[7] I am indebted here to J. J. C. Smart.

[8] Quine has already shown some tolerance for ideas of this sort in "Propositional Objects", in [3]. Its making a whole language the unit of meaning would be especially congenial, no doubt.

Sortal Predicates

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A number of philosophers have claimed that an important distinction may be drawn between predicates that are "sortals" and predicates that are "non-sortals". In recent years, John Wallace, David Wiggins, and Robert Ackermann, among others, have written specifically on this distinction. It has also been claimed that important doctrines in Aristotle, Frege, Strawson, and Quine turn on the notion of the "sortal predicate". (See [9]: 9 and [11]: 28.) Furthermore, the closely related concept of the "substantival general term" in Geach is believed by some to be of considerable philosophical significance (see [6]).

Wallace ([9]: 12) claims that an interesting and novel form of quantification theory may be obtained by adding a position for sortals into the quantifiers. The suggestion is that this form of quantification theory has important advantages over the standard form. Wallace generously suggests that Geach presented the rudiments of this "sortalized" quantification theory in *Reference and Generality*.

Wiggins suggests that sortals play a decisive role in the logic of identity. He apparently accepts the thesis that every identity statement stands in radical need of supplementation by a sortal. "If anyone tells you $a = b$, you should always ask them 'the same *what* as b?' " ([11]: 1). This thesis also seems to echo a Geachean doctrine.

Ackermann claims that sortals "have important but hitherto unremarked consequences for the notion of lawlikeness" ([1]: 2).

He goes on to suggest, among other things, that the raven paradox may be dealt with by requiring that the antecedent predicate in any instance of a law be a sortal. 'Non-black thing' is not a sortal, and so 'all non-black things are non-ravens' is not a law and so is not confirmed by observations of non-black non-ravens.

In light of the fact that it may have all these applications, the concept of the "sortal predicate" is clearly of philosophical importance. However, 'sortal' is not an expression in ordinary, non-technical use. To determine what it means, we must rely on the criteria of sortalhood proposed and suggested by the philosophers who make use of it. These criteria fall into three main categories:

I. Counting Criteria: These are based on the idea that only a sortal predicate can individuate things in such a way as to make counting possible. Wallace puts this view by saying that sortal predicates "provide a criterion for counting" the things to which they truly apply ([9]: 9). He considers this idea to be part of the "traditional wisdom" about sortals. Ackermann and Strawson seem to accept something like this view, too.

II. Mereological Criteria: These criteria are based on the idea, roughly, that if a sortal predicate truly applies to a thing, then it does not also apply to the parts of the thing. Ackermann, Wallace, and perhaps Frege and Quine have suggested mereological criteria for sortalhood.

III. Essence Criteria: Wiggins claims that "Strawson's notion of a sortal predicate descends directly from Aristotle's notion of *second substance*" ([11]: 28). Wiggins evidently feels that his own use of 'sortal' is in the same tradition ([11]: 65, n. 2). A sortal predicate, on this view, is one that gives a suitably "substantial" answer to a question of the form 'what is x?' A sortal expresses the "nature" or "essence" of the things to which it truly applies.

My purpose in the present paper is to show that the suggested criteria of sortalhood are non-equivalent. What is a sortal on one criterion is not a sortal on others. Since 'sortal' is a technical term, and our only access to its meaning is through the criteria suggested by these philosophers, we are in the unfortunate situation of not being able to tell precisely what it means. It may even be the case that the word 'sortal' is being used in different ways by different philosophers and thus has come to express a number of distinct concepts ambiguously. Until this confusion is cleared up, there is little point in trying to evaluate any substantive thesis stated in terms of sortals.

I

Some of the criteria of sortalhood make use of the idea that sortals are connected in some way with counting. Ackermann says "a sortal predicate can only be used clearly when one can *count* the number of objects to which the predicate applies in an appropriate space, or at least make clear sense of the claim that so many objects to which the predicate applies are present in the space" ([1]: 2). Wallace seems to have a similar point in mind when he says that the best marks of sortalhood "capitalize on the relationship between sortal predicates and counting" ([9]: 9). Strawson also indicates a connection between sortals and counting ([8]: 169).

