

# ***The Really Real: The Consistency of Primary Substance Primacy in Aristotle's Categories***

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## **Abstract**

Fundamental to Aristotle's ontology in the *Categories* is the notion that primary substances are more real than either secondary substances or non-substances. He accepts the formal premise (1) "If Xs are the subject of more things than Ys, then Xs are more real than Ys". He claims (2) "Primary substances are the subject of more things than either secondary substances or non-substances." From this, the conclusion that primary substances have ontological priority follows nicely. However, he does not explicitly defend (2). I show how one can take the ontological map of the *Categories* to show that (2) follows.

## **The Really Real: The Consistency of Primary Substance Primacy in Aristotle's *Categories***

### **§1 - Introduction**

Fundamental to Aristotle's ontology in the *Categories* is the notion that primary substances are more real than either secondary substances or non-substances.[1] Aristotle assigns ontological primacy to Primary Substances (hereinafter, PSs) because he understands them to be the subject of everything and the subject of more things than either Secondary Substances (hereinafter SSs) or Non-Substances (hereinafter NSs). This view is encapsulated in two assertions.

(1.1) Substance, in the truest and primary and most definite sense of the word, is that which is neither predicable (said) of a subject nor present in a subject. [*Categories* 2a11-13]

and

(1.2) Everything except primary substances is either predicable of a primary substance or present in a primary substance. [*Categories* 2a33-24]

Quite a bit hangs on PSs being more real and ontologically prior to SSs and NSs. The degree to which things that are not PSs are substances at all depends on their proximity to the PS level. Or, as Aristotle puts it,

(1.3) Of secondary substances, the species is more truly substance than the genus, being more nearly related to the primary substance. [*Categories* 2b7-8]

He goes on to develop this assertion with the following one:

(1.4) Moreover, primary substances are most properly called substances in virtue of the fact that they are the entities which underlie everything else, and that everything else is either predicated of them or present in them. [*Categories* 2b15-17]

That Aristotle holds PSs to be ontologically prior to, and thus more real than, SSs is fairly uncontroversial. As he writes, “PSs are more properly so called, because they underlie and are the subjects of everything else.” [*Categories* 2b38-39] The view can be symbolized as follows:

- (A) If Xs are the subject of more things, then they are ontologically prior to Ys.
- (B) PSs are subject of more things than SSs.
- (C) So, PSs are more real than SSs.

But this uncontroversial Aristotelian point rests on (B) which Aristotle does not explicitly defend. Since the first premise is a formal implication, the reader is rightly given to wonder if, given the schema of the *Categories*, (B) is true. This becomes more problematic because the fact that everything is “said-of” or “present-in” PSs is consistent with both of the following:

- (1.5) There are more SSs at some level above the PSs level than at the PS level, and
- (1.6) There are more PSs at their level than individuals at the preceding level.

However, only if (1.6) holds will (B) hold.[2] In this paper, I will argue that (B) holds, given the ontological tree of the *Categories*. As a result, Aristotle’s view of the ontological primacy of PSs over SSs and NSs (that is, that PSs are really real) will be shown to be internally consistent. To defend (B), I will show that

- (b1) PSs are subject of more “said-of” relations than SSs [§2], and
- (b2) PSs are subject of at least as many “present-in” relations as SSs [§3].

This will settle the difficulty expressed in (1.5) vs. (1.6). More importantly, if (b1) and (b2) hold, then (B) follows and thus, too, (C).

## **§2 - Showing (b1) - PSs are subject of more “said-of” relations than SSs**

One way of evaluating (b1) is to count the number of “said-of” relation branches that terminate into each level of the ontological tree as it proceeds from the *Category* level to the PS level. To show (b1) we need to show that there are a finite number of PSs on Aristotle’s view. Since each branch terminates into one and only one element, if there is a finite number of branches terminating into the PS level then there is a finite number of PSs. Similarly, since each branch represents a “said-of” relation, if there are more branches terminating into the PS level than branches terminating in the previous levels, then PSs are the subject of more things than any preceding level.[3] This implication is consistent with both of the following:

- (2.1) There are more PSs at their particular level than SSs on any particular level preceding the PS level, and
- (2.2) There are more PSs at their level than the sum of all the SSs on all the levels

preceding the PS level.

Since Aristotle's position is compatible with both, I will show the stronger claim holds, (2.2), at which point the weaker claim becomes trivial.

