finding such appropriate ὑποκείμενα and differentiae. In particular H2, in turning from the ὑποκείμενον to the differentia, is concerned with finding a differentia of X that will be appropriate, appropriate to X and appropriate to the ὑποκείμενον that we are supposed to have already chosen for X.

Somewhat surprisingly, H2 starts by citing Democritus on the types of differentia (Democritus thinks that there is only a single ὑποκείμενον, universal unqualified body dispersed through the void, and that all the phenomenal differences arise from the appropriate differentiae of such body, shape and orientation and order, 1042b11-15).<sup>39</sup> Democritus is as usual being cited as a reproach to the Platonists: he was at least commendably serious in thinking through the problems, but of course his answer is too simplistic; if the only ὑποκείμενον were the one he posits, then he would be right about what its appropriate differentiae are, but in fact different things have different ὑποκείμενα and different appropriate differentiae ("so it is clear from these things that there is a different ἐνέργεια and λόγος for each different matter," 1043a12-13), and Aristotle enjoys going through the different examples and showing just how many kinds of differentiae things can be constituted by. As we saw in the previous section, "there are clearly many [kind of] differentiae: some things are said through the composition of the matter, as whatever are said through blending, like honey-water; other things are said through tying, like a bundle; others by gluing, like a book [i.e. a scroll]; others by nailing, like a box; others by several of these; others by position, like a threshold and a lintel [at the bottom and top of a doorway respectively], for these differ by being placed [κεῖσθαι] in a certain way; others by time, like dinner and breakfast; others by place, like the winds; others by affections of the sensibles like hardness and softness, denseness and rareness, dryness and wetness, and some by some of these and some by all of these, and, in general, some by excess and some by deficiency" (H2 1042b15-25, cited above). These differentiae are all reached by Z17's method--that is, the Posterior Analytics' method--of beginning with the appropriate ὑποκείμενον of X and then finding the cause that makes this X rather than something else. In each case this cause is the cause of X's existing, which will be the οὐσία of X; this cause might be a mode of composition, or it might be something else, depending on what is appropriate to the ὑποκείμενον. Here Aristotle infers that "'is,' too, is said in as many ways [as there are differentiae]: for a threshold is [or it is a threshold, or there is a threshold: οὐδὸς γὰρ ἔστιν or οὐδὸς γὰρ ἔστιν] because it is placed in this way, and being [τὸ εἶναι] signifies that it is placed in this way, and that ice is [or that it is ice, or that there is ice: τὸ κρύσταλλον εἶναι] [signifies] that [it] has been condensed" (1042b25-8).<sup>40</sup> As we saw in discussing this passage in Iγ1c, Aristotle is saying not that ice exists because ice has been solidified, but because water has been condensed ("if we have to define [a] threshold, we will say [that it is] wood or stone situated thus ... if ice, water that has been solidified or condensed in such a way," 1043a7-10, quoted in Iγ1c), as βα exists because β and α have been combined in a

<sup>39</sup>(i) cp. A4 985b10-19 on the importance of the differentiae as causes for Democritus; and cp. also Simplicius In de Caelo 641 and parallels on Democritus rejecting the ιδιωτικῶς aitiologies through hot and cold, the soul longing for an ἀρχὴ οικειοτέρα to body (cp DK A120 but that hasn't got the most interesting bit). (ii) see other discussions of Democritus and his ὑποκείμενον. I was slightly queasy about the text and was interested to see that Jaeger shares my queasiness. if he is right in his suggestion that τὴν ὕλην in 1042b13 is a marginal gloss, then I would suggest adding a comma, τὸ ... ὑποκείμενον, σῶμα {see other discussions}. but Jaeger is in general too quick to posit such incorporation of marginal glosses

<sup>40</sup>rejecting various editors' insertion of οὐδὲ in 1042b27 and emendation of κρύσταλλον to κρυστάλλῳ in b27-8; d discuss the textual issues, various editors' and commentators' views, the interpretive issues; I've discussed all this in Iγ1c above, d cross-reference and harmonize (in particular, harmonize translations)

particular way. These differentiae, different for different ὑποκείμενα, will be the causes of existence for the different kinds of οὐσία; Aristotle cautions that the examples he has given, boxes and thresholds and breakfast and so on, are not genuinely οὐσία (presumably because the differentiae that constitute them are merely accidental and not genuinely species-constituting), but they offer easy models of definition which we should try to follow analogically in the harder cases of genuine οὐσία (so 1043a4-7).<sup>41</sup>

The last paragraph of H2 (1043a14-28), as well as the first paragraph of H3 (1043a29-b4), which forms a kind of appendix to that paragraph, begin to apply these considerations about definition to the problem left over from B#6 (and made more acute by Z10-16), about the definition of a thing through its constituent parts and the definition through genera and differentiae: as B#6 had put it, "there is one λόγος τῆς οὐσίας [of a given thing]; but the definition through genera and the one that says out of what constituents [the thing] is are different" (998b12-14, quoted above). The main point of Aristotle's present comments is that the definition of X through its constituent parts is only defining the potentially X; the constituents, such as the bricks and stones or β and α, will be collectively the ὑποκείμενον of X, and their arrangement (and more generally their actualization as an X) will be the differentia of X. On Aristotle's first formulation here (as on his first formulation in Z10), he speaks as if there were a simple peaceful solution to B#6, with one kind of definition defining the matter of X, another defining the form of X, and a third (presumably the best or anyway the most complete) resulting from their combination and defining X as a matter-form composite. While the matter of X should never be called X (so Z10 1035a7-9), and so the definition of the matter of X should never be called a definition of X, it may be semantically unclear whether "X" means the form or the composite (e.g. whether the animal, or Socrates, is more properly the soul or the soul-body compound--with H3 1043a29-b4 cp. Z10 1036a16-25, Z11 1037a5-8), and so which definition is more properly a definition of X. But we can go ahead and give both definitions anyway; and, Aristotle says, for the present investigation it makes no difference whether "X" more properly signifies the form or the form-matter composite, since in either case "the essence belongs to the form and the actuality" (H3 1043b1-2). However, such a peaceful solution to the B#6 question about definition is too simple. There is no definition which is purely a definition of matter: there can be a definition of the matter of X, but only because the matter of X already has some form (e.g. bricks and β and α each have forms, although not the forms of house or βα). Nor can a definition be purely of a form, but only of some form-matter composite (so emphatically H3 1043b28-32, discussed below). However, for a given form-matter composite, there can be a definition of its matter (including some form), of its form (including some matter), or of both together: a definition of the form of X cannot abstract from all matter, but it can abstract from matter included in X which is not the appropriate matter of the form of X (e.g. if X is a bronze sphere, i.e. a sphere which happens to be bronze, a definition of sphere can abstract from bronze although not from three-dimensional extension). The remainder of H will be investigating how, and under what conditions, a definition of X can be given according to the method prescribed in Z17 and developed in H1-2, and what kind of matter it should include.

H3-5: loose notes on form and matter, or a contribution to finding the λόγος τῆς οὐσίας?

<sup>41</sup>cp. Z17 and H3 only natural things/φύσις as genuine οὐσία within sensible things. in no case is an argument given, and unclear what the criteria would be (and in Λ3, of course, Aristotle says the opposite) ... he doesn't care, and why he doesn't care, and what he does care about here, sc. a methodical procedure for definition

Recall that, against the widespread view that H is just a pile of notes left over from Z, Burnyeat tries to show that H does indeed mark a further stage of the argument, the promised "completion" of Z; and he tries to show the particular stages of the argument marked (beyond the "summary" of Z in H1) by the account of οὐσία as matter at the end of H1, by the account of οὐσία as form in H2, and by H6's account of the unity of definition and the unity of matter and form. It is only H3-5 that he feels compelled to admit are piles of notes, describing H3 and H4-5 as "like two separate folders, labelled 'form' and 'matter' respectively, where Aristotle can keep reminders, corollaries, and other bits and pieces he has not, or not yet, worked into the grand design" (Map p.71).<sup>42</sup> These folders might have been left for the end of ZH, but Aristotle puts them where they are so as to lead up to the "climax" H6; and the material in H3-5 belongs at least roughly where it is, because H6 refers back to it (to H3 on the analogy between definitions and numbers), and because H3-5 (like the rest of H) draw on Z17. Burnyeat is certainly right that H6 is the intended climax of the new investigation of οὐσία begun in Z17; and he is also right that it would be hard to defend the absolute necessity for everything in H3-5 to be there, and to be exactly where it is. Still, we can do a bit better at seeing how these chapters are supposed to contribute to the progress of the argument, if we do not try to make them answer the supposed questions of Z, whether matter or form or composite is most οὐσία (Frede-Patzig), or whether form or something else is the οὐσία of sensible things (Burnyeat). Rather, Z17-H6 are trying to show how and under what conditions it is possible to give a λόγος τῆς οὐσίας of X according to the method prescribed in Z17, in such a way that it will avoid (especially) the aporia raised at the end of Z13. We must first give the ὑποκείμενον, as described in the latter part of H1, and then give the differentia (or, if you like, the form), as described in H2. But it is a mistake to think of H3 as simply continuing H2's discussion of the form. H3 is about definitions, and the things that must be mentioned in the definition of X, and how these relate to the definable X; but it is too simple to say that what is definable is the essence and the essence is the form. Quite to the contrary, H3 says that only matter-form composites are definable, and that the definition must mention both the form and the matter (1043b28-32). But, apart from the first paragraph H3 1043a29-b4 (which, as I have said, is best taken as an appendix to H2 1043a14-28), H3 does not seem to start from the concepts of matter and form. Rather, basing itself on Z17, it seems to start from the concept of στοιχεῖον, although it then introduces the concepts of matter and form in formulating its conclusions.

H3 can be broken down as follows:

1043a29-b4 ambiguities between the form and the composite, following up H2 1043a14-28  
 1043b4-14 the οὐσία of a thing is neither a στοιχεῖον nor composed of στοιχεῖα  
 1043b14-23 this οὐσία is either eternal, or is and is-not without coming-to-be or passing-away  
 1043b23-32 aporiai against definition; only matter-form composites can be defined, not simples  
 1043b32-1044a11 definitions resemble numbers; the Platonists can't explain the unity of either  
 1044a11-14 we have examined how far οὐσίαι can come-to-be, and their reduction to numbers.

The whole chapter (from 1043b4 onward) is closely dependent on Z17, and reexamines in the light of Z17 issues raised earlier in Z, with polemical consequences against the Platonists. The main conclusions are that only complexes can be defined, that they cannot be defined without

<sup>42</sup>cp. Ross on H3, AM II,231 "This chapter is a collection of ill-connected remarks on various topics relating to essence and definition." actually, as we will see, it is more accurate to say "definition" with Ross than "form" with Burnyeat

mentioning something over and above their στοιχεῖα, and that this cannot be done if the whole and its constituents are Platonic forms. Everything that is said here leads up to the account of the conditions of the unity of a definition in H6. The emphasis falls heavily on 1043b23-1044a11, especially 1043b32-1044a11, but the earlier sections too are not simply repeating from Z, and what is new in them should be briefly mentioned.

