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A Puzzle about Properties

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The paper argues that the assumption that there are property designators, together with two theoretically innocent claims, leads to a puzzle, whose solution requires us to reject the position that all (canonical) property designators are rigid. But if we deny that all (canonical) property designators are rigid, then the natural next step is to reject an abundant conception of properties and with it the suggestion that properties are the semantic values of predicates.

I. The Puzzle

It is sometimes argued that properties are the semantic values of both property designators and predicates, the only difference being a difference between the relation between predicates and their semantic values and that between property designators and theirs. Predicates ascribe properties, whereas property designators designate them.[1] For example, 'is human' ascribes the property of being human, and 'the property of being human' designates that property. This paper is dedicated to showing that this view is less than obviously true. I argue that judging on the basis of the truth-values of identity statements involving property designators, not every (canonical) property designator is rigid. But if we deny that every (canonical) property designator is rigid, then the natural next step is to reject an abundant conception of properties and with it the suggestion that properties are the semantic values of predicates.

We begin with a puzzle. The puzzle turns on the innocent assumption that there are (canonical) property designators, that is, nominalizations that purport to designate properties, and so designate properties if they designate anything at all. Four sorts of nominalizations are commonly thought to designate properties, namely, derived substantives like 'honesty' and 'beauty', gerundive nominals like 'being honest' and 'being beautiful', infinitive constructions like 'to be honest' and 'to

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[1]   Crispin Wright, "Why Frege does not deserve his grain of salt: a note on the paradox of 'the concept *horse*' and the ascription of *Bedeutungen* to predicates", *Grazer Philosophische Studien* 55 (1998), 239-63. I shall follow Wright in taking 'designation' and its cognates to be semantically neutral between denotation and reference.

be beautiful', and appositive expansions like 'the property of being honest', 'the property of honesty' and 'the color purple'. Some expressions (canonical or not) seem to function both as property designators and as predicates. For example, 'red' seems to function semantically as a noun phrase in 'red is a color' and as an adjective in 'my shirt is red'. Likewise, 'the color of the sky' seems to function semantically as a noun phrase in 'the color of the sky is a color' and as an adjectival phrase in 'my shirt is the color of the sky'.[2]

The puzzle turns on two further theoretically innocent claims, namely:

(A) If the 'to be' verb is flanked by noun phrases, it expresses the relation of identity

(B) If d is a property designator and d' is the corresponding adjectival phrase, then d and 'being d''' will be intersubstitutable *salva veritate*, at least in extensional contexts,[3]

where an extensional context is one in which truth-value is determined by the components' extension. Given these assumptions, the following two sentences should be materially equivalent:[4]

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2   See "Nathan Salmon, "Are General Terms Rigid", *Linguistics and Philosophy 28* (2005): 117-34.

3   This is a restricted version of Wright's reference principle. See "Why Frege does not deserve his grain of salt". For the substitution to go through, 'd ' is required to type-shift to the type of an adjective phrase when it occurs after 'being'. So, we can move from 'red' (the noun) to 'being red' and from 'John's favorite color' to 'being John's favorite color' because 'red' and 'John's favorite color' are capable of type shifting to the type of an adjective (i.e., the type of 'red' and 'John's favorite color' in 'my shirt is red' or 'my shirt is John's favorite color'). Some NPs cannot type-shift in this way. 'The virtue John favors most' and 'Wisdom', for example, cannot. In such cases the mentioned substitution may not preserve grammaticality. But when it does preserve grammaticality, it will also preserve truth-value. For discussion, see also Scott Soames, *Beyond Rigidity: the Unfinished Semantic Agenda of Naming and Necessity*, Oxford: Oxford University Press, 2002, "Nathan Salmon, "Are General Terms Rigid", Robert May, "Comments on Nathan Salmon "Are General Terms Rigid", Princeton Semantics Workshop, 17 May 2003, and Bernhard Linsky, "General Terms as Rigid Designators", *Philosophical Studies* 128 (2006): 655-667.

4   Philipp Keller discusses similar pairs of sentences in "How to tell Universals from Particulars", manuscript, 2003. In the original version of my paper I was focusing on 'the property designated by "red" ' and 'the property designated by "John's favorite color" '. But, as Benjamin Schnieder, Matt McGrath and Jim Stone pointed out to me, no one wants to say that these designators are canonical. Certainly they don't. And neither do I. So it is better to run the puzzle with 'the property of being red' and 'the property of being John's favorite color'. Thanks also to Ernest Sosa for bringing the issue to my attention.

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(1) Red is John's favorite color.

(2) *Being red* is identical to *being John's favorite color*.

Yet this does not seem to be the case. It seems that (1) could be true. But (2) seems false. For, prima facie at least, 'being red' denotes the property of being red, and 'being John's favorite color' denotes a distinct property, viz. the property of being John's favorite color. Thus, it seems false that the property designated by 'being red' is identical to the property designated by 'being John's favorite color'.

