On Aristotle’s Proto-Type Theory

Winter/Spring 2016, Seattle/Bellevue

I mean to argue in this paper that Russell’s Theory of Types was to a significant extent anticipated 2000 years earlier by Aristotle. Now Russell’s theory was, of course, formulated in response to a problem, namely Russell’s Paradox (notoriously affecting Frege’s logical system). And part of my argument here will be that Aristotle too was responding in an important way to a predecessor (Plato, of course) and, in particular, to the problem of the unity of the definition.[[1]](#footnote-1) The crucial objection to Plato that Aristotle makes will turn out to be that Forms cannot be *numerical unities*. This will of course demand some explanation.

The story of Russell’s formulation of a paradox as an objetion to Frege’s system scarcely demands rehearsal. Roughly: Frege had built his system on an axiom equivalent to Naïve Comprehension, and Russell had, by means of his famous paradox, shown that such an axiom was untenable. The axiom allows for a set to correspond to *any* predicate whatever. Russell then considers the predicate “non-self-membered”. The axiom guarantees us the existence of a set R whose memebers are precisely those that are non-self-membered. Paradox arises because R is a member of itself iff it is not. The corresponding (or so I shall argue) story of Aristotle’s objection to Plato needs more development. Indeed, I shall first need to make clear the nature of this objection before arguing that it foreshadows the Frege-Russell dialectic.

In *Meta.* VIII. 6 Aristotle presents an argument against the Platonists, the upshot of which is that they cannot solve the problem of definitional unity. The text exhibits Aristotle’s typical compression; let us take a look at it:

What, then, is that which makes man one (*ho poiei hen ton anthropon*), and why is it one

and not many, *viz.* animal and bipedal, especially if there exist (*ei estin*), as some say,

some Animal-itself and Bipedal-itself (*auto to zoon kai auto dipoun*)? For why is man

not those things themselves (*ekeina auta*), so that men will by participation be not of

Man and not of just one thing (*kai esontai kata methexin hoi anthropoi ouk anthropou oud’*

*henos*) but of two things, *viz.* of Animal and of Bipedal, and generally, in fact, man

would not be one but several (*ouk an eie ho anthropos hen alla pleio*), *viz.* animal and

bipedal?[[2]](#footnote-2)

Before analyzing this passage in some depth, let us begin by noting that Aristotle’s “toy” definition of man as “bipedal animal” is, of course, terrible. Far from getting at the essence of humankind, such a definition seems not even to specify a sufficient condition for falling under that kind, as the existence of various avian species would apparently demonstrate. Neither, moreover, does “bipedal” seem to express a necessary condition for being human; surely we do not cease to be men upon the loss of a foot. But the correctness of the definition we lay to one side, for it is not our immediate concern; we are interested, rather, in more formal considerations.

Now Aristotle is clearly referring to the Platonists when he mentions those who say that there exist an Animal-itself and a Bipedal-itself. What is it about this metaphysical theory that precludes giving an acceptable account of definitional unity? The idea is apparently the following: (Assume for the sake of argument that man is defined by, and so in some way identical with, bipedal animal.) If Animal-itself and Bipedal-itself exist, then (a) man[[3]](#footnote-3) would have to participate in both of these. But if man participates both in Animal and in Bipedal, then that is to say that man is animal and that man is bipedal.[[4]](#footnote-4) And if man is both animal and bipedal, *then man is two things rather than one*. But it is required that man be one thing.

Now there is a certain criticism of this argument that may come to mind. Indeed, one may perhaps see Aristotle as making a rather rudimentary mistake. For to say of a thing that it participates in each of two Forms, one might think, is surely not to say that the participant itself must be two. Even if it follows from man’s participating both in Animal and in Bipedal that man is both animal and bipedal, we need not infer from this that man is two. On the contrary, it is one selfsame thing that participates both in Animal and in Bipedal. The count of the entities participat*ed* in is indeed two, but the count of the entities participat*ing* may for all that remain at one. And so Aristotle’s argument against the Platonists fails.