The short initial paragraph 1043b4-14 recalls in very compressed form the reasoning of the second half of Z17 (1041b11-33), but then adds an important polemical corollary which will support the argument of 1043b32-1044a11.<sup>43</sup> The passage has some textual issues, one of which would very seriously affect the sense (but fortunately Ross has given what is clearly the right solution); it also creates confusion (due to compression and perhaps overhasty composition) by using the preposition ἐκ in different senses as though they were the same. But the main sequence of thoughts is as follows. The syllable is not ἐκ the στοιχεῖα and the composition, or the house ἐκ the bricks and the composition, as if the composition were itself among the components. Further, this point can be generalized from the case of composition to any other differentia by which a thing is constituted: Aristotle takes up the example of the threshold from H2, and says that the position by which the threshold is constituted is not ἐκ the threshold (presumably meaning not a part of the threshold, Δ24 1023a31-3); in a different sense it can be said that the threshold is ἐκ the position (presumably as animal is ἐκ biped, Δ24 1023a35-6--in this sense we should be able to say that the syllable is ἐκ the composition, but not that it is ἐκ the στοιχεῖα and the composition, as if it were related to the composition in the same way as to the στοιχεῖα). So far this is just making the point that the conclusion of Z17, that the οὐσία of X is neither a στοιχεῖον (of X) nor ἐκ στοιχείων, applies not only when the οὐσία of X is some mode of composition, but also when it is any of the other kinds of differentiae mentioned in H2 (and all reached by the method from the Posterior Analytics recommended in Z17).<sup>44</sup> But now Aristotle adds a polemical conclusion: "nor is man animal and biped, but there must be something beside these, if these are matter, something which is neither a στοιχεῖον nor ἐκ στοιχείου, but the οὐσία; but they leave this out, and state [only] the matter. So if this is the cause of being, and this [sc. the cause of being] is the οὐσία, they would not be stating the οὐσία itself" (1043b10-14, partly cited above).<sup>45</sup> We might rather have expected Aristotle to say that since biped is the

<sup>43</sup>cross-ref to some discussion in the previous section, d avoid duplication

<sup>44</sup>and this is a conclusion we had already drawn on in talking about Z17--even if it seems to have escaped most commentators. cross-reference with the previous section. I think I mentioned the H2 passage (where composition is only one of a series of differentiae that can be the οὐσία of a thing) but not the present passage; perhaps this should be mentioned there, or at least given a cross-reference

<sup>45</sup>reading with Ross οὐδε δὴ ὁ ἀνθρώπος ἐστὶ τὸ ζῷον καὶ δίπουν, ἀλλὰ τι δεῖ εἶναι ὁ παρὰ ταῦτά ἐστιν, εἰ ταῦθ' ὕλη, οὔτε δὲ στοιχεῖον οὔτ' ἐκ στοιχείου, ἀλλ' ἡ οὐσία· ὁ ἐξαιροῦντες τὴν ὕλην λέγουσιν. εἰ οὖν τοῦτ' αἴτιον τοῦ εἶναι, καὶ οὐσία τοῦτο, αὐτὴν ἂν τὴν οὐσίαν οὐ λέγοιεν. there are a number of minor differences among the manuscripts, which do not seriously affect the sense; the major difference is in the next-to-last word, οὐ, which was in E but has been erased (and added again in the margins?), and is missing in Ab (it is also missing in the text presupposed by the pseudo-Alexander; it is present in J and in the texts presupposed by Averroes and Thomas; d check the Aristoteles Latinus). Ross prints what is in a sense a very conservative text, agreeing with J throughout the passage (except that J has ὕλης for ὕλη in clear error), and with E everywhere except that it agrees with the original rather than the final state of E on the final οὐ λέγοιεν, and agrees with the final rather than the original state of E οὔτε δὲ στοιχεῖον rather than ὁ οὔτε δὲ στοιχείον; although it may be that Ross' punctuation is not what the scribes of E and J would have intended (but the scribes have no authority on such questions). this all seems simple enough, and it yields perfectly good sense, whereas I think there is ultimately no way to make sense of the reading with οὐ λέγοιεν. nonetheless, many modern editors have printed something quite different from what Ross prints. Bekker (who did not have J, nor did Brandis or Bonitz or Schwegler or Christ) prints exactly Ross' text (except for the comma after αἴτιον τοῦ εἶναι) but without the οὐ before λέγοιεν. however, it makes no sense to say that they

differentia and thus the οὐσία of man, it is not a στοιχεῖον of man (or that it is not ἐκ man, in the sense of being one or more constituents or composed of one or more constituents of man, but man is in a different way ἐκ it). Instead he says that since biped is a στοιχεῖον of man, it is not the οὐσία of man (either by itself or together with the other στοιχεῖον, animal), and that the οὐσία of man is some third thing, beside animal and biped and the cause of their unity, as the οὐσία of the syllable is some other thing beside the στοιχεῖα and the cause of their unity. Now it is obvious, notably from Z12, that Aristotle does not in fact believe this conclusion: the οὐσία of an animal species is its ultimate differentia, and this essentially entails the genera and does not need any further cause to unite it with them.<sup>46</sup> So when he says that the οὐσία of man is some

---

left out the οὐσία, stated the matter instead, and would thus be stating the οὐσία itself. so it is very likely that Bekker, with almost the same text as Ross until the final negative, interpreted "ὁ ἐξαιρούντες τὴν ὕλην λέγουσιν" as "which, leaving out the matter, they state"; this is how the text is explained by the pseudo-Alexander, Averroes, Thomas, and Bonitz, and is also implied in Jaeger's apparatus. this superficially makes sense, but since in context the "matter" is animal and biped, it is hard to imagine who would have left these out in stating the essence of man, and how. the last sentence "if this is the cause of being, and this is the οὐσία, they would be stating the οὐσία itself" also has the air of tautologous repetition, and given how tautologous and repetitive it seems, it is difficult to justify the final optative λέγοιεν. so Bonitz printed instead εἰ οὖν τοῦτ' αἴτιον τοῦ εἶναι καὶ οὐσίας, τοῦτο αὐτὴν ἂν τὴν οὐσίαν λέγοιεν, "so if this is the cause of being and of οὐσία, they would be saying that this is the οὐσία itself," keeping Bekker's text for the rest. Christ and Jaeger accept Bonitz' text except that Christ brackets [ἀλλ' ἢ οὐσία] and Jaeger brackets only [ἢ οὐσία] {Jaeger in justifying Bonitz' "οὐσίας, τοῦτο" says that otherwise there would be a pointless rhetorical repetition of "τοῦτο", and a pointless tautology, presumably "if this is οὐσία they would be saying the οὐσία itself" [on the reading λέγοιεν]; but this is solved by taking the second "τοῦτο" to be anaphoric for "αἴτιον τοῦ εἶναι" with Ross. beyond Jaeger's apparatus, see if there's anything in one of his three publications on emendations in the *Metaphysics*. Jaeger also makes the trivial change of adding <τὸ> before δίπουν}. but none of this helps on the fundamental problem of this whole family of readings: that while it makes sense to try to give the οὐσία of man abstracting from matter if that matter is flesh and bone or earth water air fire, or to say that the οὐσία of man is something else beside his elements if these are flesh etc. or bone etc., it makes no sense to give the οὐσία of man abstracting from animal and biped. it is surprising that Jaeger, publishing his edition 33 years after Ross', and knowing J with its reading οὐ λέγοιεν, would continue to interpret the text in Bonitz' sense. see note below for some difficulties in Ross' reading--but they are easily enough resolvable. {I do not at the moment have access to Brandis or Schwegler}. the translation printed with Thomas has non dicunt = οὐ λέγοιεν. Thomas' commentary is slightly peculiar in taking ζητοῦσιν in b5 to refer specifically to the Platonists (this may be in part because his Latin translation doesn't allow you to guess that it's a non-articular participle); although he thinks that Aristotle is endorsing their view as he reports it. but when he gets to b10-12 he paraphrases correctly, the matter in question is animal and biped (but governed by if, and Thomas seems to treat this as if it were simply a random example, like "if the matter of man is green cheese"). however, at b12-13 ὁ ἐξαιρούντες τὴν ὕλην λέγουσιν = quod auferentes materiam dicunt (preserving the ambiguity of the Greek), he blows it, writing "Platonici, qui auferunt materiam a definitionibus." this seems to lead up naturally to Bekker's or Bonitz' text of b13-14, but what Thomas has in front of him, unfortunately for him, is (the correct) οὐ λέγοιεν. what he does with this is quite peculiar: given that the Platonists leave the matter out of the definition and thus out of the essence, "non poterunt dicere quod hoc particulare sit illa substantia separata, scilicet quod homo sensibilis sit compositus ex materia et forma, homo autem sit forma tantum"--in other words he understands "οὐσία, τοῦτο" (not unlike Bonitz' "οὐσίας, τοῦτο") and takes the last clause to mean "they could not say that this [the sensible particular] is the substance itself [which is on their account without matter]" (but why would they want to?)

<sup>46</sup>and this may be why some editors and commentators, and some scribes before them, have refused to accept the reading οὐ λέγοιεν--surely neither Aristotle nor the Platonists believed that the οὐσία of man was something other than animal, biped, or the two together (curiously, the pseudo-Alexander takes Aristotle to endorse this conclusion, ignoring the "if" in his paraphrase--he says that the οὐσία of man is the effect of animal and biped together, which is maybe a dodgy sense of "παρά"). and so they have taken "ὕλη" here to mean earth, water, air and fire, or flesh and bones, in which case it would be credible that Aristotle would endorse, and/or attribute to someone else, the view that the οὐσία of man is without these. but the text simply cannot be read to mean this: the ὕλη is explicitly animal and biped. in any case, the solution is that the view is neither Aristotle's nor the Platonists', but something that he thinks follows from their premisses. cite here Ross' note in extenso (almost everything he says is right--except that,

third thing beside animal and biped, and that some philosophers who say that man is animal and biped are failing to give this superadded οὐσία, he must mean that this result would follow from these other philosophers' commitments (although of course contrary to their intention). Instead of saying "if the differentia of X is the οὐσία of X, it is not a στοιχεῖον of X," he says, contrapositively, "if the differentia of X is a στοιχεῖον of X, then it is not the οὐσία of X, either by itself or together with the other στοιχεῖον, the genus; for if it is, there will be a regress to a further οὐσία by the arguments of Z17." Clearly the point is polemical against the Platonists, setting up H3 1043b32-1044a11 and then H6, arguing that the Platonists are unable to give the οὐσία of anything, because they cannot account for its unity. We have seen something like this already in Z (in Z12 and Z14), but there it was part of a purely negative critique of a failed project of finding the ἀρχαί as total or partial οὐσίαι of the manifest things; here in H it is the negative side of the positive project of giving the λόγος τῆς οὐσίας, showing not only that Aristotle can solve the aporiai about definition but also that philosophers with different commitments cannot. But why exactly are the Platonists supposed to be committed to the conclusion that the differentia, alone or with the genus, cannot be the οὐσία of X? Is it simply because they use the metaphorical term στοιχεῖον for the genus and the differentia? Presumably the reason is, rather, that the Platonists are committed to the differentiae and genera being each τόδε τι (like a series of separated points or units, as Aristotle will say in H3 1043b32-1044a11), so that each of them could exist without the others, and so that another explanation, beyond the essence of the genera and differentiae themselves, will be needed for why they are combined; and then, by the argument of Z17 and H2, that explanation will be the real οὐσία of the composite. Undoubtedly Aristotle could strengthen his argument with further considerations, arguing that no further cause could succeed in uniting the genera and differentiae, because (on the Platonist assumption) these are already actual οὐσίαι, and no οὐσία can be out of οὐσίαι present in it in actuality; or because, if the genera and differentiae are of themselves only potentially united to each other, no further cause can actually unite them, because there are no unactualized potentialities and no efficient causes within the realm of essentially unmoved things. However, Aristotle does not need these considerations here, and he seems to deliberately refrain in H3<sup>47</sup> from introducing considerations about actuality and potentiality--the notion of actuality will be mentioned once, in the last section of H3 (1044a7-9), but as a positive hint in the middle of a critical passage, to be developed in Aristotle's positive solution in H6. Here the concentration is on the difficulties that the Platonists get into on their own terms.

