

Porphyrus and Boethius on Division and Natural Kinds

In his *Book on Division*, Boethius announces both the great usefulness and ease of the classification method of division (877a). The philosophical method of division it finds its original articulation in the *Topics* of Aristotle and dialogues of Plato, particularly in the *Phaedrus*, *Sophist*, and *Statesman*. Its most rigorous and systematic treatment appears, however, in the NeoPlatonic logical treatises of Porphyry and Boethius. As I hope to make clear in the course of this discussion, these NeoPlatonic accounts of division, difference, and definition bear a direct relevance to contemporary discussions of natural kinds.

First a few words about the method. Division (*diaeresis*) concerns itself mainly with identifying and classifying ontologically significant distinctions between things. The paradigmatic, but by no means only, case is the identification of those qualities or characteristics that cause an individual to be classified within the natural kind, or species, that it is. As such, division falls within the boundaries of broader dialectical goal first announced by Plato in the *Phaedrus* of “carving nature at its joints,” distinguishing each kind according to its species, so as not to splinter any part.¹ That broader dialectical framework allies the method of division with that of Platonic collection (*synagōgē*), by which one is able to “make clear the subject of any instruction” through “seeing things together that are scattered about everywhere and collecting them into one kind.”² Thus the ‘way up’ of collection is intimately tied with the ‘way down’ of division, and Plato himself associated the two in *Republic 7* and *Phaedrus 266*. Through collection one sifts through various individual entities and determine the proper broad kinds in which they

¹ *Phaedrus* 265e1.

² *Phaedrus* 265d3.

should be placed, while through division one separates these broad kinds into their proper parts, so that one may yield the appropriate definition of each natural kind. Plato employs these methods with special virtuosity in defining the ‘Sophist’ and the ‘Statesman’ in the dialogues of the same name.

Of course, the ability to sketch the goals of a method, and the ability to clearly state the criteria by which the method achieves these goals, are two different things. Unfortunately, Plato never adequately provides the latter. By turning to NeoPlatonic conceptions of dialectic (*dialektikē*), however, one finds a number of helpful methods and techniques for employing the procedure of division. In this paper, I propose to focus on one pivotal activity: the identification of specific difference. Specific difference, for Porphyry and Boethius, is precisely that difference which, when added to characteristics of the proximate genus, yields the essence of a particular kind. Once understands the criteria by which specific differentiae are identified, one can justifiably claim to understand the three related activities of division, definition, and collection (to use the Platonic term) or inductive analysis (to use the Aristotelian term).

Porphyry’s *Isagoge* is the first text to examine in this regard; here Porphyry seeks to distinguish between the *quinque voces*, or ‘five words’ of genera, species, difference, property, and accident. As he tells the young student Chrysaorius:

To know what is a genus and what a difference and what a species and what a property and what an accident—and also for the presentation of definitions, and generally for matters concerning division and proof, the study of which is useful, I shall attempt [to] make you a concise exposition.³

³ *Isagoge* 1: 4-8.

Porphyry goes on to unravel the differences between them. Genus, he says, is “that under which a species is ordered...for a genus is a sort of origin for the items under it, and a plurality is held to contain everything under it.”⁴ As such, genus is that kind of predicate which is “predicated of several items.”⁵ Nevertheless, genus shares this property of common predication with the other four of the *quinque voces*, namely species, differences, properties, and accidents. If common predication was the only characteristic of genus, there would be no basis its distinction from the others. What therefore is unique about it?

Porphyry gives the following example for clarification: “Animal, for instance, is a genus; man a species; rational a difference; laughing a property; and white, black, and sitting accidents.”⁶ The rest of the *Isagoge*, in a sense, is devoted to explaining this example, and distinguishing the different ways in which common predicates can be made. Each satisfies a unique set of characteristics, and thus each can be distinguished from each other, despite the fact that all are common predications. Porphyry’s criteria seem to be four: number, ‘essence’, ‘equal participation’, and counterpredication. What Porphyry means by these terms will become clear as we work through his examples.

The difference between genera and species is often said to be that between which is more general and contains the other, and that which is contained. This, however, will not work if one wishes to maintain a coherent categorical scheme, for the following reason. *All* the other common predicates – difference, property, accident, and species – are contained within and below genus, and thus this provides no clear way to distinguish the unique way in which species differs from genus. As such, Porphyry offers the

⁴ *Isagoge* 2: 11-13.

⁵ *Isagoge* 2: 23-24.