But I think this criticism is wrong. For it fails to take account of two crucial features of the case. First, animality and bipedality are not to be construed merely as two properties or attributes of man; they are rather to be construed as constituting the *essence* of man. To say that man is bipedal animal is not to predicate; it is to identify. The second, and more pertinent, feature is a point that I shall presently develop in some detail, and that is that Plato’s Forms are of a different nature from that of the contemporary philosopher’s “properties”. The difference, in a nutshell, will be that Plato’s Forms are things or objects. As Aristotle will put the point, Platonic Forms are *numerical unities*.

Let us again suppose that man is, by definition, bipedal animal. That is, man = bipedal animal. Now the basic trouble with interpreting this *definiens* as referring to Platonic Forms (*i.e.* to Bipedality and to Animality) is that Forms do not seem to “fit together” in such a way as to form a unity. The single entity Man must somehow be identical with the two entities Bipedality and Animality. And, again, this surely will not do unless these two entities can *compose* in some way or other. Aristotle’s objection to Platonic Forms (in the context of definition) is precisely this, that there is no way for them to compose so as to form unities.

Why is this? I take the explanation to be rooted in the fact that Forms are (somewhat ironically) *individuals*. Now this, again, is really the key point, though Aristotle’s phrase of choice here is that Forms are “numerical unities”. So let us spend some time on this: first, to explain what numerical unities are and, second, to explain why this notion is (roughly) equivalent to our modern notion of individuality.

Let us begin by noting a certain “grammatical” feature of unity. When making or considering a claim of unity, Aristotle will speak in one of two ways, and English is similar here. One may speak either of a property or of a relation of oneness.[[5]](#footnote-5) For one may say that such-and-such *is* one, but also that such-and-such and so-and-so *are* one (or that such and-such is *one with* so-and-so). And there is yet further ambiguity, for there is not a single relation of oneness. The expression form ‘*a* and *b* are one’ can mean either that *a* and *b* are *identical* or that they *compose* a unity.[[6]](#footnote-6)

Thus in the “property” way Aristotle says that a bundle is one or that wine is one.[[7]](#footnote-7) In the “identity-relation” way, on the other hand, Aristotle says that a man and a horse are generically one,[[8]](#footnote-8) while in the “composition-relation” way he can say that the parts of a shoe are one.[[9]](#footnote-9) When Aristotle says that man and horse are one he does not mean that horse and man compose a unity; he means that they are (generically) identical. But when he says that the parts of a shoe are one, he does not mean that the parts are identical with each other; he means that they compose a unity.

Now quite apart from this theory-neutral point about the grammar of being one, Aristotle draws several distinctions himself among kinds of unity (or sameness)[[10]](#footnote-10). The chapter in which these distinctions are most clearly drawn is *Topics* I. 7:[[11]](#footnote-11)

First of all we must determine the number of ways we talk of sameness (*peri tautou*). Sameness would be generally regarded as falling, roughly speaking, into three divisions. We generally apply the term numerically (*arithmoi*) or specifically (*eidei*) or generically (*genei*)—numerically in cases where there is more than one name but only one thing (*hon onomata pleio to de pragma hen*), *e.g.* doublet and cloak; specifically, where there is more than one thing (*pleio onta*), but they present no difference in respect of their species (*adiaphora kata to eidos*), as one man and another, or one horse and another; for things like this that fall under the same species are said to be specifically the same. Similarly, too, those things are called generically the same which fall under the same genus (*hupo tauto genos*), such as a horse and a man.[[12]](#footnote-12)

Thus what are two things in one sense can be one in a number of other senses. A man and a horse, for example, are generically the same or, equivalently, one in genus. Two men are specifically the same or, equivalently, one in species.[[13]](#footnote-13)

But our target notion is numerical sameness.[[14]](#footnote-14) Now Aristotle says that numerical

sameness holds “where there is more than one name but only one thing”. Thus, insofar as this “relation” in fact relates only a thing to itself, it may be taken to be a kind of identity relation.[[15]](#footnote-15) Consider Aristotle’s examples: ‘Doublet’ and ‘cloak’ are two names, but doublet and cloak are only one thing. The case is similar with man and bipedal animal: They are numerically the same in virtue of being not (in any sense)[[16]](#footnote-16) two things but in fact only one.