At this point, after arguing that (on Platonist assumptions) the genera and differentiae cannot give the οὐσία (1043b4-14), it would be natural for Aristotle to proceed to discuss the aporiai of definition, as he does in 1043b23-32 and especially 1043b32-1044a11. Why does he first give a discussion of coming-to-be and passing away, 1043b14-23? These lines seem to interrupt what would otherwise be a reasonably clear flow of argument, and it is understandable that Ross and Jaeger (unlike earlier editors) put them in parentheses. But Aristotle refers back to their conclusions in the summary (1044a11-14), and he must have thought that they contributed something. Now at one level these lines are simply recalling a conclusion reached in Z8, that "this [sc. the οὐσία of a thing] must either be eternal or be corruptible without [process of]

---

curiously, he denies that the opponents are the Platonists). Thomas, who has the right text, seems unable to grasp that Aristotle could be accusing the Platonists of missing the essence through excessive materialism (he correctly takes the ὄλη as animal and biped but seems to treat this as merely a random example), and perhaps some more recent readers have had this problem too; but Aristotle routinely accuses the Platonists of excessive materialism, esp. when it comes to the genera, or genera and differentiae, as στοιχεῖα of a form

<sup>47</sup>I mean, beyond the introductory-transitional paragraph 1043a29-b4

passing away and have come-to-be without [process of] coming-to-be" (H3 1043b14-16; Aristotle makes the back-reference explicit, "it has been shown and made clear elsewhere [ἐν ἄλλοις] that no one makes or generates the form, but rather he makes this [to be] something, and the composite [τὸ ἐκ τούτων] is generated/comes-to-be," 1043b16-18--Aristotle had also referred back to the same conclusion of Z8 at Z15 1039b22-7).<sup>48</sup> But he must have thought he had reasons for recalling this conclusion here. One reason might be the analogy between definability and generability: as only composites can be defined, so only composites can come-to-be, and composites are resolved (into the parts of their λόγος, or into the ὑποκείμενον and predicate of coming-to-be) into simples which cannot themselves either be defined or come-to-be. But there is a more particular point coming from the case Aristotle has just been considering, where the οὐσία of a thing, like a syllable or a house, is the mode of composition [the σύνθεσις] of its many constituents. Such a composition clearly does not come-to-be in the same way that the composite comes-to-be (it has no constituents, no underlying matter which takes on a new form, and if it did there would be a regress), but equally clearly there is no need for it to be eternal: it is now, whereas previously it was not, because of a motion that takes place in something else, the constituent letters or bricks, when they come into contact in the right way. (The boundary of a body, or the join between two contiguous bodies, is paradigmatic for things that are and are-not without coming-to-be.) If the Platonists insist that the οὐσία of βα, even if it must be something other than the στοιχεῖα and a cause of unity to the στοιχεῖα, is still another eternal thing, then, since this eternal thing is not always united to the στοιχεῖα in such a way as to cause them to combine into the syllable, there will be a regress to yet a further cause of unity, which will be the real οὐσία of βα;<sup>49</sup> assuming that βα is itself corruptible, we must ultimately posit an οὐσία of βα which sometimes is and sometimes is not without process of coming-to-be. "Whether the οὐσίαι of corruptible things are separate [and therefore presumably eternal] is not yet clear, except that it is clear that in some cases they cannot be, those things which are not capable of existing beside the particulars [παρὰ τὰ τινα], like house or furniture [σκεῦος]. Perhaps [ἴσως] these are not even οὐσίαι, neither these nor any of the other things that are not constituted by nature: for one would posit that nature alone of what is in corruptible things is an οὐσία" (1043b18-23).<sup>50</sup> This is just repeating the warning from H2 (and Z17) that the examples whose differentiae we have given are not genuine example of οὐσία, but only analogical models for thinking about οὐσία, that among material things only natural things and their natures are genuine οὐσίαι; but the present context gives a clearer reason for Aristotle's repeated assertion that the form of the house cannot exist separately and thus eternally, and perhaps also for the assertion that it is not an οὐσία, if it consists merely in the mode of composition of the bricks and if this is too obviously merely relational and thus accidental. And such forms, which the Platonists (Aristotle thinks) will be forced to admit, give us a model for conceiving the non-

<sup>48</sup>accepting Bostock's ποιεῖ τι τόδε for ποιεῖται τόδε (Bonitz lucidly points out what is implausible about the transmitted text--perhaps cite him--and proposes ποιεῖ εἰς τόδε, but that seems less good; I'm not sure why neither Ross nor Jaeger are worried about the text). note less important issue about γίγνεται/γεννᾶται. note to discussions of the controversy about ἐν ἄλλοις. Jaeger was wrong to think that this phrase implies reference to a different "work" {d recheck *Entstehungsgeschichte*--does he mention this passage in that connection, and conclude that Z7-9 are a later insert? I hadn't been sure he thought that, although Ross does}. also: be sure the present passage is noted in discussions of Aristotle's varying terminology on whether forms of corruptible things are themselves φθαρτά.

<sup>49</sup>the Platonists might object that this will be merely an efficient cause, and need not be mentioned in the οὐσία of βα. answer: wait till H4!

<sup>50</sup>tentatively keeping the manuscripts' μόνην [or μόνον] ... τῶν ἐν τοῖς φθαρτοῖς οὐσίαν rather than Bonitz' τὴν ἐν τοῖς φθαρτοῖς οὐσίαν (following Bessarion's translation and the Aldine; followed by Christ, Ross, and Jaeger). also note the issue about οὐδέ τι.



eternity and thus non-separability of the forms of natural οὐσίαι as well.

Aristotle then returns to the question of definition, and more specifically of the conditions under which definition is or is not possible, in the face of prima facie objections to its possibility. "So the aporia which was raised by the Antistheneans and similarly uneducated people [ἀπαιδευτοί] has a certain relevance [or point: καιρός], that it is not possible to define the what-it-is (for a definition is a 'long story' [λόγος μακρός]), but that it is possible even to teach [ἐνδέχεται καὶ διδάξαι]<sup>51</sup> what it is like [ποῖον τί ἐστίν], e.g., silver, not what it is, but that it is like tin. So there is one kind of οὐσία which can have a definition and a λόγος, namely the composite, whether it is sensible or intelligible; but not<sup>52</sup> the [οὐσίαι] out of which as primary [constituents] this is, if indeed a definitory λόγος signifies something-[predicated]-of-something [τὶ κατὰ τινός], and the former must be as form, the latter as matter" (1043b23-32). Here what is attributed to the Antistheneans is that it is impossible to define anything at all (but only to say what things are like); Aristotle himself says in response that composite οὐσίαι can be defined and simple ones cannot, and of course he does not attribute this view to Antisthenes. (Antisthenes "thought that nothing could be said except by its οἰκεῖος λόγος, one [λόγος] applied to one thing," Δ29 1024b32-4, thus denying that any definition, or any true sentence, can be τὶ κατὰ τινός; the theory of definition given here is distinctively Aristotle's own from Z12.)<sup>53</sup> When Aristotle attributes ἀπαιδευσία to someone in this kind of context, he means that they have not learned or refuse to abide by the rules of philosophical discussion, that they present as objections to particular philosophical claims or arguments what in fact come from their general refusal to accept the ground-rules (e.g. if you propose the astronomical thesis that the earth moves around the sun, and they say that this is impossible because of Zeno's paradoxes of motion).<sup>54</sup> Nonetheless, they may still present aporiai which demand solutions, perhaps even revisionist solutions, although not as radically revisionist as these people claim. Unfortunately,

<sup>51</sup>I suspect that an infinitive ending in -αι, with the sense of "grasp" or possibly "say" (φάναι?) has dropped out before καὶ. we might also delete καὶ with Jaeger, but it is not obvious why a scribe would have inserted it. Ab has the infinitive ἐνδέχεσθαι (governed by the previous ἐστίν taken as potential??), which is certainly wrong. I do not see the need to supplement with a δέ clause as Jaeger does, and the supplement he offers seems particularly unlikely

<sup>52</sup>Ab οὐκέτι (adopted by Ross and Jaeger) seems better than EJ οὐκ ἔστι. the sense comes out pretty much the same

<sup>53</sup>this might seem not to need saying, but Ross in his commentary actually takes the whole passage to be stating Antisthenes' view (except that he thinks that Antisthenes thought of the simples through which complexes could be defined as sensible material constituents, and that Aristotle reinterpreted all this through his own theory of as intelligible matter). this comes from a long and deeply perverse 19<sup>th</sup>-century tradition of reconstructing Antisthenes, which (i) makes him the author of the theory described in Socrates' Dream in the Theaetetus (based in part on the supposed parallel with the present passage), and (ii) makes him, in Ross' words here, "an out-and-out sensationalist" and materialist (based on perhaps nothing except the silly apocryphal story on which he tells Plato "I see [a] horse but I don't see horseness," and I suppose the fact that in the Dream the στοιχεῖα [but only the στοιχεῖα] are said to be grasped by αἴσθησις alone). but Antisthenes' thesis was not that simples cannot be defined (which Plato and Aristotle believe too) but that nothing can be defined; and not that nothing non-tautological can be truly predicated of the simples, but that nothing non-tautological can be truly (or even non-nonsensically) predicated of anything at all. he denied the Forms, as did everyone except Plato and his students, and some of Plato's students did too; but there is no basis for attributing to him either a sense-based epistemology or a theory of simples and complexes. I have not yet seen Aldo Brancacci, Oikeios logos: la filosofia del linguaggio di Antistene, which I hope will cut through the old nonsense. {Bonitz seems undecided, if I'm reading him right here, between the correct reading and the one Ross will follow}

<sup>54</sup>for παιδεία and ἀπαιδευσία in the relevant sense see Metaphysics α and Γ, also the beginning of the De Partibus Animalium (other texts?)