### **§2a - Finite Number of PSs**

The easiest way to approach this step is to assume that it is not the case that there is a finite number of PSs. Thus, if the PS level were infinite, then either (a1) there are an infinite number of levels of differentiae from the *Category* level to the PS level or (a2) some intermediate genus (between *Substance* and PS) generates an infinite number of branches.

The first option cannot be the case on Aristotle's view because the schema that he develops in the *Categories* is designed to allow one to specify the trail between a *Category* and that *Category's* level of particulars. The second option is a bit more difficult to dismiss.

Suppose a genus generates an infinite set of branches. Then it generates a set of species, **S**, that is infinite and of which the genus is said. Hence, there must be a set of PSs, **P**, that corresponds to **S**, such that **P** is infinite and is related to the genus of **S**. However, it can be shown with a bit of empirical observation that such an infinite set, **P**, does not exist. Humans are not infinite in number; neither horses, or monkeys, nor rabbits, nor ants. Since no particular set, **P**, of PSs is infinite, then the union of the respective **P**s is likewise not infinite. Thus, no genus generates an infinite number of branches. Since (a1) and (a2) fail, then there must be a finite number of PSs on the view of the *Categories*. We symbolize this result as follows:

(2.3) For every level, *i*, there exists finite **n**, such that  $n_i$  = the number of branches terminating into that level.

### **§2b - Each Successive Level Generates More Branches than the Previous One**

An intermediate step in showing (2.2) is to show that each successive level has more branches than the previous level. Let *m*, *k* be particular levels between the category *Substance* and the PS level. What will be shown is that: If *m* is closer to the PS level than *k*, then  $n_m > n_k$ .

Suppose  $n_k > n_m$ . This means that one of two options occurred from the higher level to the lower: (1) Some genus emanated only one branch,[4] or (2) Some genus emanated no branches. I begin with (2) because (1) is more difficult to dismiss. To say that a genus emanated no branches is just to say that the genus is empty. That is, there is no individual substance for which it is a predicate. This possibility is fairly quickly dismissed on the picture of the *Categories*. Simply put, if **X** is a predicate, it must be predicable of a substance. **X** is not predicable of a substance (because no branch emanates from the genus to a particular species). Therefore, **X** is not a predicate.[5] It is fairly clear that Aristotle has something like this in mind from his assertion at 2a19-20: "It is plain from what has been said that both the name and the definition of the predicate must be predicable of the subject."

As mentioned above, (1) is more difficult. Suppose such a genus emanated only one

branch terminating in a single species. This would be to say, however, that a genus issued in no differentiae and is extensionally equivalent to the supposed “species”. That being the case, the genus and the species are identical for Aristotle. Given that, the supposed “species” just is the genus of which it was supposed to be a species. Thus, to suppose that a genus emanated a single branch is to suppose that (p) the species and the genus are distinct and ( $\sim$ p) the species and the genus are identical. This is a contradiction. Thus we can safely dismiss (1).

The result of dismissing (1) and (2) is that it becomes clear that each genus generates at least two branches. It may be the case that each genus, or any finite number of genera, generates many more than two branches. That poses no difficulty as all we need is that each genus generates two or more branches.

### **§2c - More Branches to PS Level than the Total Number of Levels Above It.**

The stronger case, (2.2), can be symbolized in the following way:

$$(2.2) \quad n_{ps} > n_{ps-1} + n_{ps-2} + \dots + n_2 + n_{ps-1}.$$

To show this, we begin with the simplest case which is coincidentally the one in which (2.2) has the best chance of being false. Assume that each genus generates only two branches.[6] Since the PS level is twice the size of the preceding level (because each of the genera of the preceding level generated two branches), the size of the PS can be represented as  $2^{ps-1}$  because this would reflect each of the individuals of the level immediately preceding the PS level emanating two relation branches. The result, then, is in the following form:

$$(2.4) \quad n_{ps} = 2^{ps-1} > 2^{ps-2} + 2^{ps-3} + \dots + 2^2 + 2^1.$$

In the case that we have been considering, where each genus generates two branches, the following is true:

$$(2.5) \quad n_{ps} = 2^{ps-1} = 2^{ps-2} + 2^{ps-3} + \dots + 2^2 + 2^1.$$

Thus, if each genus generates two branches then (2.2) is true.[7] Further, (b1) holds.

### **§3 - Showing (b2) PSs are Subject of at Least as Many “present-in” Relations as SSs**

I turn now to showing (b2). A potential objection to (C) is motivated by other claims Aristotle makes in the *Categories*. These can be formalized as follows:

(TP): If **X** is “said-of” **Y** and **Y** is “said-of” some subject **Z**, then **X** is “said-of” **Z**.