At this point it is well to remember our distinction between the “property” and the “relation” of oneness. For our goal was to understand what it is for something (*e.g.* a Platonic Form) to be a numerical unity. And obviously, this way of speaking invokes the *property* of oneness. But what I have just been discussing is what it is for thing*s* to be numerically the same. And this way of speaking invokes the (identity-) *relation* of oneness. Indeed *Topics* I. 7 discusses only numerical sameness *qua* relation, but what we need to understand is numerical unity *qua* property.

This understanding would seem to be forthcoming, however. For if what it is for things to be numerically one and the same is for them to be one single thing, then what it is for some thing to be numerically one must be for it to be a single thing. Now this may sound like a trivial condition to meet, but it is apparently *not* met by Aristotelian species and genera. The genus animal, for example, must somehow represent all animals, and so cannot be a single thing in the relevant sense;[[17]](#footnote-17) the same holds, *mutatis mutandis*, for a species like man.[[18]](#footnote-18) Let us observe here Aristotle’s remarks in *Categories* 5:

Every substance seems to signify a certain ‘this’ (*tode ti*). As regards the primary

substances, it is indisputably true that each of them signifies a certain ‘this’; for the thing revealed (*to deloumenon*) is individual and numerically one (*atomon kai hen arithmoi*). But as regards the secondary substances, though it appears from the form of the name (*toi schemati tes prosegorias*)—when one speaks of man or animal—that a secondary substance likewise (*homoios*) signifies a certain ‘this’, this is not really true; rather, it signifies a certain qualification (*poion ti*)—for the subject (*to hupokeimenon*) is not, as the primary substance is, one, but man and animal are said of many things (*legetai kata pollon*).[[19]](#footnote-19)

The basic point here is the one I just made. Species and genera are universals and hence not numerical unities. Primary substances (*i.e.* individuals), on the other hand, are the numerical unities. I therefore claim that Aristotle’s notion of being a numerical unity is roughly equivalent to our notion of being an individual.[[20]](#footnote-20) Notice, in particular, that being numerically one is contrasted, at the end of the present passage, with being said of many things, *i.e.* with being universal.

We are now in a position to investigate Aristotle’s complaint that Platonic Forms are numerical unities. The complaint occurs in *Topics* VI. 6:

This principle (*topos*) [of not dividing a genus by a negation] is useful against those who posit Ideas (*pros tous tithemenous ideas einai*); for if length itself (*auto mekos*) exists, how will it be predicable of the genus[[21]](#footnote-21) (*pos kategorethesetai kata tou genous*) that it has breadth (*platos echon estin*) or that it lacks it (*aplates estin*)? For one assertion or the other will have to be true of length universally (*kata pantos mekous*), if it is to be true of the genus; and this is contrary to the fact; for there exist both lengths which have, and lengths which have not, breadth (*esti gar aplate kai platos echonta meke*). Hence the only people against whom the rule can be employed are those who assert that every genus is numerically one (*hoi pan genos hen arithmoi phasin einai*); and this is what is done by those who posit the Ideas (*touto de poiousin hoi tas ideas tithemenoi*); for they allege that length itself (*auto mekos*) and animal itself (*auto zoion*) are the genus.[[22]](#footnote-22)

This is not the most pellucid passage in Aristotle’s corpus, but let us try to understand it.

Aristotle says that those who posit the Ideas (*i.e.* the Platonists) allege that length itself—or, if you like, Length-itself—is a *genus* (the genus of line, in particular). That is, their genus is an Ideal (Formal) entity. The trouble with this view, Aristotle says, is that Length-itself is itself a length. That is, it is a numerical unity. Length, the Form that stands above all particular lengths, is itself a particular length. And since it is a particular length, it is sensible to ask of it whether it have breadth or not. But now the difficulty is that Length-itself is also supposed to be the genus of all lengths, some of which have breadth and some of which have not. Therefore, to say of Length itself that it has breadth is to say at once that (a) all lengths have breadth, and to say of Length itself that it has not breadth is to say at once that (b) all lengths have not breadth. For a length with breadth could hardly be the genus of breadthless lengths, just as a breadthless length could hardly be the genus of lengths with breadth. But neither (a) nor (b) can be maintained, for, as Aristotle says, “there exist both lengths which have, and lengths which have not, breadth”. What is objectionable about Forms is that, despite being in some sense universals, they are in another sense individuals. And individuals, or “numerical unities”, are fully determinate entities. The Form of length, *qua* individual length, must either have breadth or lack it. And this is precisely what, according to Aristotle, renders it unsuitable to be the genus of lengths, since some lengths have breadth and others do not.

