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Abstract

Objects are contrasted with properties, by means of examples, non-linguistic hallmarks, and linguistic correspondents. Hard cases of objects which are in some respects akin to properties are considered, but the idea that properties simply are another kind of object is rejected. Finally, properties are seen to be interchangeable with a certain kind of function.

One of the most fundamental metaphysical distinctions is that between objects and properties. Given its depth and importance, it's perhaps unsurprising that, though the distinction can be given in a canonical form, it also admits of some puzzling complexities.

By way of a first pass, let's consider some examples of objects and of properties, and try to extract some hallmarks – linguistic and otherwise – of each. Examples of objects include my cat, you, the tree outside my window, and the planet Earth. These four are all physical objects. There are mental objects as well -- which, depending upon whether the mental reduces to the physical, may or may not be a sub-variety of physical objects. Mental objects include: my wish to write a book, the pain I felt just now, my dream last night, etc. So much for examples. Some hallmarks of objects include that they

are individual things, which things (at least in the simple cases) have a specific location in space and time. What's more, objects can be counted. And, in counting, one can always ask: Is this object the same individual as that one, so that it should be counted just once, or are there two individuals here? (E.g., if Samuel Clemens is the same person as Mark Twain, then when Clemens is alone in the room, there aren't two individual people there: Clemens *and* Twain. But if Bill Clinton and Tony Blair are the sole people in the room, there are two people therein.)

Examples of properties – also called ‘attributes’, or ‘qualities’ -- include being red, being from Canada, being painful, knowing Charles Darwin personally, weighing exactly sixteen trillion kilograms, and having belonged to Abe Lincoln. Hallmarks of properties include *not* being individual, but rather being general; and being located not in one place, but at various locations at once, or at none. Thus the property of being from Canada is instantiated in many objects, in many places; and it might be that the property of knowing Charles Darwin personally is instantiated by no object at all these days. As for counting, while one can count *instantiations* of being red – i.e., count how many red objects there are – it doesn't really make sense to count being red itself. Another hallmark of properties, as opposed to objects, is that a given property typically has contrary or opposite properties. For instance, being green is contrary to being red, being from Spain is contrary to being from Canada, being pleasurable is contrary to being painful, etc. (Contrast objects: What is the contrary of Abe Lincoln? What object do you get when you negate *him*? Or again, what do you get when you negate my window? These questions don't even seem to make sense.)

There are also *linguistic* hallmarks of the object versus property divide. The linguistic correlates of objects are proper names ('Rob'), noun phrases ('the planet Earth'), pronouns ('me', 'he', 'she', 'it'), and demonstratives (like 'this' and 'that'). The linguistic correlates of properties, by contrast, are adjectives ('red'), verb phrases ('weighs sixteen trillion kilograms', 'is from Canada') and, as above, gerundives ('belonging to me'). [In formal logic, the divide corresponds to that between constants and variables (often symbolized by lower case letters from the beginning of the alphabet for constants, and lower case letters from the end of the alphabet for variables: constant 'a' or variable 'x') on the one hand and predicates (often symbolized by capital letters from the middle of the alphabet: 'F', 'G') on the other.] Another linguistic hallmark is this. If, following Peter Strawson, we think about the different actions typically performed in speaking a sentence, for instance in saying 'That cat weighs 18 pounds', we may note that 'That cat' is used for one kind of job, while 'weighs 18 pounds' is used for a quite different job. 'That cat' is used to *refer to*, or *talk about*, the cat. In contrast, 'weighs 18 pounds' is used to *attribute* something of the cat, to *say of* it that it weighs 18 pounds. A final linguistic hallmark, then, is that in speaking we refer to objects, but we attribute properties.

So much for the first pass at objects versus properties. The divide gets muddy, however, when we leave the canonical examples. That's because there are things which are object-like in some respects, but property-like in others. These hard-case objects come in at least two varieties: *abstracta* like numbers, and *kinds* such as gold and horse. One obvious problem with such objects concerns their location. Being abstract, the square root of

seven doesn't seem to have any location. The same holds for kinds: gold has multiple locations. Moreover, there are contraries to gold: silver, uranium, etc. Yet abstracta and kinds are object-like as well. Gold *has* certain properties: it boils at 2966 °C, and melts at 1063 °C. So, it isn't itself a property. And gold, along with the square root of seven, is denoted by a name; and, in speaking, such things are referred to, not attributed. So, kinds and abstracta seem to exhibit some of the hallmarks of objects, and some of the hallmarks of properties. At bottom, the difficulty is that such objects have instances, rather than merely being instances. To take another case, consider the novel *War and Peace*. Some will say that it's another abstract object: it itself has no location, though its instances (i.e., copies of the book) do. But one could also take *War and Peace* to be like gold, which is located in many places at once. Whichever way one goes, it too has instances, rather than merely being an instance; and so it does not have one unique location. In sum, we seem to have:

Objects		Properties	
Objects which <i>are</i> instances		Objects which <i>have</i> instances	
Kinds		Abstracta	

One last hard case. It seems that we can form names and descriptions associated with properties. Thus consider 'the property of being red'. This description has all the linguistic hallmarks of an object, both in terms of its form, and the job it is used for. More than that, it has some of the non-linguistic hallmarks too. We can ask whether what 'the property of being red' stands for is identical to what 'the property of being green' stands

for. (Obviously the answer is ‘no’.) We can count such things. And so on. What one typically says is that ‘the property of being red’, ‘that property’, ‘my favorite color’ and so on stand for objects which are associated with properties, but do not themselves stand for properties. (Of course, this leads to the odd result that ‘The property of being red is not a property’ is not actually false, since according to view under consideration, the first five words of this sentence *stand for an object*; so the sentence says of this object that it’s a property -- which it isn’t! See Frege (1891, 1892) for detailed discussion.)