These remarks suggest a number of criteria for sortals. One of them is:

(Ia) *F* is a sortal predicate iff (E*n*)(E*s*) (*n* is a numerical adjective & *s* names an appropriate space & ⌜there are *n* *F*s in *s*⌝ makes sense).

Criterion (Ia) is very generous. On it, every count noun is apparently a sortal predicate. Thus, (Ia) fails to draw the boundary in the desired way, for sortals are supposed to constitute only a subset of the set of count nouns. 'Red thing', for example, is often cited as a count noun that fails to be a sortal. Surely, however, the sentence 'there are 0 red things in my attic' makes sense. If so, (Ia) tells us that 'red thing' is a sortal. The same is apparently true of every other count noun.

The only interesting class of expressions that will fail to be sortals on (Ia) is the class of expressions that are grammatically incompatible with the criterion. That is, verbs, mass nouns, adjectives, etc. will fail to be sortals on (Ia). But if we restrict ourselves to English count nouns, we will find that the list of sortals is very large indeed. 'Red thing', 'man', 'unicorn', 'round square thing', 'ameba', 'table', 'fraction', 'name', 'part of a perfectly honest man', 'baby', '10-letter name', etc. are all sortals on (Ia).

One way to modify (Ia) is to require that the sentence still make sense even when *n* is a numerical adjective for a number higher than 1. This yields:

(Ib) *F* is a sortal predicate iff (E*n*)(E*s*) (*n* is a numerical adjective for a number higher than 1 & *s* names an appropriate space & ⌜there are *n* *F*s in *s*⌝ makes sense).

On (Ib), the fact that 'there are 0 red things in my attic' makes sense will be irrelevant. In order to show that 'red thing' is a sortal, we'll have to show that even when n is replaced by a higher numeral, ⌜there are n red things in my attic⌝ still makes sense.

The criterion's requirement is not entirely clear. In order to show that 'red thing' is a sortal, do we have to show that some sentence such as 'there are at least six red things in my attic' makes sense, or do we have to show that some sentence such as 'there are exactly six red things in my attic' makes sense? It seems evident to me that both of them make sense, and so the vagueness of (Ib) doesn't make much difference, in this case.

Since there are six red apples in my attic, and since a red apple is a red thing, there are at least six red things in my attic. Therefore, the sentence 'there are at least six red things in my attic' not only makes sense, it expresses a truth.

On the other hand, since many parts of the red apples in my attic are also red things, the total number of red things in my attic surely exceeds six. Thus, 'there are exactly six red things in my attic' is false. But since it is so clearly false, it too must make sense. Thus, no matter how we understand (Ib)'s requirement for sortalhood, 'red thing' seems to pass.

Similar considerations with 'heavy thing', 'interesting thing', 'round square thing', etc. will show, I believe, that (Ib) is just as generous as (Ia).

Ackermann's earlier statement, and one like it in Wallace ([9]: 9), suggest another counting criterion for sortalhood:

> (Ic) F is a sortal predicate iff (Es) (s names an appropriate space & ⌜you can find out how many Fs there are in s by counting Fs⌝ is true).

There are occasions on which one can count tables, men, amebas, etc. and thereby find out how many there are in certain spaces. Thus, 'table', 'man', 'ameba', etc. are all sortals on (Ic).

But counting seems to be less feasible when there is an infinite supply of items in the offing. For example, consider the case of 'fraction'. Counting might play a role in a man's discovery of the fact that there is an infinite supply of fractions in the "space" between 1 and 2. He might start to count and then realize that he won't be able to finish. But it would be misleading to say that he found out how many fractions there are in this "space" by counting fractions. Rather, he did it by reasoning about the results of trying to count. Let us assume that this is one sort of thing that is ruled out by (Ic). So 'fraction' seems to fail to be a sortal on (Ic).

But this result is dubious. If we understand 'appropriate space' differently, counting may become less troublesome. Suppose our "space" is the "space" occupied by 1/2. I think we may be able to count the fractions in this "space" quite easily—there is exactly one.

Obscurity in the meaning of 'appropriate space' makes it unclear whether fraction-counting has to fail, and so it is unclear whether 'fraction' is a sortal or not. Other problems arise in the case of 'unicorn', 'mermaid', and other empty expressions. Some would say that, in light of the fact that there aren't any unicorns, you can't find out how many unicorns there are in any space by counting the unicorns that are there. Rather, you find out how many unicorns there are in this space by realizing that you can't begin to count. Thus, it might be said that 'unicorn' and the other empty expressions fail to be sortals on (Ic).