(QTP): If **X** is “said-of” **Y** and **Z** is “present-in” **Y**, then **Z** is “present-in” **Y**.

The first principle, the Transitivity Principle, is straightforwardly lifted from the text. Aristotle claims that, “When one thing is predicated of another, all that which is predicable of the

predicate will be predicable also of the subject” [*Categories*, 1b10-11].

The second, the Quasi-Transitivity Principle, is a bit more obscure. Aristotle states that “colour is present in body, therefore in individual bodies, for if there were no individual body in which it was present, it could not be present in body at all.” [*Categories*, 2b1-2]

From these two principles, the core of the objection is this: If SSs and NSs are themselves “predicated-of” (by QTP), then it would seem that everything of which PSs are subject can also be seen as something of which every SS and NS is eventually subject as well. For example, *bird* is “said-of” *cardinal* which in turn is “said-of” Fredbird[8] and all the particular cardinals at the PS level of the ontological tree.[9] We have already seen that Fredbird, et al, is the subject of more “said-of” relations than *cardinal* and *bird*. At the same time, *color* is “said-of” *red* and *red* is “present-in” Fredbird. But it would seem that by QTP, everything predicated of Fredbird is also predicated of *cardinal* and then of *bird*. Thus, Fredbird is not the subject of more relations than *cardinal* or *bird*. Such a result would invalidate the claim that the ontological priority of PSs somehow follows from their being the subject of more things. Thus, based on the application of TP and QTP, the objection is a denial of (b2).[10] In this section of the paper, I will show that (b2) is not compromised in accepting Aristotle’s formal principles. That result will serve to confirm that PSs are ontologically prior to SSs and NSs **because** PSs are the subjects of more things.

To begin, let us reformulate (B) to make its content more explicit. To say that PSs are subject of more things than SSs or NSs is just to say that

(B’) There exist some numbers,  $n_s$  and  $n_p$ , such that  $n_s$  is the number of “said-of” relations to which PSs are subject and  $n_p$  is the number of “present-in” relations to which PSs are subject and there exist some numbers,  $m_s, m_{quantity}, \dots, m_{quality}$ , such that  $m_s$  is the number of “said-of” relations to which SSs are subject and  $m_{quantity}$  is the number of “present-in” relations from the *Quantity* category to some SS level below it (within the *Quantity* category) and ultimately to the PS level of the ontological tree (through QTP) and  $m_{quality}$  is the number of “present-in” relations from *Quality*, and so on for the rest of the particular  $m$ ’s. And,  $n_s + n_p > m_s + m_{quantity} + \dots + m_{quality}$ . [11]

The first part has been shown in §2 and is formally represented by

$$(3.1) \quad n_s > m_s [12]$$

QTP does not cause problems for this result because we note that the consequent of QTP always concerns a “present-in” relation. Aristotle also posits that

(3.2) Some things are present in a subject, but are never predicable of a subject. [*Categories*, 1a24-25]

From QTP and (3.2) we know that NSs are the subject of no “said-of” relations from the *Substance* category to any particular NS category. Even though the ontological tree branches from the *Category* level to the particular level through “said-of” relations, those relations are

converted into “present-in” relations when the NS particulars are related to the PSs. For example, *color* is “said-of” *red*, but *red* is “present-in” a particular cardinal. Hence, for our purposes here, we can count the NS relations under either heading but not under both as this would cause double-counting of the same relations. Thus,  $m_s$  is just the number of “said-of” relations to which SSs are subject.

We can now show that (b2) holds. Notice that (b2) is a weaker claim than the following:

(b2’) PSs are the subject of more “present-in” relations than the sum of the SSs and NSs.

Were this stronger claim to be true, (b2) would be a trivial result. However, QTP makes (b2’) false.[13] But that is fine, because all we need is the weaker version. In fact, rather than cause a problem, QTP actually forces the result we want.

From QTP we know that, for Aristotle, for every NS like *color*, for example, there is at least one corresponding PS to which it is related. As Aristotle claims, “if there were no individual body in which it was present, it could not be present in any body at all. ... If [PSs] did not exist, it would be impossible for anything else to exist.” [*Categories*, 2b2-6] This is not to say that for each NS there is one and only one PS to which it is related. In fact, every PS could be lime-green. However, since (a) there are a finite number of PSs, (b) each of the NS *Categories* branch from their respective *Category* level to their respective particular level like the *Substance* category does, *mutatis mutandis*, and (c) each NS is instantiated in a PS, then there are a finite number of NSs. That number might be quite large and the resulting set of “present-in” relation branches from the NS *Categories* would be correspondingly large. So, we know that

(3.3)  $m_{quantity}, \dots, m_{quality}$  are all finite and that their sum is the number of “present-in” relations that terminate in the PS level of the ontological tree.