One could continue pursuing such complexities at enormous length. For present purposes, it’s enough to notice that there seem to be various kinds of objects. And several of them are property-like in certain respects. It is, in part, because of the diversity of objects, and their affinities to properties, that it’s hard ultimately to distinguish objects from properties.

In light of these complexities, one might wonder: why are properties required at all? Why not just have yet another variety of object, namely those objects which don’t merely have instances (as with kinds and abstracta), but which can actually apply to other objects? Indeed, why not have the world be exhausted by its objects? Thus, on this suggestions, being from Canada would simply *be* a fourth kind of object beyond instances, kinds and abstracta. In response, I want to give one reason why one seemingly cannot do away with the object/property distinction altogether, reducing everything to objects. It’s a reason which goes back to Antiquity, and it has to do with combining in predication.

Patently, some objects can’t combine predicationally at all: Rob and the tree can’t be fused together, into a complex fact. At best they can be combined by smashing them

together, or putting one inside the other, or some such. But, so the “properties are objects” idea goes, there are some objects which can combine in predication: there are certain objects which apply to others. Take Rob Stainton and being Canadian, understood, as per the proposal, as two different kinds of objects. These “objects” combine together, in predication, in the sense that the former exhibits the latter: I am Canadian. The difficulty, however, is this. Not all objects actually so combine, even when one of them is of the supposed “applying kind”: for instance, Rob Stainton doesn’t in fact combine with being Algerian, and George Bush doesn’t combine with being Canadian. So, what holds the two types of supposed objects together, when the “applying object” really does combine with the instance one? A natural thought is that the relation “exhibiting” puts together the objects which really go together, and not the others: “exhibiting” fuses Rob with being from Canada, but it does not fuse Rob with being from Algeria. However, if *all* things are objects, then relations – including “exhibiting” -- are objects too. And if, as we’ve been seeing, objects need something to put them together to distinguish those where the combination does really happen from those where it doesn’t, “exhibiting” needs something to put *it* together with, e.g., Rob and being Canadian. What, then, puts together these three objects in predication, such that it doesn’t fuse “exhibiting”, Rob and being Algerian? We are faced with a choice: either there is something that is not an object, and which puts objects together in predication, so that not everything is an object, or there is an infinite regress. Since the latter is absurd, we conclude that some things aren’t objects. In particular, properties are non-objects, in the sense that they go together with objects in a way that two objects cannot: nothing is

required to “fuse” an object with a property. That, it is often said, is why we need some kind of object/property divide, even if it is hard to lay out.

An interesting upshot, of course, is that not all that is, is an object. Even more interesting, if anything we can refer to is an object, then if properties are not objects, we simply cannot refer to them. We can’t talk about them, no matter how hard we try. At best we can refer to their associated surrogates, as in the previous example of ‘the property of being red’ -- which surrogates are objects, not actually properties.

Let’s turn now to the relationship between properties and functions. What I hope to explain is how properties are, in a certain sense, equivalent to a peculiar kind of function: namely, a function whose output is a truth value. (See the works by Frege cited below for more.) Now, mathematical functions are familiar: they take numerical inputs, and yield numerical outputs. For instance, (1) is a function which takes zero as input and yields four as output, and takes one and yields nine as output, and so on.

$$1. \quad y = (x+2)^2$$

But the notion of function can be generalized so that the inputs are not just from numbers, but from objects of all kinds. To understand the broadening of the inputs, consider (2), which is a function which takes an individual as input, and yields his or her father as output.

$$2. \quad y = \text{the father of } x$$

Taking me as input, the output is Keith Stainton. One could also have a function whose inputs were countries, and whose output was the language most widely spoken in that country. Taking Canada as input, this function would output English. It should be clear

that, for any kind of object, we can cook up a function that it can be input into: trees, windows, universities, etc.

So, inputs to functions can be generalized. Moreover, their outputs needn't be numbers either. Consider, in particular, a function whose output is either TRUE or FALSE. (Or 'Yes'/'No', or 1/0, or any other pair of binary values.) Specifically, consider a function which outputs TRUE if the object input meets the condition specified, and which outputs FALSE if it doesn't. For instance, consider the function such that its output is TRUE if x is from Canada, and its output is FALSE otherwise. This is the key point: such functions are interchangeable with the properties. To the property of being from Canada there corresponds f , the function from objects to truth values, such that f outputs TRUE when the object is from Canada, and it outputs FALSE otherwise. (Gottlob Frege called such peculiar functions 'concepts'; Bertrand Russell called them propositional functions.)

We saw above that objects and properties have different linguistic correlates. Given that propositional functions are interchangeable with properties, it is unsurprising that a similar point applies to them. Specifically, the correlate of a verb phrase or adjective will be a function from an object to a truth value. (In terms of Montague grammar, the correlate of objects will be expressions of semantic type $\langle e \rangle$, while the correlate of (first-order) functions will be expressions of semantic type $\langle e, t \rangle$.) And, as before, puzzles arise about whether functions are really so different from objects. At first the distinction is clear: objects are the inputs and outputs, while functions operate on them. But it seems like we can objectify functions, and talk about them. This I did above: I talked about the function from things that are from Canada to TRUE. Put another way,

there are functions whose inputs are functions, and functions whose outputs are functions. What's more, there are alleged objects, such as the kind gold, which seem to be true of instances, hence they could be taken to be a propositional function, rather than as objects. But then are they just another kind of object? The answer, here again, is that there can't only be objects: we'd need something to combine "ordinary objects" with "function objects" which wasn't itself of either kind, or we'd have a regress. What goes for properties, goes for propositional functions: there may be various kinds of objects, some of which exhibit function-like characteristics, but we cannot do away with genuine functions altogether.

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Keywords

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