Aristotle does not make explicit here what the Antistheneans' aporiai are.<sup>55</sup> But given the initial "so [ὥστε]," he must think they arise from what he has just said (that is, just before the digression on coming-to-be, 1043b14-23), that man is not animal and biped. The thought seems to be: if you define X as Y, where "Y" is a simple term, then, if the statement is true, you have merely substituted another term with the same meaning and so are stating a tautology, without making the object any clearer. If, however, you define X as YZ (say man as biped animal), you are in effect saying that X is Y and Z, and thus you are saying that the one thing is many things, which is absurd. It is almost always, and probably rightly, thought that Antisthenes is among the "late-learning old men" that Plato has in mind in Sophist 251b6-c6, who have learned "that it is impossible for the many to be one and for the one to be many," and who therefore "will not allow man to be called good, but rather the good good and man man." So Antisthenes' objection to definition is a version of one-many problem. Since Antisthenes presumably also objects to calling Socrates white (and musical), he is one of the people who think that the "easy one-many problem" is a serious aporia, and who, when Plato solves it by introducing the Forms and saying that one thing can participate in many Forms, responds by proposing "hard one-many problems" purporting to show on Platonic assumptions that a Form is itself both one and many. The aporia about definition would be one such "hard one-many problem."<sup>56</sup> As we have seen already in discussing Z12, Aristotle thinks that the aporia can be solved, but only under certain conditions, and that the Platonists, given their commitment that the genera and differentiae are separate eternal thises, are not in a position to solve it. When Aristotle says that an οὐσία is definable only if it is composite, and that its definition resolves it into indefinable simples, that sounds like the position of Socrates' Dream in the Theaetetus, which (as I have argued above)<sup>57</sup> Aristotle attributed to Plato himself, and interpreted in such a way that the στοιχεῖα are the genera. But Aristotle promptly diverges from Plato when he adds that the definable composite must be a form-matter composite, and that the definition must contain a term signifying the form and a term signifying the matter, the former predicated of the latter. He would surely not deny that the definable composite could be something like βα, where neither β nor α is more form or matter than the other and neither is predicated of the other, but in such a case "there must be something beside these, if these are matter, something which is neither a στοιχεῖον nor ἐκ στοιχείου, but the οὐσία" (H3 1043b11-12, cited above); that further thing, as we know from H2, will be the differentia of βα, and will be predicated of β and α collectively. And even in a genus-differentia definition, unless the differentia is related to the genus as form to matter, with the implications that the differentia is the οὐσία of the genus-differentia composite and that the genus is not a separate this, then there will be a regress to a further οὐσία that is said of both of them collectively.

Given this background, the concluding comparison of definitions (or definable essences) to numbers (1043b32-1044a11, with retrospect 1044a11-4) is entirely natural. This is not another of Ross' "ill-connected remarks on various topics relating to essence and definition," Burnyeat's "bits and pieces [which Aristotle] has not, or not yet, worked into the grand design," but the culmination of Aristotle's argument against the Platonists in H3, leading into his own positive solution in H6. Its aim is not, as Burnyeat proposes, to impose cautionary "limits on the analogy

---

<sup>55</sup>the phrase "μακρὸς λόγος"--clearly contemptuous, apparently standard for a slave's excuses for misbehavior or incompetence or negligence, see N 1091a7 and Ross' note thereon and references therein {have I discussed this somewhere else?}--does not really help on what the argument is supposed to be

<sup>56</sup>references to earlier discussions

<sup>57</sup>reference--where?

between substantial beings and numbers in the Platonist reduction of things to numbers" (p.70). Rather, as so often, Aristotle's strategy is to concede everything possible to the opponents and then to show that they cannot succeed on their own terms, that he can accomplish their goals better than they can. He offers them ingenious assistance in the "reduction to numbers" (1044b13), showing none of his usual scepticism about such undertakings, and, instead of criticizing the analogy, says that the case is the same with definitions and with numbers, and that the Platonists are in equal aporia with regard to each of them, which they can resolve only by radically revising their accounts of both. Indeed his point is familiar enough by now that there is no need to dwell on it. Metaphysics B had raised various problems about the unity of στοιχεῖα: there is a problem about how  $\alpha$  can be the same in  $\beta\alpha$  and in  $\gamma\alpha$  (or, if there are many  $\alpha$ 's, how they arise and are distinguished), but there is also at least implicitly a problem about how  $\alpha$  can be united to  $\beta$  in  $\beta\alpha$ , since it is the fact that  $\alpha$  is united to  $\beta$  in  $\beta\alpha$  and to  $\gamma$  in  $\gamma\alpha$  that makes it problematic for it to be the same  $\alpha$ ; and these problems arose both in the case of the genera and differentiae as στοιχεῖα of the species-form, and in the case of the units as στοιχεῖα of numbers. (The question about how the units within a number are united into a single whole is made explicit in the K parallel, raising difficulties for "those who say that the first principle is the one and that this is an οὐσία, and who generate number first out of the one and matter and say that it is an οὐσία": "how should we conceive that the dyad and each of the other composite numbers is one? About this neither do they say anything, nor is it easy to say anything," K2 1060b6-12).<sup>58</sup> Z had discussed both problems, mainly with application to the genera and differentiae as (on the Platonist view) στοιχεῖα in a dialectical λόγος, but the problem of the unity of the many στοιχεῖα in a single thing arises also for a physical λόγος, and Z13 phrases the problem quite generally, mentioning also the case of numbers: "it is impossible for an οὐσία to be out of οὐσίαι present in it in actuality: for things that are two in actuality are never one in actuality, but if they are [only] potentially two they will be one (as the double [line] is out of two halves, in potentiality; for actuality separates). Thus if the οὐσία is one thing, it will not be out of οὐσίαι that are present in it and [composed out of them], in the way that Democritus correctly describes: for he says that it is impossible for one thing to come-to-be out of two or two out of one: for he makes the indivisible magnitudes the οὐσίαι. So it is clear that it will be likewise with number, if number is a combination of units, as some people say: for either the dyad is not one thing, or no unit is present in it in actuality" (1039a3-14, cited in IIδ). While Z17 had said that the οὐσία of a thing composed of many στοιχεῖα is the cause of unity to the many στοιχεῖα, it said nothing about potentiality and actuality (it did not, for instance, say that the many στοιχεῖα could be present in the composite only in potentiality, or that they could be only potentially οὐσίαι), or about what kind of cause (formal? efficient?) this cause of unity would be. Now, in working out the consequences of Z17 for the aporiai against giving a λόγος τῆς οὐσίας, it is natural that Aristotle should return to what he had said against the Platonists in Z13, both about species as composed of genera and differentiae, and about numbers as composed of units. As we have seen, one-many problems, even those raised by rude Antistheneans, have a certain relevance, and are effective against attempts to define by simply enumerating many στοιχεῖα without a cause of unity; as we then saw, the only way to solve the problem is to define in the way Aristotle has been describing in H, through a differentia or form said of a ὑποκείμενον or matter, needing no further cause of unity because the differentia is said per se of, and implicitly contains, the ὑποκείμενον. But presumably Aristotle's point is not merely that the Platonists

<sup>58</sup>also A9 992a1-2, "why is the number, taken together, one thing?". cross-reference to discussion in IIIγ3 of Λ10 1075b34-7 (which echoes the "they say nothing"); there I also note texts in M, now discussed in Iγ2d above

forget to name the cause of unity to the many στοιχεῖα, but that they cannot. And this is the claim that he is making in the final section of the chapter (1043b32-1044a11), both in the case of definitions and in the parallel case of numbers. There are some obvious analogies between definitions and numbers (both are discrete quanta, i.e. divisible into indivisible units rather than ad infinitum;<sup>59</sup> neither admits more or less, or remains itself when anything is added or subtracted),<sup>60</sup> and "both a number must be something through which it is one,<sup>61</sup> which now they are not able to state, by what is it one, if indeed it is one<sup>62</sup> (for either it isn't, but is like a heap, or if it is, it should be said what makes it one out of many), and the definition [too] is one, and likewise they are not able to state this either.<sup>63</sup> And this is reasonable: for the case is the same, and the οὐσία is one in this way--not, as some people say, like a unit or a point, but each [οὐσία] being an actuality and a nature" (1044a2-9). The reason the Platonists cannot state such a cause of unity is that they cannot say that it is the actuality through which the many στοιχεῖα are actually one, and the reason they cannot say this is that they think that numbers and species-forms and their constituents belong to a separate intelligible domain where there are no potentialities and no causes of actualization; and so, for the reason given in Z13, here many things can never be combined into a unity, and the only genuine ones are indivisibles with no multiple constituents, "like a unit or a point," and not wholes of parts. (Aristotle will use this reasoning to conclude in N2 that eternal things can never be composed of στοιχεῖα.) This is the only time in H3 (beyond the first transitional paragraph) where Aristotle has mentioned actuality or potentiality, and it is important. The οὐσία of a thing is "an actuality and a nature," namely the differentia as the actuality of its ὑποκείμενον, or the cause of unity as the actuality of the many constituents; the paradigm is the "nature" of a corruptible thing, especially of a plant or animal, which is the cause of unity to the earth, water, air and fire and homoeomerous and anhomoeomerous parts that it contains. In saying that a definition or a number is not a heap, and asking for the cause why not, Aristotle is recalling both Z16 (of earth, air, etc., and the parts of animals, "none of them is one, rather they are like a heap, before they are concocted and some

<sup>59</sup>compare the funny inclusion in Categories c6 of λόγος as a species of quantity alongside number and magnitude: although there λόγος clearly means "speech," composed of long and short syllables

<sup>60</sup>compare the Plato texts on a number not persisting when a unit is added or subtracted, and Plato's question whether that also holds for other things (NB a text in the Cratylus, cited in my Phaedo paper)

<sup>61</sup>if we keep the manuscripts' καὶ τὸν ἀριθμὸν δεῖ εἶναι τι ᾧ εἶς. this sounds a bit peculiar, and Bonitz suggests reading τῷ ἀριθμῷ (his alternative suggestion, following ps-Alexander's paraphrase, doesn't sound like a good idea to me); and Christ adopts this suggestion. however, since Aristotle thinks that that through which the many στοιχεῖα are one is the οὐσία of the composite, the manuscript reading might be possible; so Ross. another issue: the sentence as it stands as asyndetic, unless we read the first καὶ as connective with the previous sentence, which is not what it looks like (there doesn't seem to be an especially close connection of thought). so maybe a connective particle should be supplied, as Jaeger thinks; but if so, his γάρ is certainly the wrong connective. (a curiosity in the apparatus: Bekker and Bonitz and Christ and Ross say that Ab has αἰτίῳ for τι ᾧ--"the number must be one through a cause," which could just possibly be right--the other manuscripts would have eliminated one of the AI's from EINAIITIQEIC by saut du même au même--but is more likely to be another instance of Ab's misplaced cleverness. but Jaeger omits this from his apparatus--why? better check Ab yourself). EJ are then missing the following clause