On the other hand, others might say that there is no problem about counting unicorns. It's just that when you do count, you don't get very far. Your count ends at zero. These people might say that all empty expressions turn out to be sortals on (Ic).

The upshot is that (Ic) is too obscure to be of real value. We can modify it in several ways, among which one is:

> (Id) F is a sortal predicate iff $(s)(s$ names a real space in which there are more than two, but a finite number of, things to which F truly applies $\supset$ ⌜you can find out how many Fs there are in s by counting Fs⌝ is true).

On (Id), 'unicorn' and the other empty expressions turn out to be sortals. This is because there is no space in which there are at least two, but a finite number of, unicorns. Thus, the antecedent of the right side of the criterion is false, and so the right side as a whole is true. Similar considerations with other examples will show, I believe, that every empty predicate is a sortal on (Id). Thus, 'round square thing', 'colorless red thing', 'part of a perfectly honest man', etc. are all sortals. Some of these could be removed by requiring that a sortal predicate be consistent.

Criterion (Id) hardly counts as a significant advance over (Ic). Consider the case of 'red thing' again. Some would say that every red thing has an infinite supply of red parts. Thus, they would say that there is no space occupied by more than two, but a finite number of, red things. If this view is correct, then the antecedent of the right side fails again, and 'red thing' is a sortal.

On the other hand, if there are spaces containing more than two, but a finite number of, red things, then it is not clear why there should be any serious barrier to counting them. In this case, 'red thing' still turns out to be a sortal on (Id). Indeed, the only count nouns that will be non-sortals on (Id) will be really odd ones such as 'chicken that can't be counted'—and this one will be a non-sortal only if there are some spaces that contain a suitable number of chickens that can't be counted.

A completely different approach to the alleged connection between counting and sortals is suggested by Wallace. He says that 'animal' is a non-sortal, and that counting animals is "hopeless". 'Mammal', on the other hand, is a sortal, and it is possible to count mammals. The problem about counting animals, according to Wallace, is that

> ... there are kinds of animals yet to be discovered; these kinds are on the borderline between living and non-living things—a line where criteria just are not clear. When we get to 'mammal', it is clear we have a sortal. You may not know all the kinds of mammals there are, but with care you can tell a suckler when you see one. ([10]: 74.)

It seems that the problem Wallace sees with 'animal' is that it is sufficiently vague that a borderline case might be discovered. When one is discovered, we won't be able to decide whether to count it as another animal or not. But doesn't this problem infect 'man', 'horse', 'chicken', and just about all natural language count nouns? Surely, scientists may someday discover the remains of a creature on the borderline between humanity and monkeyhood. Would this show that counting men is "hopeless", and that 'man' is a non-sortal after all? If so, similar considerations about other predicates would show that the stock of genuine sortals is small indeed.

Thus, in spite of the fact that the literature contains a number of sweeping theses about the connection between sortals and counting, it is not easy to formulate a clear criterion that marks an interesting distinction. On some, such as (Ia), almost all count nouns are sortals. On others, such as the one Wallace seems to have had in mind, very few count nouns, if any, are sortals.

II

There are a number of mereological criteria for sortals, too. Some of these depend on the notion of "splitting", while others depend on the notion of "joining". Others, again, are based on the part-whole relation.

Ackermann puts a version of the thesis this way: "typically, when a sortal predicate applies to an object, the object cannot be divided so as to obtain two objects such that the predicate then applies to both of them" ([1]: 2). Wallace says: "If '*F*' is a sortal predicate, you cannot divide an *F* in two and get two *F*s" ([9]: 9–10). Although Wallace does not give his wholehearted endorsement to this thesis, he does say that it is part of the "traditional wisdom" about sortals. Wallace says that Frege noted this feature of sortals, too. In a widely quoted passage, Frege said:

> The concept 'letters in the word three' isolates the *t* from the *h*, the *h* from the *r*, and so on. The concept 'syllables in the word three' picks out the word as a whole, and as indivisible in the sense that no part of it falls any longer under the same concept. Not all concepts possess this quality. We can, for example, divide up something falling under the concept 'red' into parts in a variety of ways, without the parts thereby ceasing to fall under the same concept 'red'. ([4]: 66.)