This difficulty with Forms likely stems from a conflation by Plato of what are really two distinct roles for Forms to play. The Form *F* is simultaneously (i) what all *F* things have in common and (ii) the paradigm instance of *F*-ness.[[23]](#footnote-23) The idea that what plays role (i) would also have to play role (ii) may be a mistake, but if so it is an understandable mistake. Consider, for example, *beauty*. Now the Form of Beauty that stands above all beautiful things is what all beautiful things have in common. It is what makes all beautiful things beautiful. And it would be paradoxical in the extreme, or so one might think, if that which made all beautiful things beautiful were not itself beautiful. Surely something ordinary, let alone ugly, could not be the necessary ground or essence of all beautiful things *qua* beautiful!

And yet the conflation of roles is not so understandable in the case of, say, *man*. It may be natural to think that what makes all beautiful things beautiful must itself be beautiful. But there is nothing at all natural in the thought that what makes all men men must itself be a man. In any case, it is clear that the two roles (i) and (ii) are perfectly capable of coming apart, especially since (i) would seem to be suited for a universal entity to play while (ii) would seem to be suited for an individual entity to play. But then this is precisely the mistake that Aristotle, in this passage from the *Topics*, accuses Plato of having made.

We began by looking at a passage from the *Metaphysics*, and I said then that, lest we misunderstand Aristotle’s criticism of Plato there, we have to appreciate the metaphysical differences between Platonic Forms and more modern “properties”. Now obviously there is no single modern theory of properties, but what is crucial about “the” modern conception is something that nearly every modern theorist would accept, *viz.* the appropriateness of their representation in modern symbolic logic by one-place sentence-forming operators or “predicates”. Properties, that is, have “holes”; they are, as Frege put the point, “unsaturated” entities.

But I think this is something that Plato would not accept about his Forms. As I said above, for Forms to be numerical unities is for them to be fully determinate entities. Far from depending on individuals to “fill their holes”, Forms are in fact *more real* than those individuals. To accept the modern Fregean notion of properties, then, is to accept a view according to which properties are *not* numerical unities.[[24]](#footnote-24) To accept the modern Fregean notion of properties is to accept that they will not be reified at the first order; it will be only in second-order logic that we shall allow ourselves to quantify over properties and to ascribe (second-order) properties to them.

Let us return now at last to the passage from the *Metaphysics* with which we began

the present section. Aristotle argued that, if Animal-itself and Bipedal-itself exist, then man

(*qua* participating in them) would be two rather than one. I described an obvious criticism

of this argument, to the effect that participating in a plurality of things need not pluralize the participant. But I then said that the criticism fails, inasmuch as it treats Plato’s Forms as though they were rather more like modern properties. I can now explain this remark. We can explain, in particular, how the fact that Forms are numerical unities (unlike modern philosophers’ properties) is relevant to the legitimacy of Aristotle’s criticism.

If the entities that constitute *definientia* are Platonic Forms, then they are numerical unities. And if the entities that constitute *definientia* are numerical unities, then there is no way for them to fit together so as to form a unity. And since man is to be defined as—and hence in some way identified with—bipedal animal, man becomes two: Man is animal, but Man is just as much bipedal; and since these two entities (Animal-itself and Bipedal-itself) are full-blooded objects ontologically independent one from the other, there is no way for man to be identified with both without its being in some way two. And it is this that Aristotle finds intolerable, since he is insisting here that *definientia* must form unities. Hence, it is crucial that Aristotle’s *definientia* not consist of Platonic Forms, since it is crucial that they not consist of entities that are themselves numerical unities.[[25]](#footnote-25)