<sup>62</sup>Ab omits εἴπερ ἐστὶν εἶς, Jaeger deletes it as a varia lectio to εἴπερ ἐστὶ in the next line (the usual Jaeger story) {actually, that may not be the right description of what Ab does, the situation is a bit more complicated, d describe--does Ab have εἶς once or twice in a row?}

<sup>63</sup>why is τοῦτον masculine? (or can the neuter take this form, say before a vowel? the dictionary is not encouraging on this idea, although it can happen with αὐτό.) I suppose the sense must be what Christ's suggested supplement would spell out, "they cannot state this [sc. the definition], by what it is one", with lilies-of-the-field construction = "they cannot state by what this [sc. the definition] is one"

one thing comes to be out of them," 1040b8-10) and Z17 ("what is composed out of something [is composed] in such a way that the whole is one, if it is not like a heap but like a syllable," 1041b11-12).<sup>64</sup> Now, in developing the line of thought of Z16 and Z17 into an answer to the aporia of Z13, he is saying that this can be explained only if the constituents are of themselves potentially one, and the cause of unity is the actuality of that potentiality; and that this explanation is not available if the constituents are the sort of things, like Platonic Forms or Platonic units, in which there is no potentiality.

This last paragraph of H3 seems to lead immediately into H6, which begins "about the aporia which has been mentioned about definitions and numbers, what is the cause of their being one?" (1045a7-8), and which gives the conclusion of the whole investigation of the λόγος τῆς οὐσίας and its parts begun in Z10. This raises the question what H4-5 are there for; and there may be some truth in Burnyeat's judgment that H4-5 are simply a loose folder of "reminders, corollaries, and other bits and pieces" about matter, stuck in before H6 not because they are needed for the argument but only because they would spoil the climactic position of H6 if they were added after it. A shorter version of H without H4-5 (but not without H3) might be possible. But it is not hard to see what Aristotle thought at least H4 would contribute; and the chapter is not simply about matter, but about how matter, and other causes, should be cited in giving the λόγος τῆς οὐσίας of a thing. H4 starts by saying (in the first half of the chapter, 1044a15-32) that even if all generable things share a single first matter, nonetheless there is also an οἰκεία ὕλη of each thing (1044a15-20); and, as Aristotle goes on to say (in the second half of the chapter, 1044a32-b20), it is this proximate and proper matter which we must cite (1044b1-3). The immediate context of this last comment is that "when someone is investigating the cause, since causes are said in several ways, one must state all of the possible causes [i.e. those causes which apply to the given object]" (1044a32-4), and, furthermore, "must cite the nearest causes" (1044b1-2), the proximate matter and so on. But it is clear that the reason why we are investigating causes is that we are seeking to define, following the precepts of *Posterior Analytics* II and of Z17: thus in the case of lunar eclipse, the formal cause is "the λόγος; but this is unclear unless the λόγος is [given] with the cause; e.g. what is eclipse? privation of light, but if 'by the earth having come in between' is added, this is the λόγος with the cause" (1044b12-5). That is: to give the definition of X, it is not enough to "state the cause" of X's existence; we must state all the available causes. Thus in defining lunar eclipse, the moon as quasi-material cause (eclipse does not have a matter strictly speaking but the moon is the subject that undergoes it, 1044b8-11), and the deprivation of light as an incompletely specified formal cause, must be supplemented by the earth as an efficient or "moving" cause (1044b11-12; in this case there is no final cause, *ibid.*). And in each case we must specify the proximate and proper cause, rather than a more remote cause which the effect will share with other things. This is important for Aristotle's solution to the problem of the unity of the definition. To explain the unity of the definition on the ground that the ὑποκείμενον is the potentiality of the differentia and the differentia is the actuality of the ὑποκείμενον, it is not enough to have the correct view of the ontological status of the constituents in the λόγος (denying that they are separate eternal οὐσίαι and so on); we must also specify the ὑποκείμενον and differentia correctly, so that one is in fact the potentiality of the other. H2 spoke at some length about how to find the appropriate differentia, but H1 spoke only briefly about how to find the right ὑποκείμενον or matter, and there the concern was with the matter for changes in different categories, generable vs. merely local matter, and so on. H4 adds that, even for

---

<sup>64</sup>the only previous uses of ὁμός in the *Metaphysics*--and the only remaining ones will be a closely connected one in H6 and a parallel in M8

generable οὐσίαι, which all share the same ultimate matter, the definition must cite the proximate matter; and this will be crucial for the unity of the definition, since it is only the proximate matter of X which is in fact potentially X.<sup>65</sup> And H4 is also important for H6's conclusion that "the potentially [X] and the actually [X] are in a way one, so that there is no other cause [of their unity], unless something that moved [the potentially X] from potentiality into actuality" (1045b21-2).<sup>66</sup> Aristotle's point is not just that the ὑποκείμενον and the differentia of X, in an individual sensible instance of X, are united by some extrinsic cause, but that the ὑποκείμενον and the differentia are united in the definition of X by the moving cause which according to H4 must be mentioned in the scientific definition.<sup>67</sup> (H5 adds further considerations on stating the appropriate matter. If X is ἐκ Y in the sense of succeeding it in time, that is not sufficient for Y to be the matter of X.<sup>68</sup> If X and Y are forms which are and are not without coming-to-be, then they have no matter at all; even if X and Y come-to-be, they might be appropriately described as coming-to-be not out of each other, but out of some common matter, which might be per se in potentiality to one contrary and incidentally in potentiality to the other contrary, in that the per se potentiality can be frustrated. The most important application will be to a living animal, which is not potentially the dead animal, nor vice versa. H4 1044a34-5 suggests that the appropriate matter will be the καταμήνια, or more generally the blood of that kind of animal, which can be acted on, embryologically and also in subsequent nutrition and growth, to become the organs and a whole animal of that kind; a dead animal is the result if the process of actualization fails. Specifying the ὑποκείμενον of the animal correctly, as the body which potentially has life, the καταμήνια or the embryo developed out of them, not earth and water and air and fire and not a dead animal body, is crucial to the De Anima II,1 definition of soul, which is supposed to guide Aristotle's psychology and biology; in particular, the unity of soul and body, as a unity of the potential with its actuality, rests on describing the body correctly in the definition.)<sup>69</sup>

#### H6: solving the aporia of the unity of the parts in the λόγος

There remains H6, drawing the long-prepared and long-delayed conclusion, and picking up on the statement of the problem about the unity of definitions (or οὐσίαι) and numbers from H3 1043b32-1044a11. The argument of H6 is fundamentally straightforward, laying out the obvious explanation of unity that the Platonists (according to H3) were debarred from giving, although there are uncertainties of text and construal in some passages, and although one might doubt whether Aristotle's formulas fully succeed in solving for himself the problems that he has been so concerned to raise for others. Disputes have arisen about the relations between H6 and other parts of Aristotle's argument, and about the relations, in H6, between the unity of genus and differentia in the definition of a species and the unity of matter and form in a sensible individual;

<sup>65</sup>note H4 on the three domains of natural definables, generable οὐσίαι and non-generable οὐσίαι and accidents; also note the importance of locating the πρῶτον πάσχον e.g. in defining sleep (perhaps also worth noting that the appropriate matter of man is the καταμήνια, confirming an "embryological" reading of the definition of the soul in DA II,1 and more specifically Freeland's response to Ackrill [in Gotthelf and Lennox?], against the view that the appropriate matter of the animal is only conceptually distinguished from the animal. cite her? does she cite this passage?)

<sup>66</sup>I've probably cited this in translation elsewhere, d find and harmonize

<sup>67</sup>I think I've relied on this in presenting some of the regress arguments in H3

<sup>68</sup>note dependence on Δ24 on ἐκ.

<sup>69</sup>some references; perhaps citations in DA II,1; for discussion, my OSAP paper and Freeland?

but at least the latter issues are easy enough once H3 has been read correctly.

Aristotle says:

About the aporia which has been mentioned about definitions and numbers, what is the cause of their being one? For all things which have several parts, and the whole [πᾶν] is not like a heap but rather the whole [ὅλον] is something beside the parts, have some cause, since in bodies too contact is the cause of being one for some of them, and for others stickiness or some other affection of this kind. But the definition is one λόγος, not by conjunction like the Iliad, but by being of one thing. So what is it that makes man one, and why is he one and not many [things], e.g. both animal and biped, especially if there are, as some people say, an animal-itself and biped-itself? For why isn't man those things [sc. animal-itself and biped-itself], so that men will exist by participation, not in man, not in one thing, but in two, animal and biped, and in general man will not be one thing but several, animal and biped? So it is clear that for those who pursue defining and speaking [i.e. saying what a thing is] in the way that they are accustomed, it is not possible to give [an account] and to solve the aporia; but if, as we say, the one [e.g. animal] is matter and the other [e.g. biped] is form, and the one is in potentiality and the other in actuality, then what we are seeking would no longer appear to be an aporia. For this aporia is the same as if the definition of "cloak" were "round bronze": for this name would be a sign for the λόγος, so that what we are seeking would be: what is the cause of the round and the bronze being one. But there would no longer appear to be an aporia, because the one is matter and the other is form. So what is the cause of this, of what is potentially [X] being actually [X], beside the maker, in things which have coming-to-be? For there is no other cause of what is potentially a sphere being actually a sphere, rather this was the essence of each. Now some matter is intelligible and some is sensible, and in a λόγος always one [constituent] is matter and the other is actuality<sup>70</sup> (e.g. circle is plane figure ...).<sup>71</sup> But whatever things do not have matter either intelligible or sensible, each are immediately just some one [εὐθὺς ὅπερ ἓν τι],<sup>72</sup> as "this" and quantum and quale are immediately just being [ὡςπερ καὶ ὅπερ ὄν τι τὸ τόδε, τὸ ποιόν, τὸ ποσόν]<sup>73</sup> (and for this reason neither "being" nor "one" is present in definitions), and the essence is immediately some one, as it is some being, and for this reason there is no other cause of any of these things' being one or of its being some being, for each of them is immediately some being and some one, not as if they are in being or one as their genus, and not as if [being and one] were separate beside the individuals. On account of this aporia some people talk about participation, and raise the aporia what is the cause of participation, and what it is to participate; and other speak of communion [συνουσία],<sup>74</sup> as Lycophron says

<sup>70</sup>JAb ἐνέργεια, E ἐνεργεία

<sup>71</sup>Jaeger brackets the phrase in parentheses ... d discuss

<sup>72</sup>deleting εἶναι with Bonitz and Jaeger (d check others)