⁶ *Isagoge* 2: 21-23.

following account instead: species differs from genus insofar as species is predicated of things which differ *in number*, (eg. how Socrates differs from Plato), while genus is predicated of things which differ *in species* (eg. how humans differs from horses, but are both animals). Species is predicated of things which differ in number only – i.e., things which share the same essence – while genus is predicated of things which differ not only in number but also in species. Number, therefore, is the first important criterion that Porphyry identifies when it comes to distinguishing between different kinds of common predication.

How does one distinguish between genus and the other kinds of common predication – property, difference, and accident? The difference with the last is the easiest to see. An accident, like ‘white, black, or sitting,’ are not predicated of things in answer to the question ‘What is it?’, but rather to the question ‘What sort of so-and-so is it?’⁷ That is, genus enters into the ontological essence of the thing, while accidents do not. Difference, similarly, answers the question ‘What sort of so-and-so is it?’, and not ‘What is it?’, but differs from an accident insofar as it enters into composition with the genus to yield the species of a thing (for instance, ‘rational’ answers ‘What sort of animal is it?’), but unlike an accident, it is participated in equally by all members of a species (i.e. in the same degree and at all times), while accidents are not.⁸ Thus, while addition of the accident ‘black’ to ‘animal’ will not yield a unique species, addition of the (specific) difference ‘rational’ to the genus ‘animal’ will yield a unique species – humanity. Thus,

⁷ *Isagoge* 3: 10-11.

⁸ A particularly thorny wrinkle is what Porphyry calls ‘inseparable accidents,’ for example lightness of skin in some Caucasians. To distinguish between these and differentia, Porphyry says, one must appeal to difference of degree, which only accidents will have. So, for instance, while lightness is an inseparable accident of Caucasians, some may still yet be lighter or darker than others, while no such difference of degree can exist for *differentia*, like rationality or animality.

by distinguishing between these four types of common predicates, one can accomplish one of the key goals of Platonic division: presentation of definitions.

This leaves one last predicate: properties. Properties are extremely interesting because of both their close similarities to specific differences, and the importance (and difficulty) of maintaining a coherent distinction from them. A property, Porphyry says, is a predicate which shares a one-to-one correspondence with a certain species. Not even specific difference, Porphyry thinks, shares this characteristic. That is because, while a specific difference, for instance ‘rationality,’ is that which when added to a genus provides a specific essence, it may yet be added to many different genera, thus being shared among many different non-coordinate essences. ‘Rationality,’ for instance is shared by both rational mortal animals (i.e. humans), and rational immortal substances (i.e. gods). Thus, rationality, by itself, cannot be used to identify a unique species; the proximate genus is needed as well.

This is not the case with a property. Properties, Porphyry thinks, are common predicates which can *only* be predicated of one species; for instance, *laughing* can only be predicated of one thing – human beings. Thus Porphyry says that difference and properties both are “present always and in every case” of a species.⁹ Nevertheless, he continues, “proper to differences is the fact that they are often said of several species—...whereas a property [only] applies to one species, the species of which it is a property.”¹⁰ Thus, properties are ‘counterpredicable’ and ‘convert’ with the items of which they are predicated, while specific differences do not; (while all humans are rational, not all rational substances are human).

⁹ *Isagoge* 19: 6-8.

¹⁰ *Isagoge* 19: 10-12.

Porphyry's description of properties is highly significant. It allows, for instance, for an understanding of the commensurability of varying 'divisions' of the same substance, because each serves in a way as a unique marker by which a particular species is distinguished, and hence by which a 'loose' division may be constructed, without losing reference (although it does not satisfy the conditions for strict division, since the divisions are not made on the basis of specific difference). Thus, when Aristotle 'divides' and 'defines' a human being as a "political animal," this perhaps does not conflict with the more proper definition of him as an "animal bearing *logos*," because the latter properly divides and defines him in terms of specific difference, while the former serves to pick out some common property uniquely predicated of humans alone. Hence, a branch of science can be founded upon that unique property, like politics, also perhaps does not run the risk of being ill-defined. Such is also the case with a division of humankind as 'tragic animal' (poetics), 'rhetorical animal' (rhetoric), and 'laughing animal' (humor – had Aristotle written it),.

As such, it is my contention that while properties in this sense, (or what Porphyry calls 'propria' elsewhere),¹¹ can all be used to specifically *identify* the unique set of individuals that constitute a species, they cannot be used in the *definition* of a species. Otherwise, one is left with all of the problems of contemporary analysis of definition. For the divisions 'rational mortal animal,' 'rhetorical land-dwelling herd animal,' and 'laughing bipedal animal' each specifically identify the same kind, humanity. But only the first ought to be taken into consideration when constructing the definition of the species, because the other two, in including species-specific properties like 'rhetorical'

¹¹ *in Cat.* 94,1-4: "A proprium is either what is a property of all the members of a kind, but not of them alone; or of only the members of a kind, but not of all of them; or what belongs to all and only the members of a kind, and this is the strictest sense of the term."

and ‘laughing,’ describe characteristics that *follow* from the essence of the unique kind ‘rational mortal animal,’ rather than disclose the essence itself.¹² As such, by using the distinction between difference and property clarified by Porphyry in the *Isagoge*, it is possible to isolate appropriate definitional divisions from the inappropriate.