Some philosophers who have discussed sortals have derived some of their inspiration from this passage, though it is not clear to me that Frege had anything like sortals in mind when he wrote it.

A criterion of sortalhood suggested by these remarks may be:

(IIa) F is a sortal predicate iff $(x)(y)(z)$ (F truly applies to x & y and z result from splitting $x \supset$ it is not the case that F truly applies both to y and to z).

This criterion has been widely accepted, largely because it makes 'man', 'horse', 'chicken', etc. all sortals, and 'red thing', 'heavy thing', 'rectangular thing' etc. all non-sortals. This apparently coincides with an intuitive concept of sortalhood held by some philosophers.

However, (IIa) yields some other interesting results, some of which may not coincide with anyone's intuitions about sortals. Consider 'ameba'. Amebas can be split (perhaps only by themselves) so as to yield two amebas. Thus, on (IIa), 'ameba' is not a sortal. The same is true of 'cloud', 'geranium plant', and 'worm'. Indeed, 'table', 'rug', 'garden hose', 'pile of stones', 'lump of coal', and a host of others are "splittable" and hence non-sortals on (IIa).

An interesting set of examples can be devised by reflecting on the fact that some names can be split so as to yield two names, and perhaps some sentences can be split so as to yield two sentences.

Among the "splittable" names we have 'Mary Ann Jones' which can be split to yield 'Mary' and 'Ann Jones'—each of these is also a name. Thus 'name' isn't a sortal on (IIa).

On (IIa) all empty expressions, such as 'colorless red thing' and 'green thing in my attic', are sortals. Furthermore, some contrived examples, such as 'red thing that didn't result from splitting a red thing', will also be sortals on (IIa).

A related criterion may be constructed by replacing talk of splitting with talk of joining. Some say that Quine had this in mind when he said, "any sum of parts which are water is water" ([7]: 91). On the other hand, if you join two men so as to make a "sum", this "sum" will not be another man. The distinction may be captured by:

(IIb) F is a sortal predicate iff $(x)(y)(z)$ (F truly applies to x & F truly applies to y & z is the result of joining x and $y \supset$ it is not the case that F truly applies to z).

The results of (IIb) will coincide, to a certain extent, with the results of (IIa). Among expressions that will be sortals on both are: 'man', 'colorless red thing', 'unicorn', and 'red thing formed neither by splitting a red thing nor by joining red things'. Among non-sortals on both will be: 'thing', 'red thing', 'garden hose', 'name', 'table', 'rug', and 'pile of stones'.

But there are also differences between (IIa) and (IIb). For example, consider 'ameba' again. As far as I know, amebas are not created by fusion, but only by fission. Thus, if any two amebas are joined, the result will be a pair of amebas and not a single large ameba. So 'ameba', which was a non-sortal on (IIa), is a sortal on (IIb). Similar results will occur in the case of any expression that applies to a plant that can be propagated by cuttings but not by grafting. 'Geranium', perhaps, is an example of this sort. 'Perfect diamond' may behave in the same way. If you split a perfect diamond, you may get two smaller perfect diamonds, but if you join two perfect diamonds, you will just get two perfect diamonds joined together. Thus, 'perfect diamond', may be a sortal on (IIb), but it isn't on (IIa).

Contrived examples on which (IIa) and (IIb) differ can be devised, too. Consider 'table not formed by joining tables'. This predicate will not apply to anything formed by joining things to which it applied, but it may apply to things formed by splitting something to which it applied. Thus, it is a sortal on (IIb), but it isn't on (IIa).

Finally, there are predicates that some philosophers apparently would consider to be sortals but which fail to be sortals on (IIb). Among these are expressions that happen to apply to "joinable" entities. 'Table' is a good example. In some cases, as at a banquet, tables may be joined so as to make a larger table. Thus, the result of joining tables isn't always a non-table, and so 'table' is a non-sortal on (IIb). Corresponding reasoning may be applied in the case of 'name', 'sentence', 'garden hose', 'set', and a host of others. Notice, however, that this result will not be obtained in the case of '10-letter name', '5-foot garden hose', etc. These will be sortals on (IIb).