<sup>73</sup>not printing a comma after τι. if we print the comma, then "whatever things do not have matter either intelligible or sensible, "this" and quantum and quale, each are immediately just some one, as they are immediately just being." Michel Crubellier tells me that he too had independently decided to omit the comma

<sup>74</sup>deleting ψυχῆς in b10 with Bonitz and Jaeger (d check others)

that knowing is a communion of knowledge and the soul,<sup>75</sup> and others that living is a composition or conjunction of soul with body. But the case is the same with them all: for being-healthy too will be a communion or conjunction or composition of soul and health, and the-bronze-being-triangular will be a composition of bronze and triangle, and being-white will be a composition of surface and whiteness. The reason is that they are seeking a unifying λόγος and differentia of potentiality and actuality. But, as has been said, the ultimate [i.e. proximate] matter and the form are one and the same thing,<sup>76</sup> one of them potentially and the other actually, so that investigating what is the cause of one, i.e. of being one, is similar [ὥστε ὅμοιον τὸ ζητεῖν τοῦ ἑνὸς τί αἴτιον καὶ τοῦ εἶναι]; for each thing is some one, and what is potentially and what is actually [sc. a given thing] are in a way one, so that there is no other cause [sc. of their unity], unless something that moved [the thing] from potentiality into actuality. And whatever things do not have matter are all [sc. each of them] just one thing without qualification [ἀπλῶς ὅπερ ἓν τι, as opposed to being "in a way one"]. (1045a7-b23)<sup>77</sup>

There is nothing new here either in the statement of the problem, or in the argument (made more fully elsewhere) that it cannot be solved if the genus and differentia are separate eternal thises. The solution is said to be possible only if the genus is matter and the differentia is its form; this description of the relation between genus and differentia was given in Z12, but also, in the more immediate background, in H3 ("a definitory λόγος signifies something-[predicated]-of-something, and the former must be as form, the latter as matter," 1043b30-32, given there as the key to solving the Antistheneans' objections to the possibility of definition).<sup>78</sup> More generally, the program of Z17, made more explicit in H, dictates that in defining X, whether by a genus-differentia definition or by a "physical" definition like that of βα, we must first give the appropriate ὑποκείμενον of X, and then the cause which makes this ὑποκείμενον into X; in the case of a genus-differentia definition, that means that the genus is the appropriate ὑποκείμενον of the differentia, and H's elaboration of the Z17 program explicitly calls the ὑποκείμενον the "matter" if the definiendum is an οὐσία. So none of this is new. Aristotle has not previously said that the ὑποκείμενον/genus/matter is in potentiality and that the differentia/form is its actuality, and indeed he seems to have deliberately delayed saying it, but of course it is what we would expect, and H3 did say that the explanation of the unity of a definition depends on the οὐσία being "an actuality and a nature" (1044a9), presumably of a potentiality also stated in the definition.

There has been some confusion over Aristotle's saying that "this aporia is the same as if the definition of 'cloak' were 'round bronze'": many writers assume that Aristotle is somehow comparing the problem of the unity of genus and differentia in the definition of a species ("biped animal") with the problem of the unity of matter and form in a sensible individual ("round

<sup>75</sup>the manuscripts have ὥσπερ Λυκόφρων φησὶν εἶναι τὴν ἐπιστήμην τοῦ ἐπίστασθαι καὶ ψυχῆς. but in all the parallel examples it's the thing signified by an infinitive or infinitive phrase that's explained as a συνουσία--it makes sense to say that the soul is one thing, knowledge or science another, to know is for them to be conjoined; I can't see how to make any such sense out of the transmitted text. the easiest cure is to write ὥσπερ Λυκόφρων φησὶν εἶναι τῆς ἐπιστήμης τὸ ἐπίστασθαι καὶ ψυχῆς.

<sup>76</sup>note text trouble; Bonitz' emendation seems right but d survey alternatives

<sup>77</sup>I've probably translated parts of this elsewhere, d compare and harmonize

<sup>78</sup>note (probably given elsewhere) all the texts on genus as matter, e.g. in Δ and Iota



bronze").<sup>79</sup> But Aristotle says "as if the definition of 'cloak' were 'round bronze': for this name [sc. 'cloak'] would be a sign for the λόγος [sc. 'round bronze']," so this is, like "biped animal," an example of definition, and there is no more reason to assume that the round bronze is an individual than that the biped animal is; Aristotle is just making his usual move (as in Z8, H2, etc.) of substituting the easier case of an artifact, where matter and form can be more clearly distinguished, as an analogous model for understanding the harder and more interesting case of natural οὐσίαι.<sup>80</sup> Whether biped animal or round bronze, the definition follows the program of beginning from the appropriate ὑποκείμενον and proceeding to the differentia, and in either case "a definitory λόγος signifies something-[predicated]-of-something, and the former must be as form, the latter as matter" (H3 1043b30-32, cited just above). It is not precisely because the one is matter and the other is form that there is no aporia about the cause of their unity, but rather because the one is potentiality and the other is the corresponding actuality. Aristotle thinks that the essence of matter in general is potentiality, and that the matter of X has been correctly given only when it is evident that it is of its essence potentially X, but he knows that many other philosophers, notably Plato and other Academics, do not state the matter according to this rule, and so they will have a serious problem about how the matter is united to the form; indeed, in the case of the matter of separate intelligible οὐσίαι, such as numbers, the Academics will have an unsolvable problem, since the matter they assign (being essentially unchangeable) will have no potentiality. But once the matter has been stated correctly, "there is no other cause of what is potentially a sphere being actually a sphere, rather this was the essence of each"--the essences of the potential X and of the actual X are given in relation to each other, it belongs to the essence of each to be united to the other, there is no need for what Aristotle says other philosophers were vainly seeking, "a unifying λόγος and differentia of potentiality and actuality."<sup>81</sup> Of course, since the potential X is of its essence only potentially united to the actuality of X, we can still ask, not for some further "unifying λόγος and differentia," leading to the usual infinite regress (the composition that unites  $\alpha$  with  $\beta$ , the further composition that unites this composition with  $\alpha$  and  $\beta$ , and so on), but for the actualizing efficient cause; not simply the efficient cause of an individual instance, but also the efficient cause included in the λόγος according to the prescription of H4.

Aristotle has caused some further confusion in saying right after this, "now some matter is intelligible and some is sensible." In the example of round bronze that he has just given, it seems that the bronze is sensible matter, whereas the per se ὑποκείμενον of roundness, namely extension (three-dimensional extension if "round" means "spherical"), would be intelligible

<sup>79</sup>thus Gill "Metafísica H.6 afirma que a dificuldade em relação aos compostos de matéria e forma [i.e. the problem of the unity of individuals] é a mesma concernente às formas substanciais [i.e. the problem of the unity of definables] (1045a25)", as if 1045a25 were explicitly comparing these two things ("A Unidade das Substâncias em Metafísica H.6," in Substância e Predicação na Metafísica de Aristóteles, Cadernos de História e Filosofia da Ciência, Série 3, v.13, n.2, jul.-dez. 2003, p.191). the same assumption, equally without argument, in Verity Harte, "Aristotle Metaphysics H6: a dialectic with Platonism," Phronesis v.41 (1996), pp.276-304, esp. p.287. Gill and Harte disagree on which of these two problems Aristotle is reducing to the other for solution, and how

<sup>80</sup>recall examples from H2, and the disclaimer, none of these are οὐσίαι, but they are analogous

<sup>81</sup>this passage has been weirdly construed, by Gill and Harte in the articles above cited, and by David Charles, in "Matter and Form: Unity, Persistence, and Identity," in Unity, Identity and Explanation in Aristotle's Metaphysics, ed. Scaltas, Charles, and Gill, Oxford 1994, pp.87-90, as saying that both the potentially X (say, bronze) and the actually X (the round), share the same essence, namely the actuality of X. obviously what it is to be potentially X and what it is to be actually X are different, although each essentially refers to the other. the misreading seems to come from automatically glossing "essence" as "form" {try to trace where this nonsense comes from--apparently it's in the Londinenses?}

matter. When he says "circle is plane figure" he must be intending to illustrate intelligible matter, more precisely intelligible matter as stated in a definition; "plane figure" [σχήμα ἐπίπεδον] cannot be the full definition of "circle," and if it is something like "plane surface [just one word, ἐπίπεδον] equal from the middle" (*Rhetoric* III,1 1407b27-8),<sup>82</sup> then it is the genus/ὑποκείμενον "plane figure" or "plane surface" that would signify this intelligible matter, and the rest of the definition would signify the form.<sup>83</sup> It has been disputed whether "intelligible matter" here, and in Aristotle generally, means simply the matter of mathematical objects, i.e. geometrical extension (and perhaps analogues in other mathematical disciplines), or whether it is something that is stated in physical definitions as well. Aristotle speaks explicitly of "intelligible matter" in only two other places, both in Z10-11 ("some matter is sensible, some intelligible, sensible like bronze and wood and whatever matter is movable, intelligible what is present in sensibles not quâ sensibles, like the mathematical," Z10 1036a9-12; "some things have matter even though they are not sensibles. For everything which is not an essence and a form itself-by-itself, but a this, has some matter. So the universal circle will not [have matter], but to the particular [circles] these parts will belong, as has been said before: for some matter is sensible and some is intelligible," Z11 1036b35-1037a5),<sup>84</sup> and in these texts he is thinking at least in the first instance of the matter of mathematical things, and in the first instance of individual mathematical things. So it has been argued (most recently by Verity Harte) that in H6 too, when Aristotle speaks of intelligible matter, he is thinking only of geometrical extension (as witnessed by the case of the circle) and not of the genus as matter of the species-form. However, Aristotle has just said that "in a λόγος always one [constituent] is matter and the other is actuality," building on H3 1043b30-32 ("a definitory λόγος signifies something-[predicated]-of-something, and the former must be as form, the latter as matter") and rephrasing in terms of actuality and potentiality; so the genus is certainly some kind of matter, even if it is not explicitly called "intelligible" matter.<sup>85</sup>

<sup>82</sup>cf. *Posterior Analytics* II,7 92b22, and compare the Euclidean definition, "plane figure contained by one line [which is called the circumference] toward which all the straight lines which fall from a single point of those lying inside the figure [upon the circumference of the circle] are equal to each other" (*Elements* Idef15, putting in brackets the passages marked by Heiberg as interpolated glosses)

<sup>83</sup>there are no grounds for deleting οἷον ὁ κύκλος σχῆμα ἐπίπεδον with Jaeger; at most, a mention of the differentia might have fallen out, but more likely Aristotle just skipped it, left it for the reader to fill in, since he is supposed to be calling our attention to intelligible matter, which is what is signified by the part of the definition he does quote

<sup>84</sup>however, see the note in Iγ3 about the textual problems in these passages, serious in the case of the Z11 passage; d incorporate here your results there