At this point, QTP actually helps Aristotle’s cause. Because of QTP, every predicate that is “present-in” the PS level is present in the SS level immediately preceding it. The example Aristotle uses shows this nicely.

(x) ‘Human’ is “said-of” the individual human.

(y) Color is “present-in” individual humans.

(z) Therefore, color is “present-in” ‘Human’. [*Categories*, 2a3-b4, with appropriate language-inclusive changes.]

Generalizing (3.3), we see that every predicate that is “present-in” the PS level is eventually, by QTP, “present-in” the *Substance* level because it is “present-in” every intervening level from the SS level immediately preceding the PS level to the *Substance* level. Since each of these NS predicates generates a branch that traces from the NS category in question to the *Substance* level, it is apparent that SSs are the subject of more “present-in” relations **when the SSs are considered as a homogeneous set**. [14] Thus, if there were only two SS levels, then the number of “present-in” relations to which the SSs were subject would be twice the number to which the PSs were

subject. Hence, we have found that the earlier suspicion was justified and the stronger reading, (b2'), is false.

However, that does not compromise (b2). Aristotle has another principle in his *Categories* ontology. He claims "of species themselves, except in the case such as are genera, no one is more truly substance than another." [*Categories*, 2b23-24] This claim can be generalized and expressed as follows:

(3.2) Each level is ontologically homogeneous.

The support for this principle is straightforward. Since every level has a particular number of "said-of" relation branches terminating into it and a particular number of "present-in" relation branches terminating into it, it has a particular ontological status relative to the sum of the predication relation branches terminating into it. This result is not surprising given that we have seen that QTP forces each level to have the same number of "present-in" relation branches terminating into it. Which is why we now argue for the weaker claim, (b2).

We have already established that  $m_s < n_s$  [from (b1)]. Because of QTP, the PS level is the subject of the same number of "present-in" relations as **each particular** SS level. Thus, for any given SS level,  $m_{quantity} + \dots + m_{quality} = m_{quantity} + \dots + m_{quality}$  for the PS level [from (3.3) and QTP in the foregoing demonstration]. As a result of these two we have that for any given SS level,  $m_{quantity} + \dots + m_{quality} + m_s < m_{quantity} + \dots + m_{quality} + n_s$  for the PS level. Thus, (b2) holds.

We are left with the following result. For any NS *Category*, PSs have ontological priority because that NS *Category* will have only  $m$  "present-in" relations that describes it while the PS level will have that particular  $m$  in addition to all of the others and the "said-of" relations,  $n$ . For any given SS level, the PS level will have ontological priority for the reason demonstrated above. Thus we have shown that both (b1) and (b2) hold and that QTP aids rather than compromises the demonstration of (B). Thus, given the ontological tree that Aristotle develops in the *Categories*, the subject criterion can be deduced.

### Biographical Sketch

Dr. Kevin K. J. Durand is Assistant Professor of Philosophy, and has taught at Henderson State University since 1999. He completed his Ph.D. in Philosophy at the University of Oklahoma in August of 2000. He previously completed a M.A. in Philosophy at the University of Oklahoma (1997), an M. Div. in Theology at Emory University (1993) and a B.S. in Mathematics at Henderson State University (1990). Currently, Kevin serves as President of the Mid-South Philosophy Conference, Convener of the Process Circle, and as a member of the Henderson Honors Faculty. His first book, Wisdom: History, Theory, and Application, was published in the Summer of 2001. His current project, Sidgwick's Utility and Whitehead's Virtue, is forthcoming in the Spring of 2002.

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[1] Hereinafter PSs, SSs, and NSs, respectively.

[2] Note that if it can be shown that there are more PSs than secondary substances, then it will follow that there are more “said-of” relation branches terminating into the PS level than into any level above the PS level. That being the case, it will also be the case that PSs are subject of more “said-of” relations than secondary substances.