Let us return again to Russell’s solution to Frege’s problem. Russell, of course, famously solved the problem of comprehension by proposing that the reality of sets is arranged *hierarchically*: Can we meaningfully speak of sets of sets? Yes, but it is important to distinguish them from sets of individuals. Call the latter “type-1 objects”. Sets of type-1 objects we shall call “type-2 objects”; *etc.* The way to avoid paradox, according to Russell, is to keep these types separate by having our quantifiers range only over objects that belong to a single type. Thus if I define a type-2 object *O* by describing its members as “everything that has exactly one member”, we must understand this to mean that every *type-1* object having exactly one member is in *O*: {{1}} is in *O*; {{{1}}} is not. Thus the domain of quantifiers is irreducibly *restricted*: Type-1 objects are not to be counted alongside type-0 objects (these being individuals). We may speak of the totality of type-0 objects, or of the totality of type-1 objects, but not of the totality of *all* objects.

Consider this passage from *Principia Mathematica*:

An analysis of the paradoxes to be avoided shows that they all result from a kind of vicious circle. The vicious circles in question arise from supposing that a collection of objects may contain members which can only be defined by means of the collection as a whole. Thus, for example, the collection of propositions will be supposed to contain a proposition stating that “all propositions are either true or false.” It would seem, however, that such a statement could not be legitimate unless “all propositions” referred to some already definite collection, which it cannot do if new propositions are created by statements about “all propositions.” We shall, therefore, have to say that statements about “all propositions” are meaningless. … The principle which enables us to avoid illegitimate totalities may be stated as follows: “Whatever involves all of a collection must not be one of the collection”; or, conversely: “If, provided a certain collection had a total, it would have members only definable in terms of that total, then the said collection has no total.” We shall call this the “vicious-circle principle,” because it enables us to avoid the vicious circles involved in the assumption of illegitimate totalities” (1910, 2nd edn 37).

If we are to find something resembling Russellian types in Aristotle, we should first be clear about what is distinctive about Russellian types. The key insight seems to be the thought that, in order to avoid various contradictions arising from the apparent possibility of sets containing sets, we must suppose that reality is broken up into different orders. We cannot count objects like {2} as being on a par with objects like 2. We have to say that, when we quantify over individuals, we must not allow our quantifiers to range over sets. Individuals will have their own domain; sets of individuals a second domain; sets of sets of individuals a third domain *etc.* Thus can we avoid paradox. In a word: To quantify is to count, and to count is to count unities. Thus to countenance different domains of quantification is to say that there are different ways of being a unity.

But this is precisely what we saw Aristotle saying above in *Topics* I. 7, *viz.* that there are many ways in which things are said to be ‘one’. And so Aristotle’s solution to the problem of definitional unity is, I argue, an important precursor to Russell’s Type Theory. Whereas Aristotelian individuals are numerical unities, Aristotelian universals will be one in a different sort of way. Let us observe *Meta.* V. 6: “And again, some things are one by number, others by species, others by genus, and still others by analogy: by number those things of which the matter is one, by species those things of which the account is one, by genus those things that have the same figure of predication, by analogy those things that are related as some other thing to another” (my trans.).[[26]](#footnote-26) This seems to say clearly that individuals and universals have different unity conditions, inasmuch as the former are related by matter and the latter by account (or form). Thus Aristotle’s ontology is *typed* in the same sort of which in which Russell’s set-theoretic ontology is.

Closing Note on Aristotle’s Hyletic Genera

Aristotle’s celebrated distinction between matter and form is the key to understanding the unity of an Aristotelian individual. The unity of a man is to be explained in terms of his matter (his body) being organized by his form (his soul). The unity of a statue of Apollo is to be explained in terms of its matter (the bronze) being organized by its form (the Apollonian shape). And so on.[[27]](#footnote-27)

Now in dicussing definitions, Aristotle says that definition is by genus and *differentia*. If we are defining *man* (an *eidos*), then we cite its containing genus (*animal*) and then its particular *differentia* (*two-footed* or *rational*). This analysis reopens a puzzle about the unity of universals (since we now have it that the *eidos* is a sort of composite of genus and *differentia*). Now, in solving it, Aristotle famously likens the genus to matter and the *differentia* to form.[[28]](#footnote-28) A new worry thus emerges, for it now appears as though the way in which universals are one is after all the same as the way in which individuals are one!