<sup>85</sup>other texts on genus as matter, all of which have been discussed before (give references; probably all in discussing Z12) are Z12, Δ28 on γένος, and Iota 8. Harte claims that the unity of (the genus and the differentia in) the form and the unity of (the form and matter in) the composite are "neither equivalent, nor analogous" (p.294); she thinks that the unity of a form is simple and primitive, and that it is only the unity of the composite that has an explanation, being caused by the primitive unity of the form. I have no idea how she would deal with these texts, which describe the genus as matter, and which she seems never to mention. she does try (p.297) to deal with the text of H6 saying that "in a λόγος always one [constituent] is matter and the other is actuality"; she says "the term λόγος has a number of senses of which 'definition' is only one. Nothing in what I have said need preclude there being different kinds of definitions to which Aristotle refers on different occasions. In context, λόγος clearly refers to the kind of definition or quasi-definition of which 'round bronze' is an example. 'Round bronze' is taken, for the sake of the argument, to be a definition, at 45a26, and referred to as a λόγος at 45a27. 'Round bronze' is thus a definition of a composite, or a description of a composite treated as a definition for the sake of the argument .... It is true of this kind of λόγος that one part is matter, the other actuality. But this characterization of the definition of a composite need have no bearing on the interpretation of the definition of form with which Aristotle began." But Aristotle says always; and H3, responding to the Antistheneans, says "there is one kind of οὐσία which can have a definition and a λόγος, namely the composite, whether it is sensible or intelligible; but not the [οὐσία] out of which as primary [constituents] this is, if indeed a definitory λόγος signifies something-[predicated]-of-something, and the former must be as form, the

And since H3 in the same context says that "there is one kind of οὐσία which can have a definition and a λόγος, namely the composite, whether it is sensible or intelligible, but not the [οὐσία] out of which as primary [constituents] this is" (1043b28-30), where one of these constituents is "as form" and the other "as matter," it seems clear that the definable οὐσία is either a sensible or an intelligible composite οὐσία, and that the former will contain sensible matter and the latter intelligible matter: so the genus, as the part of the λόγος of which the differentia is predicated, must be either "sensible matter" or "intelligible matter." And surely the latter: when Δ24 says that some things are "out of" [ἐκ] others "as the form is out of the part, the way man is out of biped and the syllable is out of the στοιχεῖον: this is different from the way the statue is out of bronze, for the composite οὐσία is out of sensible matter, but the form is also out of the matter of the form" (1023a35-b2, cited in IIα3 and IIδ), the kind of matter which the part of the λόγος is, which is being contrasted with "sensible matter," must surely be intelligible matter. It remains true that in many of the occurrences where Aristotle uses "intelligible matter" or some similar way of speaking, he is thinking of a mathematical matter: the στοιχεῖα as matter of the syllable in Δ24 are not mathematical, but the angles of the cube in the closely connected passage of Δ25 are (these passages discussed in IIδ on Z10). In part this is because intelligible matter is the matter of intelligible objects, and (in the Academic context in which the question of the matter of intelligible objects arose) mathematically described things are the paradigmatic intelligible objects. More generally, we can say that the intelligible matter of X is the matter genuinely presupposed by the form of X, rather than the matter in which that form merely happens to be instantiated; and a paradigm case of this distinction is the round bronze, where the roundness genuinely presupposes geometrical extension, but merely happens to be instantiated in the bronze.<sup>86</sup> It is in any case true that the genus in a genus-differentia definition of a natural οὐσία will be analogous to bronze in the definition of "cloak"; and it seems that Aristotle intends to describe this analogy as an analogy between intelligible and sensible matter.

In part because of an ambiguity of punctuation, it is not entirely clear what Aristotle intends to illustrate by the example of the categories. But when he speaks of "whatever things do not have matter either intelligible or sensible," he means things that have no definitory λόγος; their unity is not explained by one thing being potentiality and another being actuality, but rather "each are immediately just some one." It is possible that he cites the categories, οὐσία and quantity and quality and so on, as examples of such unanalyzable unities. This is perhaps surprising: we might expect, rather, individual immaterial οὐσία such as the movers of the heavens. But Aristotle has not established their existence yet, and has no good examples of immaterial οὐσία to point to, and the categories would make a certain amount of sense as an example, since they are summa genera, with no higher genus to serve as their matter, and with no definitory λόγος. It would make sense to say that the categories are each immediately just one, as they are each immediately just being, and for this reason we define "man" or "white" by citing "οὐσία" or "quality" together with its differentiae, without also adding "being" or "one" to the λόγος as if these were further genera. This is possible. However, while it is an Aristotelian commonplace

---

latter as matter," 1043b28-32, a text which is intimately connected with H6, and whose existence Harte seems nowhere to acknowledge. also note that, despite the impression you might get from Harte's approving citation of Detel (his I,211-14), Detel does think that the genus is matter, although he thinks that the phrase "intelligible matter" refers only to mathematical extension as the genus of mathematical figures of a given dimension

<sup>86</sup>but another good case is the syllable, which presupposes the στοιχεῖα but merely happens to be instantiated in the wax. but, going back to the texts cited from Z10-11, and generally taken to imply a purely mathematical conception of intelligible matter, they would seem to fit this case too, even though the examples Aristotle gives are mathematical

that the categories are kinds of being, each of which is in its own way, without having being as a higher genus above them, it seems less natural to say that the categories are likewise kinds of unity; Aristotle does not seem to say this elsewhere, and he may well not be saying it here either. His point may be rather that, just as the categories are each immediately being, so too anything which has neither sensible nor intelligible matter is immediately one (and immediately being); and just as we do not need to add "being" to a definition beside the appropriate category, so too we do not need to add "one" (or "being") to any unanalyzable simple. Nor, presumably, do we add "one" to a definable complex: this would be seeking a "unifying λόγος and differentia," leading to regress. Rather, the unity emerges from the simples into which the complex is analyzed, if they are related to each other as potentiality to actuality.

For those who can define by giving what is potentially X as the ὑποκείμενον of X, and the corresponding actuality as its differentia, then, as Aristotle has said, "what we are seeking would no longer appear to be an aporia." For those who cannot define in this way, there is an aporia, and, Aristotle says, "on account of this aporia some people talk about participation, and raise the aporia what is the cause of participation, and what it is to participate." The talk of participation suggests especially the Platonists, and looking back in Λ10 to describe the aporiai that he has solved and that the others, especially the Platonists, cannot, Aristotle will say that "for those who [posit] the Forms [there must be] another even higher ἀρχή: for why did [something] come to participate, or why does it participate?" (1075b18-20), and again "why the numbers are [each, as a whole] one, or soul and body, or generally the form and the object, no one says anything--nor is it possible to say, except as we say, that the mover makes" (b34-7).<sup>87</sup> However, here in H6 Aristotle assimilates the Platonists to others such as Lycophron (who, as we know from Physics I,2, tried to avoid one-many problems by saying not that the man is white but that the man white; or, as here, that there is communion between man and whiteness); the Platonists would not appreciate the comparison, but they are stuck in the same situation. The reason that solutions like Lycophron's are absurd is that, by parity of reasoning, "being-white will be a composition of surface and whiteness," even though surface is the per se ὑποκείμενον of whiteness; likewise β and α are the per se ὑποκείμενον of the differentia of βα, namely the particular mode of composition of β and α with the β before the α, and there will be a further composition between β and α and the composition of β and α, and so ad infinitum. To stop the regress, we must analyze the definiendum into a form and the per se ὑποκείμενον of that form, in such a way that the ὑποκείμενον is in potentiality what the form is in actuality;<sup>88</sup> in some cases the form will be itself a composition, with no further composition to unite the composition with the components, and in other cases the form will not be a composition, but some other sort of differentia that is immediately united with the ὑποκείμενον. "The case is the same with them all," and "investigating what is the cause of one, i.e. of being one, is similar," solved not by positing a unifying λόγος or differentia, or a form of unity, but reducing in every case to seeking the efficient cause which actualizes the potentiality, if there is a potentiality to be actualized.<sup>89</sup>

H6 is an important stage in the development of Aristotle's argument, in relation to what has preceded it in ZH, and, at least in a motivating role, in relation to what will follow in Θ and Λ.

<sup>87</sup>see discussion of these passages in IIIγ3; I also cited the second of them briefly above. but note that at least in the first passage, Aristotle's concern is not with giving a λόγος τῆς οὐσίας or solving a one-many problem, but with explaining coming-to-be and especially the perpetuity of the cycle of coming-to-be, problems which he is not concerned with in ZH, but rather in On Generation and Corruption, Physics VIII, and Metaphysics Θ and Λ.

<sup>88</sup>Aristotle is not, of course, saying that the matter is the form, but that the matter is potentially X and the form is actually X (more properly, that the form is the actuality of X, and that the composite is actually X)

<sup>89</sup>note against taking "ὁμοιον" as connecting "cause of one" with "cause of being one"

Much confusion has come from reading H6 simply as the solution to an isolated aporia about the unity of definition, raised parenthetically in Z11 (1037a18-20) and then apparently given overlapping but not identical answers in Z12 and H6 (leading to speculation about the relation between these chapters, and whether Z12, or even, as Jaeger thought, both chapters, are extraneous additions to the text). As we have seen, H6 completes the solution that Aristotle has been developing, since Z17, of an aporia set out in Z13 against the possibility of giving any λόγος τῆς οὐσίας. That aporia had at least implicitly hung over the whole investigation of the parts of the λόγος of a thing, begun in Z10, and Aristotle had developed it in Z12, in a limited way, for a limited local purpose of argument, namely to deal with the Platonist horn of B#6 (the genera as ἀρχαί) by showing that the Platonist answer to B#7 (the higher genera are prior to the species) is untenable, that the genus exists not separately but only as matter, that the differentiae are prior in οὐσία to the genera, and that the οὐσία of a thing defined by a genus-differentia definition is its ultimate differentia (although this is not properly speaking an ἀρχή of the thing, being simultaneous rather than prior to it). This is sufficient for disposing of a particular Platonist program for finding the ἀρχαί as partial οὐσίαι of things, but the problem of the unity of definition is also something that Aristotle needs to solve for himself, if he is not going to have refuted the possibility of science in the course of refuting the Platonists; and it is a problem that arises for "physical" definitions through parts, as well as for the "dialectical" definitions through genera and differentia discussed in Z12. (The last sentence of Z12, 1038a34-5, had both said that the chapter's treatment of "definitions by divisions" was only a first stab, and referred by implication to other kinds of definition, see Πδ above.) The solution in the case of "physical" definitions will presumably say that the parts mentioned in the definition of X are collectively the ὑποκείμενον of X, and are in potentiality to the differentia of X, which will be the mode of composition of the parts. Incorrectly given physical definitions, which just list the parts without describing the mode of composition, or which do not treat the parts as δυνάμεις, cannot solve the problem, as neither can incorrectly given dialectical definitions, which do not treat the genera as δυνάμεις or do not divide them by their appropriate differentiae, but correctly given physical definitions, like correctly given dialectical definitions, can solve the problem. However, in solving B#6 for himself, Aristotle must also answer the challenge that "it is not possible to speak in both ways of the ἀρχαί. For there is one λόγος τῆς οὐσίας [of a given thing]; but the definition through genera and the one that says out of what constituents [the thing] is are different" (B#6 998b11-14, cited above). If there is to be any scientific knowledge of X, it seems that it must have a definition mentioning its genus; if X has essential parts, it seems that its full scientific definition must mention these parts. But these definitions can coincide, if the genus of the syllable βα is its per se ὑποκείμενον, namely β and α, and its differentia is its mode of composition, namely with-the-β-before-the-α.<sup>90</sup> And when Aristotle says that the genus is the matter, and that every definition states some form of some matter, then this is a reasonable way of filling in his meaning for a definiendum like the syllable βα.