[3] Further, we know that the primary substance level is the concluding level since primary substances are neither present-in nor said-of anything further. If a primary substance were “said-of” or “present-in” some other thing, then that thing would be the primary substance, on Aristotle’s account, and the thing presumed to be the primary substance in the first moment would have been shown to be a secondary on the basis of its being said-of or present-in something further. This particular view has ramifications for more than the particular “primary substance” in question. At 2b23-24, Aristotle makes the claim that “Of species themselves ... no one is more truly substance than another.” Since everything on a particular level is equally a substance (or not a substance), if some “primary substance” on the level presumed to be the primary substance level were shown to actually be a secondary substance, then everything on that level would have been shown to fail to be a primary substance.

[4] Indeed, for  $n_k > n_m$  to be the case, every genus at the  $m$  level would have to issue only one branch. But that is to say that some genus did. If it is shown that no genus issues in only one branch, then that is sufficient to show that all of the genera did not.

[5] In this way, Aristotle rules out the possibility of empty forms, for example.

[6] Note that we can make this move because the number of branches terminating into the preceding level is equal to the number of elements on that level. But since we have been counting branches elsewhere, for the sake of consistency, we continue doing so here.

[7] Such a result will hold for any genus generating more than two branches. This is so because regardless of how many branches any particular genus on any particular level generates, it will always be the case that the PS level is *at least* twice the size of the level immediately preceding it. Indeed, each successive level, whatever level it might be, is always of at least twice the size of the level preceding it. Thus, the result that we want for Aristotle holds. This follows from the demonstration that each level generates more branches than the previous one. Specifically, it depends on the possibilities of a genus generating no branches or only one branch. Those possibilities were addressed there so I will not restate them here. Suffice to say that since a genus cannot issue in none or one, it must issue in two or more. Should a level happen to generate far more than two branches per genus, the successive level will be considerably larger than twice the size of its predecessor. That is to say, there is an inverse proportion relationship between the element represented by  $n_{ps}$  and the element represented by  $2^{ps-2}$  (which is  $n_{ps-1}$ ). The closer the second is to half of the first, the smaller the first is (though it is always at least twice the size of the second) because the second is always less than or equal to half of the first. Similarly the further the second is from its maximum of half of the first (as in the case of a level



of genera generating more than two branches each) the larger the former is in relation to it. Thus, this is why the example chosen is the one which has the best chance (indeed the only chance) of making the result false.

[8] The mascot of the St. Louis Cardinals baseball team.

[9] I have followed Hugh Benson in rendering the principle taken from the passage in the positive voice rather than the negative. I should note that the QTP can take three different forms; namely the one in the body of this paper as well as the two which follow here. (WTP'): IF **Z** is "present-in" **Y** and **X** is "said-of" **Y**, then **X** is "present-in" **Y** and (QTP'): If **X** is "said-of" **Y** and **Z** is "present-in" **Y** and **W** is "said-of" **Z**, then **W** is "present-in" **X**. These two forms are logical manipulations of the above stated principle alone, in the case of QTP', and of the above stated principle along with TP in the QTP" case.

[10] Given the demonstration in the earlier section that PSs are subject of more "said-of" relations, then the objection is a denial of (B) The objector would accept the formal principle, (A) If **Xs** are the subject of more things, then they are ontological prior to **Ys**." This is good for the objector since it is a formal principle to which Aristotle clearly seems committed (from 1.2 and 1.4). Thus, the objection is that in accepting the three formal principles - TP, QTP, and (A), (B) turns out to be false.

[11] Or, in simpler (if perhaps less exact terms), PSs are subject of more ("said-of" relations and "present-in" relations) than SSs or NSs. I have grouped these clauses with parentheses to show that it is the sum of PS "said-of" and "present-in" relations that is greater than the sum of SS and NS "said-of" and "present-in" relations. Notice, it could be the case that PSs are subject of more "said-of" relations than SSs or NSs but subject to the same number of "present-in" relations. Or, alternatively, PSs could be the subject of more "present-in" relations and more "said-of" relations than SSs or NSs. In either case, (B) holds. Since we have seen that PSs are subject of more "said-of" relations than SSs or NSs, then the only way in which to make (B) false is to show that SSs and/or NSs are subject of more "present-in" relations than PSs (and that they are subject of enough more to counter the surplus of "said-of" relations to which PSs are subject.

[12] Where  $n_s$  is the number of PSs and  $m_s$  is the sum of the SSs at all of the levels above the PS level.

[13] This will be shown later in this section.

[14] That is to say, since each SS level has the same number of "present-in" relation branches terminating into it (by QTP), then the sum of the "present-in" relations terminating in all of the SS levels is going to be greater than the number of "present-in" relations terminating in the PS level by a factor that reflects the number of SS levels.