But all depends on the nature of the “likeness” that Aristotle posits between genera and matter. Scholars have been divided on how to interpret this distinctively Aristotelian tenet. Some, most notably Richard Rorty and his followers, have argued that we must take this “identification” of genera and matter seriously and literally.[[29]](#footnote-29) But most interpreters[[30]](#footnote-30) want to see only a kind of metaphor here. If the foregoing is correct, then we have reason to side with the latter. Aristotle’s thesis seems to be not merely that the elements of a definition must form unities; rather, the further point is that they must form unities *in a way distinct from* how individuals are unities. But Rorty would have us abandon this further important point of Aristotle’s definitional theory. And so indeed we have positive reason to reject his strict interpretation of the famous genera-to-matter analogy.

1. One could, alternatively, point to the problem of the Third Man. But the problem of definitional unity, unlike this much more discussed problem, really highlights the unity issue in particular and so is more germane to my purposes. [↑](#footnote-ref-1)
2. *Meta.* VIII. 6, 1045a14-20 (my trans.). [↑](#footnote-ref-2)
3. Aristotle seems in this chapter to slide from speaking of the unity of definitions (man *qua* *definiendum*) to the unity of individuals (a particular man). Are these two different entities *one* in similar ways? There is in fact a deep issue here that I cannot get into in the present essay, but see the closing note. [↑](#footnote-ref-3)
4. By this sentence I mean only to express the standard Platonic analysis of ordinary predicative assertions: To say of *x* that it is *F* is to say that *x* participates in the Form of *F* (-ness). See *e.g.* *Phd.* 100c-e, *Parm.* 130b-131a. [↑](#footnote-ref-4)
5. Aristotle comes close to articulating this distinction in Book V of the *Metaphysics*: “Clearly, therefore, sameness is a unity of the being either of more than one thing or of one thing when it is treated as more than one, *i.e.* when we say a thing is the same as itself; for we treat it as two” (*Meta.* V. 9, 1018a8-10 (trans. Ross)). For a classic critique of Aristotle to the effect that he was careless about the distinction between oneness and unity see White (1971). [↑](#footnote-ref-5)
6. S. Marc Cohen is careful about this in his (1984). There are other possible disambiguations as well, though I shall not consider them here because they are irrelevant, and, in many cases, baroque. One might interpret the form, for example, as expressing the rather bizarre thought that *a* and *b* are jointly identical with the number one. [↑](#footnote-ref-6)
7. See *Meta.* V. 6, 1016a1; 1016a21. [↑](#footnote-ref-7)
8. A common Aristotelian example. See *e.g.* *Topics* I. 7, 103a13-15; *Meta.* V. 6, 1016a24-7. (What is

   meant, of course, is not that man and horse are identical *tout court*, but rather that they are identical in respect of genus (*viz.* animal).) [↑](#footnote-ref-8)
9. See *Meta.* V. 6, 1016b12-16. [↑](#footnote-ref-9)
10. Sameness has, of course, its own peculiar grammar, distinct from that of unity. But I do not think that this grammar introduces any particular complexities, or anyway any complexities that are worth serious attention. Semantically, of course, sameness and oneness are quite close. [↑](#footnote-ref-10)
11. *Cf.* also *Meta.* V. 6 and V. 9. [↑](#footnote-ref-11)
12. *Topics* I. 7, 103a6-15 (trans. Pickard-Cambridge). [↑](#footnote-ref-12)
13. Obviously, specific sameness entails generic sameness. Two things can hardly be (in, of) the same