Another mereological criterion may be formed by replacing talk of splitting and joining with talk of "having parts":

> (IIc) F is a sortal predicate iff $(x)(y)(z)$ (F truly applies to x & y is a part of x & z is a part of $x \supset$ it is not the the case that F truly applies both to y and to z).

Wallace may have had something like (IIc) in mind when he said: "if F is a sortal predicate, then no F has two parts that are Fs" ([9]: 10). Criterion (IIc) is also foreshadowed in the quote from Frege.

As on (IIa) and (IIb), all empty expressions are judged to be sortals on (IIc), so 'colorless red thing' is still a sortal. Also, 'man' and the like remain sortals. On the other hand, 'thing', 'red thing' 'heavy thing', etc. are all non-sortals on (IIc), since there are things whose parts are also things, and so on.

Wiggins gives an example that may prove interesting for (IIc). He says that some crowns have parts that are crowns ([11]: 40). Hence, 'crown' is a non-sortal on (IIc). Equally, 'name', 'table', 'sequence', etc. all are non-sortals. But the results of (IIc) coincide neither with those of (IIa) nor with those of (IIb). 'Table that is not part of a table' is a sortal on (IIc) because no part of such a thing can be such a thing too. But this expression fails to be a sortal on the other two criteria. It isn't a sortal on (IIa) because one may split such a table and get two such tables. It isn't a sortal on (IIc) because one might join two such tables and get one as the result.

Some philosophers would undoubtedly hold that (IIc) is defective because on it 'colorless red thing' is a sortal. These philosophers apparently have some intuitive concept of sortalhood according to which 'colorless red thing' is not a sortal. We can modify (IIc) so as to try to get closer to this intuition:

(IId) F is a sortal predicate iff
(i) $(\mathrm{E}x)$ (F truly applies to x), and
(ii) $(x)(y)(z)$ (F truly applies to x & y is part of x & z is part of $x \supset$ it is not the case that F truly applies to y or to z).

On (IId), 'colorless red thing' isn't a sortal, since there are no true instances of this predicate. An interesting consequence of (IId) is that it makes all empty expressions into non-sortals. Thus, 'unicorn', 'perfectly honest man', etc. all are non-sortals on (IId).

Another way to alter the mereological criterion is to add modal operators. Perhaps some will think that we can get closer to the intuition in question by writing:

(IIe) F is a sortal predicate iff
(i) $\Diamond$ $(\mathrm{E}x)$ (F truly applies to x), and
(ii) $\Box(x)(y)(z)$ (F truly applies to x & y is a part of x & z is a part of $x \supset$ it is not the case that F truly applies to y or to z).

I suspect, however, that on (IIe) very few predicates will be judged to be sortals. Even some of the standard examples will fail. Consider 'house'. From a logical point of view, it is surely possible for there to be a house that has smaller houses as parts. Imagine a lot of bird houses nailed together so as to make a house for people. Thus, when we put 'house' in (IIe), the right side comes out false, and it tells us that 'house' is a non-sortal. More bizarre examples come to mind, but I hesitate to mention them. This one example, I hope, suffices to bring out the relevant feature of (IIe). Very few standard count nouns will be sortals on (IIe).

A final mereological criterion should be mentioned, since it seems to go a long way toward capturing one of the intuitions about sortalhood that some philosophers apparently have entertained.

(IIf) F is a sortal predicate iff $(x)(y)$ (F truly applies to both x and y & x is a part of $y \supset$ $(\mathrm{E}z)$ (z is a part of y & x is a part of z & it is not the case that F truly applies to z).[1]

Predicates such as 'man', 'horse', and 'chicken' will be sortals on (IIf), since no man has a part that's a man, etc. Thus, the antecedent of the right side of the criterion will be false in all such cases, and the right side as a whole will be true.

In cases in which we do have "parts of the same kind", (IIf) will separate 'thing bigger than a breadbox', 'material thing', and the like into the non-sortal category while leaving 'sentence', 'name', and some others in the sortal category. This seems to coincide with a certain intuition about sortalhood, and so it may be worth the trouble to see how it works.