But there are also some problems left unresolved in the *Isagoge*. For one, Porphyry does not address the problem of multiple, and potentially mutually exclusive, classificatory schemes based upon specific difference (because it is this division which must be made first, and upon which any further identification of properties unique to the species must depend). Here one faces a problem of priority: ought one to divide substances first by the differentiae of mortal and immortal, and secondarily divide each of these into rational and irrational (so that one is left with a fourfold division), or ought it be the other way around? This becomes an issue when one is attempting to decide relational resemblance between different substances—do humans share a highest common genus with the gods as rational beings, or are they commonly members of the genus of mortal beings with plants and other animals?

To supplement Porphyry’s treatment of the common five predicables in the *Isagoge*, I would like to briefly turn to Boethius’ *Book on Division*. This text, while also presented as an introduction, is not for “those who are altogether uneducated in the art” as was the *Isagoge*. Indeed, John Magee notes that Porphyry’s lost *Commentary on the Sophist* is likely Boethius’ source for much of *De divisione*, so it is not surprising that we

¹² However, there is also the question about the commensurability of other rival divisions that do not make use of properties. Eg., the rival Platonic definition of humans as ‘featherless broad-nailed bipeds’ (Diogenes Laërtius, *Lives of the Philosophers* VI, 40), also makes use of differences and uniquely identify a species – but few it seems would want to concede that this definition also identifies the essence of humanity.

find some detail in Boethius' book that was lacking in Porphyry's short 'introduction'.¹³ I would like to focus upon one problem in particular in which Boethius provides a bit more information. Boethius himself introduces it:

It is not enough to know which differentiae we should adopt in a division unless it is also known how we may unfailingly recognize precisely the [differentiae] to be adopted and the ones to be rejected."¹⁴

Boethius' answer, while complex, seems to include three main suggestions. For a difference to qualify as a specific difference, and thus to enter into the definition of the essence of the substance in question, it must (1) not be actually separable at some time; otherwise it becomes a regularly departing accident, like sitting or walking; (2) not be conceptually separable; otherwise it is a 'consequent' accident, like being snub-nosed or curly-haired; and (3) it must be "conceptually inseparable, the separation of which brings the destruction of the species."¹⁵ These threefold criteria, if consistent, would further clarify the standards by which specific differentiae are to be recognized, hence rendering Plato's original method of division even more systematic and exact.

In closing, I would like to suggest two implications of the NeoPlatonic method of division for contemporary discussion of natural kinds. First, while 'classical essentialism' is often rejected because it is believed to be unable to provide a non-arbitrary account of what qualities are 'essential' to a substance and which are not, close examination shows that Porphyry's and Boethius' account of classification do not fit this picture. The method does not function by identifying one set of qualities as 'essential' and unique to that substance alone, followed by a classification of species and kinds according to the

¹³ Magee, "Prolegomena," xxvii.

¹⁴ *De divisione* 881a15-19.

¹⁵ *De divisione* 881b-d.

presence or absence of such ‘essential’ properties. Rather, a division can be made by means of the addition of a specific difference – a predicate which is *held in common* with other natural kinds – to the other set of predicates of the proximate genus. Thus, in Porphyry’s and Boethius’ schemes of classification, there is designation of one quality as ‘essential’ to the exclusion of others, or ‘unique’ as a designator when it may not actually turn out so. As such, problems of rigid designation, like those brought up by Kripke and Putnam, do not arise for this scheme.

Second, when it comes to another problem for essentialism about natural kinds, that of the potential for a possibly crippling plurality of rival divisions of a single substance, Porphyry’s distinction between property and specific difference may have a special role to play. Properties, while unique predicates of a species on Porphyry’s scheme, do not, however, disclose the essence of a kind. As such, it is possible that they can be used to correctly separate out one species from the next (only humans are *political*, only crows *caw*), but they do not disclose the essence of the species. This suggests that properties may be useful when confronted with a plurality of rival divisions of a single species; one simply would ignore any which utilize properties in their divisions, and select only that which makes use of commonly predicable specific differences. While this might not account eliminate all rival divisions, it would account for some, and the objection of rival divisions for classical essentialism may not be the problem that it seems.