#### H6 and the complexities of biological definition

However, we might doubt whether this kind of solution will work for the really interesting definienda, such as animal species. Indeed, we may doubt whether it makes sense to say that the genus is the matter in such cases: the appropriate matter of man seems to be, not animal, but rather something like flesh and bones, or the "natural body potentially having life" or

---

<sup>90</sup>this cited above

"organic natural body" (the embryo?), or specifically human versions of these parts or this organic body. However, in these cases too it is clear that Aristotle does not intend to omit either the definition by divisions or the physical definition through the parts, and neither will he allow these to be two different definitions of the same thing. Rather, the divisions used to define a given animal species must somehow mention its essential parts, that is, its organs: "the genera [of animals] have been defined by the shapes of the parts and [thus] of the whole body" (PA I,4 644b7-8). However, if according to the program of the De Partibus Animalium an animal species is defined through its particular configuration of organic parts, we might object that this is the reverse of what H6 requires, since the essential material constituents seem now to be the differentiae, rather than the genera, of the animal species. We might also wonder whether the Z12-H6 attempt to identify the definable οὐσία with the ultimate differentia, and to solve the problem of its unity in this way, can survive the rules for defining animals in De Partibus Animalium I, which prescribe multiple differentiae at each stage (so PA I,3).

It is certainly true that the kinds of definitions required by real-world science, as described in De Partibus Animalium I, are more complicated than we might have expected from ZH. Nonetheless, Aristotle approaches the study of animal species with the same methodological principles sketched (in however simplified a form) in ZH, and the solution to the problem of the unity of definition sketched in ZH does not seem seriously threatened by his biological practice. To start with, on the question whether the De Partibus Animalium reverses the roles of genus and differentia that we would expect from ZH, it is not quite right to say that organic parts of an animal, such as feet and wings, are its differentiae. The left foot and the right foot are not differentiae of man; rather, the differentia "biped" arises from the two feet together, and from the absence of any further feet. The feet are parts of the λόγος of man, but they are neither genera nor differentiae; rather, they are parts of a λόγος which, when fully explicated, is more complicated than a simple series of genera and differentiae. However, such complication is not unique to biological definitions. The three sides of a triangle are also parts of the λόγος of triangle, mentioned in the definition "plane figure bounded by three straight lines,"<sup>91</sup> but none of the three sides is a genus or differentia of triangle; rather, the differentia of triangle results from the three sides together, and from the absence of any further sides. Aristotle identifies the genus of plane figures with their matter, and he seems to think that the distinctive boundary of each type of figure (three straight lines, three equal straight lines, etc.) is its form, or what it has analogous to a form.<sup>92</sup> Presumably he will try a similar approach with animal species. The parts of a plane figure from which its differentiae are taken are not material but formal parts; a foot undeniably involves some matter, but it is not simply a material part, and the differentiae of animals are taken from the forms of the organic parts (e.g. "cloven-hooved"), not from their matter.

However, as noted above, it does not seem that animal is the matter of its species, as two-dimensional extension is the matter of the different types of plane figure. On the other hand, it is also not quite correct to say that two-dimensional extension is the genus of plane figures: while Aristotle does sometimes give "plane" [ἐπίπεδον] as the genus, this must be taken in the sense of "plane figure" [σχήμα ἐπίπεδον, a formula Aristotle also uses for the genus], and not simply for the matter, two-dimensional extension. "Plane figure" is a count-noun. Thus the genus, plane figure, is not simply the matter, but the matter together with an indeterminately described form,

<sup>91</sup>roughly Euclid Idef19, formulation slightly complicated in context; standardize with other times I've used this example? (does Aristotle give his own official definition, e.g. in the PostAn?)

<sup>92</sup>refs, Δ28, Δ8, etc.

and the differentiae are successive determinations of this form: every plane figure is bounded by some sort of line, but a rectilinear plane figure is bounded by straight lines, a triangle by three straight lines, an equilateral triangle by three equal straight lines.<sup>93</sup> Presumably something similar will hold of animals. The generic matter of animal is something like organic natural body, but the genus, animal, is not simply organic natural body, but organic natural body together with an indeterminately described form ("animal" is a count noun, and each animal has a soul), and the differentiae are successive determinations of this form, or at any rate successive formal determinations of the organic parts.

We might try to give a genus-differentia definition of βα, following the prescriptions of ZH, by starting with its *per se* ὑποκείμενον, β and α, and then adding as differentia the cause on account of which β and α are βα; "β and α" would thus be a genus, of which one species might be βα, another αβ, and another a mere heap rather than a syllable. Clearly it will not work to say that the genus of man is two feet and two hands and so on, of which one species would be these parts arranged in the human order, another species would be these same parts arranged in some other order, and another species would be these parts in a heap: this is impossible, since feet in a heap, serving no function in an animal and unconnected to a source of blood that would keep them alive, are not feet. We must start not simply from a heap of organic parts, but from a heap of organic parts with at least an indeterminately described form to unite them, and then add further determinations of the arrangement of the parts, the number of each type, their shape and mode of functioning, and so on.<sup>94</sup> The differentia would at each stage be the cause of the interconnected organs being arranged in this way; to be adequate to defining a living thing, it should include a final cause, explaining the function that the organs arranged this way serve. Animals are differentiated by their different ways of carrying out the indeterminately described function of animals in general, namely the preservation of the individual and the species; different strategies for making use of material necessities for accomplishing this function, and in particular different arrangements of organs, constitute different animal species and thus also different determinations of the indeterminate common function (preservation of this sort of thing carrying out these activities). We need to divide animals by many differentiae at once, since we cannot fully determine the species just by dividing successively according to the organs of locomotion (footed, quadruped, etc.): we need to determine the whole system of organs. But Aristotle is just as insistent in *De Partibus Animalium* I as in ZH that we must divide by differentiae of the differentiae (PA I,3 643b17-19; this is why we must divide simultaneously by differentiae arising from different organs, rather than dividing first by egg-laying or live-bearing, then by flying or walking and so on), so that the ultimate differentiae will implicitly include the higher differentiae and genera. Or, instead of speaking of many simultaneous ultimate differentiae, we can think of it as a single ultimate differentia, but one determining the whole system of organs at once (even "biped" refers to more than one organ, the two feet). It signifies a single οὐσία and not many, because the many organs are δυνάμεις which can only be exercised together: Aristotle is willing to describe the whole animal body as a single organ for a single grand function (PA I,1 642a9-13), and the soul is a single ἐντελέχεια of the whole thing, constituting a single animal.<sup>95</sup> Thus *De Partibus Animalium* I is developing, under the

<sup>93</sup>ref to Euclid Idef19-21

<sup>94</sup>we could do it this way for βα too, taking the genus to be syllable, and then differentiating by number of phonemes, arrangements of vowels and consonants, features of the first and second phonemes, etc. ... this might be right; Aristotle never explicitly says what the genus of βα is

<sup>95</sup>on all this see my OSAP *De Anima* paper

complicated conditions of real-world science, a program of definition broadly along the lines of what we have seen in ZH, and it should not threaten the ZH account of the unity of the definition: the definition will be a λόγος not of many things, whether the many parts of an animal, or the successive genera and differentiae, or the many simultaneous differentiae, but of a single actuality of many potentialities.

#### From H6 to Θ and Λ

It is of course often noted that H says much more about actuality than Z, and it is often said that this in some way prepare the way for Θ and perhaps for Λ. We have seen why it is important for H, in answering the aporia of Z13 and showing how to give a λόγος τῆς οὐσίας, to talk about actuality and potentiality. "Whatever things do not have matter are all [sc. each of them] just one thing without qualification" (the last line of H6, 1045b23), and are pure ἐνέργεια; this description will be taken up in the account of separate immaterial οὐσίαι in Λ, and in the account of "incomposites" in Θ10. Things that have some matter, including all definable things, will be compounds of a δύναμις and its ἐνέργεια, and, once these have been correctly formulated, the only further cause of unity is the actualizing efficient cause, which will be mentioned in the scientific definition of the thing. Aristotle does not think that there is any remaining problem about the unity of definition, or about the unity of an οὐσία, and he does not take up these problems in Θ or Λ; H6 marks the end of a self-contained inquiry into οὐσία, and Θ, taking up the discussion of δύναμις and ἐντελέχεια or ἐνέργεια, refers back to the discussion of οὐσία as something already completed (Θ1 1045b27-1046a4, Θ8 1049b27-9, see discussion in IIIα1 below). Still, the juxtaposition of the end of H, solving problems by δύναμις and ἐνέργεια and saying that there is no further cause of unity except the mover, with the beginning of Θ, is not a coincidence; H serves at least to motivate Θ. Θ takes up from Δ7 the senses of being as being δυνάμει and ἐντελεχεία, and investigates these senses of being with a view to their causes, namely δυνάμεις (or potential causes, the bearers of δυνάμεις) and ἐνέργεια (or actual causes, the bearers of ἐνέργεια). If we want to find causes of being to a thing that are prior to the thing, then this is where we will have to look for them; and specifically, Aristotle will argue, in the cause of ἐνέργεια to what is δυνάμει, the actual moving cause. For an eclipse, this cause will be the motions of moon and sun, and we can ask further what makes these motions eternally actual, until we reach a simple ἐνέργεια of the kind described in H6. Or, beginning with sublunar plant and animal species, we can investigate until we find the causes of the cycle of generation, the eternally moving heavenly bodies, and then the causes of their eternal motion. This is the only causal route to something separately existing and eternal and unmoved, and it is a different route than the investigation of causes of οὐσία, the total or partial οὐσία of a thing, described in ZH. If you want to say that these eternally unmoved things are causes of οὐσία of natural things, contained in their λόγος τῆς οὐσίας, the only way to maintain this is to say that as a scientific definition must mention the moving cause, a fully elaborated scientific definition would have to trace the definiendum back to the first moving cause of all things, which would appear implicitly in the definitions of everything else. Aristotle never says this, and I see no need to say it on his behalf; but if you want the pursuit of the οὐσία of a thing to lead to the ἀρχαί which are the objects of first philosophy, this is the only way it can work.