    species if they are not even (in, of) the same genus. See *Meta.* V. 6, 1016b35-1017a3. [↑](#footnote-ref-13)
14. Later in the same chapter (*Topics* I. 7) Aristotle in fact distinguishes three sorts of numerical sameness, depending, in effect, on whether a thing is referred to by its essence, by one of its *propria* or by one of its accidents. Thus man and bipedal terrestrial animal are numerically the same in sense (i), fire and that which naturally moves upward are numerically the same in sense (ii) and Socrates and the musical (man) are numerically the same in sense (iii). (See 103a25-30.) This distinction is irrelevant to present concerns. [↑](#footnote-ref-14)
15. Some caution is in order, however. For Aristotle’s numerical sameness is in general not subject to the familiar Leibnizian rule that objects related by it have all the same properties. See *Soph. Ref.* 24, 179a36-b6. [↑](#footnote-ref-15)
16. Just as specific sameness entails generic sameness, so too Aristotle says that numerical sameness entails specific sameness. Therefore, things numerically the same will be one and the same in all such senses. See *Meta.* V. 6, 1016b35-1017a3. [↑](#footnote-ref-16)
17. Since the genus animal is not a single thing, it is not, in particular, a single *animal*. The importance of this entailment will emerge shortly. [↑](#footnote-ref-17)
18. Apparently, man is not one in the sense of being a numerical unity, but, of course, the whole problem of definitional unity arises only because man is in some sense a unity. What is this sense in which man is a unity? Presumably, all we need to say is that man is a single *eidos* (whereas bipedal animal at least seems not to be a single *eidos*). [↑](#footnote-ref-18)
19. *Cat.* 5, 3b10 (trans. Ackrill). [↑](#footnote-ref-19)
20. Let us simply also note the possibility of treating epexegetically the ‘*kai*’ in line 3b12 (between ‘*atomon (gar)*’ and ‘*hen arithmoi*’). [↑](#footnote-ref-20)
21. *I.e.* of length. Aristotle is supposing *line* to be putatively defined by breadthless length. Hence length is the putative genus and breadthless(ness) is the putative *differentia*. Perhaps there is a joke here, since Aristotle’s word for “breadth” is ‘*platos*’, while his opponent is, of course, the broad one, *Platon*. [↑](#footnote-ref-21)
22. *Top.* VI. 6, 143b24-33 (trans. Pickard-Cambridge). [↑](#footnote-ref-22)
23. That Forms play role (i) is clear from nearly any discussion of Forms in Plato. The introduction of them in the *Euthyphro* (at 5d) is motivated precisely by the need for some objects to play this role. That they play role (ii) is hardly any more controversial. A passage from the *Phaedo* illustrates Plato’s inclination to run (i) and (ii) together: “Consider then ... whether you share my opinion as to what follows, for I think that, if there is anything beautiful besides the Beautiful itself, it is beautiful for no other reason than that it shares in that Beautiful, and I say so with everything” (*Phd.*, 100c (trans. Grube)). (Of course, the initial move of calling what all beautiful things have in common “the Beautiful itself” already suggests that such an entity will play role (ii) in addition to role (i).) [↑](#footnote-ref-23)
24. These reflections owe something of their existence to conversations with Victor Caston. [↑](#footnote-ref-24)
25. Notice a certain *prima facie* oddity here. Recall, despite Aristotle’s criticism of Forms here, that man and bipedal terrestrial animal are numerically one. We thus have the somewhat peculiar result that the *relation-*language of unity is appropriate for man while the *property-*language is not. That is, even though it is true to say that man is numerically one with bipedal terrestrial animal, it would nevertheless not be the case that man (or bipedal terrestrial animal) is numerically one. Still, there is really no absurdity here; one must simply use the terminology of unity with some care. In fact, Alexander was already aware of this situation in his commentary on *Topics* I. 7: “Nor need we wonder that Aristotle calls man one in number: for both the species itself *compared to itself* and the genus considered in the same way are held to be one in number” (60, 17-19 (my emphasis), trans. Van Ophuijsen). That is, the species is numerically one with itself; it does not follow that the species is a numerical unity. [↑](#footnote-ref-25)
26. *Meta.* V. 6, 1016b31-5. [↑](#footnote-ref-26)
27. Note that matter and form seem by their very nature to “fit together” so as to form unities. [↑](#footnote-ref-27)
28. See esp. *Meta.* VIII. 6, 1045a23-5. [↑](#footnote-ref-28)
29. See most especially Rorty (1973). [↑](#footnote-ref-29)
30. Kessler (1976), the Londinenses (1979), Bostock (1994), Wedin (2000) *et al.* [↑](#footnote-ref-30)