'Thing bigger than a breadbox' is a non-sortal on (IIf), since if we have two things, one a part of the other, and both bigger than a breadbox, then there can't be some third thing, a part of the bigger, and containing the smaller as part, but which is not bigger than a breadbox. For if one of its parts is bigger than a breadbox, it must be, too.

'Name', on the other hand, is a sortal on (IIf), even though it fails to be a sortal on most other mereological criteria. For if we have two names, one a part of the other, then we must have something that is a part of the larger name and of which the smaller name is a part, but which is not itself a name. For example, if 'Mary Ann Jones' is the larger name, and 'Mary' is the smaller name, then we have the non-names 'Mary An' and 'Mary Ann Jo'.

But (IIf) generates some odd results, too. These don't seem to coincide with any interesting intuition about sortalhood. For example, 'square area', which may have the look of a non-sortal, is a sortal on (IIf). Equally, all empty expressions are sortals, and some of these will go into the wrong category, as well. Some disjunctive predicates turn out to be sortals, too. For example, 'thing weighing exactly 10 lbs. or exactly 20 lbs.'

The upshot is that the literature contains suggestions of several different mereological criteria for sortalhood. None gives the same results as any other. Furthermore, there seems to be no interesting connection between any of the mereological criteria and any of the counting criteria. Finally, it seems to me that none of these criteria provides a list of predicates uniformly having some further interesting property—but that's another matter.

III

A final approach to sortalhood is based on an alleged connection between sortals and "natural kind predicates", "substance predicates", and "restrictions" on such predicates. Wallace suggested that sortal predicates of a certain "basic kind" are "predicates with respect to which a thing cannot change" ([10]: 74). Wallace did not maintain that all sortals are of this basic kind,[2] but he did say:

> It seems to be true, however, that for every sortal predicate 'S' there is a natural kind predicate 'K' that is a sortal such that every S is a K. That is, sortal predicates that are not natural kind predicates seem to be obtained by restriction from natural kinds that are sortals. ([10]: 75.)

The better part of a page is devoted to explaining what is meant by 'restriction'. Wallace suggests that some instances of restriction are "explicit", and he cites 'white horse' and 'tall man' as examples. Presumably, 'white horse' is an explicit restriction of 'horse', because 'horse' appears in 'white horse', and the latter predicate truly applies to a thing only if 'horse' does, too. 'Horse' is a "natural kind predicate", but to investigate why Wallace thinks so would carry us far afield.

Other instances of restriction are "implicit". Wallace suggests that 'singer' means the same as 'person who sings'. Since 'person who sings' explicitly restricts 'person', 'singer' implicitly restricts 'person'. Similarly, 'farmer' means the same as 'man who farms' and so implicitly restricts 'man'. It isn't clear to me that the examples are quite right (surely a canary, as well as a person, might be a singer), but the idea is fairly clear. A predicate F implicitly restricts a predicate H if and only if there is a predicate G such that F means the same as G, and G explicitly restricts H.

So Wallace's thesis seems to be:

(IIIa) F is a sortal predicate iff either
  (i) F is a natural kind sortal, or
  (ii) F is an explicit restriction of a natural kind sortal, or
  (iii) F is an implicit restriction of a natural kind sortal.

For a number of reasons, (IIIa) is of little value to us here. For one, it depends heavily on the notion of "natural kinds". This concept is rather obscure and extremely controversial. Another problem with (IIIa) is that it may be circular. Presumably, we must determine, among other things, that a predicate is a sortal in order to determine that it is a "natural kind sortal". Without some independent criterion of sortalhood, I see no way of doing this. Thus, even if (IIIa) is entirely true, it apparently does not provide a way of distinguishing the sortals from the non-sortals.

A related but perhaps more helpful intuition was expressed by Wiggins ([11]: 28). He first specified a special sort of question, which we can call a "substantial question". This would be a question of the form 'what is *x*?'. A suitable answer to a question of this kind might be '*x* is a man' or '*x* is a boy' or '*x* is a pine tree'. But it would never do to answer with '*x* is a red thing' or '*x* is a tall thing with needles'. The trouble with the unsuitable answers is that, while they may say what *x* is like, they do not say what *x* is. That is, in these answers we mention "accidents" of the things in question, but not "essences" or even "restrictions of essences". A suitable answer to a substantial question must mention either a feature of a thing with respect to which it cannot change, or else a restriction of such a feature. In some such way, it will tell "what it is".

In a passage of obvious importance, Wiggins says ". . . a sortal predicate is by definition no more than the sort of predicate which answers this kind of question" ([11]: 27). Thus, his view seems to be captured by this criterion of sortalhood:

> (IIIb) *F* is a sortal predicate iff *F* would suitably figure in an answer to a substantial question.

There is considerable disagreement about which predicates will, in fact, suffice to answer substantial questions. Thus, there will be disagreement about which predicates are sortals on (IIIb) and which are not. I suspect, however, that any well entrenched expression for a biological species would generally be considered to be acceptable. Thus, 'man', 'horse', 'ameba', and 'geranium' would probably be sortals on (IIIb).

Equally, there may be wide agreement about expressions such as 'interesting thing', 'red thing', and 'immature organism'. These would not be sortals on (IIIb). But if we go far beyond these few examples, we will run into disputed territory. Is 'table' a sortal on (IIIb)? What shall we say about 'doctor', 'name', 'unicorn', 'typewriter', etc.? Here, our intuitions will undoubtedly diverge. Thus, the results of (IIIb) are fairly obscure.

But what troubles me most about (IIIb) is not its obscurity. Rather, it is the fact that (IIIb) seems to be so utterly unrelated to the other marks of sortalhood. What reason is there to think that predicates that are sortals on (IIIb) will also be sortals on other criteria? Surely, if there is any important connection, it needs to be brought out.

Compare, for example, the results of (IIIb) with those of (IIa). 'Flatworm' is pretty clearly a sortal on (IIIb), but since flatworms can be split, yielding two flatworms, this expression is not a sortal on (IIa). Similarly for 'ameba', 'geranium', etc. If 'table', 'rug', 'garden hose', etc. are sortals on (IIIb), then they provide further prima facie cases of divergence between (IIIb) and (IIa).

In the other direction, 'mother', 'winner of the Kentucky Derby', 'thing that cost me five dollars', etc. seem to be sortals on (IIa) but are at best doubtful cases on (IIIb).

To multiply examples here is, I am afraid, to multiply sources of possible disagreement. My point is that no good reason has been given to suspect that the list of sortals generated by (IIIb) will coincide with the list of sortals generated by any of the other criteria. Indeed, it appears that the basic intuition behind the essence criterion is completely independent of the intuitions behind the other criteria.

V

In this paper I have not attempted to evaluate any of the interesting substantive theses about sortals mentioned at the outset. Nor have I attempted to show that the various suggested criteria fail to isolate the set of "real sortals". Rather, my purpose has been to show that the various suggested criteria of sortalhood are non-equivalent. They mark off distinct sets of predicates.

If 'sortal' were a well-established expression in ordinary usage, this confusion would be far less serious. It would show only that agreement had not yet been reached on the analysis of the meaning of the term. It could be claimed that in spite of this, competent speakers of English have a "pre-analytic grasp" of its meaning. But 'sortal' is not an expression of this kind. It is a technical term brought in to do philosophical work. In order to gain an understanding of its meaning, we must rely on the criteria suggested by those who introduce it. Since these criteria yield such divergent results and seem, at least in some cases, to be based on entirely distinct intuitions, it appears to me that we simply do not know what 'sortal' is supposed to mean.

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Notes

[1] (IIf) is based on a criterion devised by Edmund Gettier.
[2] This idea seems to be quite close to one developed in [5].

*The Irreducibility of 'Meaning'**

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Students of philosophy are deeply indebted to any exposition of the 'use' analysis of meaning precise enough to allow the reader to assess what is at stake. It is thus no small merit in Professor Alston's paper "Meaning and Use" that he rejects the view that the sense of 'use' required for such a theory is the ordinary sense, and unproblematic at that ([1]: 143–5), and goes on to introduce a technical sense of 'use' which is supposed to be adequate for the task on hand ([1]: 148). The present paper investigates the plausibility of a 'use' analysis of meaning in Alston's sense of 'use' and shows why any such analysis must be circular. This conclusion then issues in a radical questioning of the place of theories of

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