II. How the Puzzle Can't Be Solved

There are several things one might do to avoid, or explain away, this puzzle. One is to deny assumption (A). Arguably, definite descriptions occurring in typical predicative position are predicates. The 'is' in (1), then, is not the 'is' of identity, but the 'is' of predication. However, while this move does away with the puzzle as actually stated, it does not get to the heart of the matter. For one thing, if we transpose 'red' and 'John's favorite color', 'John's favorite color' does not occur in predicative position. Yet we would still be able to infer an apparently false claim from an apparently true claim, namely, '*being John's favorite color* is identical to *being red*'. For another, whether 'is' is the 'is' of identity or the 'is' of predication makes no truth-conditional difference.[5] Suppose definite descriptions semantically involve uniqueness. Then the predicate 'the F' is true of a just in case 'F' is true of a and of nothing else. So, 'the F' is true of a just in case a is identical to the only thing that is F.

There are, familiarly, other readings of 'is' besides identity and predication. Arguably, 'is' sometimes means *implies* or *involves*, as in 'to cross the street here is to break the laws'.[6] But the 'is' in (1) is not the 'is' of implication. For it makes no sense to say that red involves/implies John's favorite color. Arguably, 'is' also has a possessive reading. If, for example, 'her dress is the color of the sky' makes sense, and 'the color of the sky' is a noun phrase, then the 'is' cannot be interpreted as the 'is' of identity or the 'is' of predication.[7] If it were

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[5] See Delia Graff, "Descriptions as Predicates", *Philosophical Studies* 102 (2001, 1-42), p. 10.

[6] See Benjamin Sebastian Schnieder, "Property Designators, Predicates, and Rigidity", *Philosophical Studies* 122 (2005), 227-241, p. 231.

[7] It is in fact more plausible to suppose that 'the color of the sky' can type-shift from the quantificational type to the adjectival type. Cf. Barbara Partee, "Noun Phrase Interpretation and Type-Shifting Principles" in *Compositionality in Formal Semantics* (Oxford: Blackwell, 2004), 203-230, p. 220.

interpreted as meaning *is identical to*, then we would get the wrong truth-conditions. And since it makes no difference to the truth-conditions of the sentence whether 'is' is interpreted as the 'is' of predication or the 'is' of identity, a predicative interpretation would give us the wrong truth-conditions as well. However, consenting to a possessive reading of 'is' is to no avail, for the 'is' in (1) clearly cannot be interpreted as meaning *has*.

Another thing one might do is deny assumption (B) on the grounds that substitution fails in contexts such as 'scarlet red is Little John's favorite color' and 'this color is called "red"'.[8] But the assumption that substitution fails in such contexts is incorrect. In the first context 'red' and 'John's favorite color' are parts of property designators but are not themselves property designators. In the second context 'red' is mentioned, not used, and hence it does not function as a property designator.

A third thing one might say is that, owing to the rigidity of 'being red' and 'being John's favorite color' but non-rigidity of 'John's favorite color', (B) is false.[9] This suggestion follows naturally from what we might call the 'standard view of property designators'.[10] On this view, all (canonical) property designators are rigid, owing to the abundant nature of properties.[11] In the framework of possible worlds, for example, properties are sometimes represented as functions from possible worlds to extensions.[12] On this view, *being John's favorite color* determines a function that assigns the set of red objects at one index, the set of blue objects at another, and so on. Because *any* function from

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[8]   Examples like these can be found in Philipp Keller, "How to tell Universals from Particulars", Alex Oliver, "The Reference Principle", *Analysis* 65 (2005), 177-186, and also Stephen Schiffer, *The Things We Mean* (Oxford: Oxford University Press, 2003), p. 93.

[9]   One might also argue that (B) infringes upon Leibniz's Law. For discussion and a convincing reply, see B. Schnieder, 2006. " 'By Leibniz's Law': Remarks on a Fallacy", *Philosophical Quarterly* 56: 39-54.

[10] Supporters of this view and/or a related thesis for kind terms include: Monte Cook, "If 'Cat' is a Rigid Designator, What Does it Designate?", *Philosophical Studies* 37 (1980), 61-64, Daniele Macbeth, "Names, Natural Kind Terms, and Rigid Designation", *Philosophical Studies* 79 (1995), 259-81, Stephen P. Schwartz, "Kinds, General Terms, and Rigidity: a Reply to Laporte (2000)", *Philosophical Studies* 109 (2002), 265-77, Philipp Keller, "How to tell Universals from Particulars", Peter van Inwagen, "A Theory of Properties", *Oxford Studies in Metaphysics* 1 (2004), ed. Dean Zimmerman, 107-38, and Schnieder, "Property Designators".

[11] A designator is rigid iff it designates the same entity with respect to every world in which that entity exists.

[12] Or if one adopts David Lewis' framework, then a property is a set of all its instances throughout the worlds. See *On the Plurality of Worlds*, (Oxford: Basil Blackwell, 1986), 50-69.

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indices to extensions is a legitimate representation of a property within the standard framework of possible world semantics,[13] property designators may be viewed as rigid within that framework.

One may, of course, question the usefulness and metaphysical significance of an analysis of properties within the framework of possible world semantics. But there are other arguments to the same conclusion which do not rest on this sort of analysis. If a property designator is non-rigid, it designates different properties in different possible worlds. For example, the property designator 'being the color of ripe tomatoes' designates redness in the actual world, but in other possible worlds it will designate different properties. But, it may be argued, there are several good reasons to reject this latter view.[14]

First, the property designated by 'being the color of ripe tomatoes' is a relational property. Whatever has it has it in virtue of standing in the relation of *sameness of color* to ripe tomatoes. Redness, on the other hand, is not a relational property.

Second, the property designated by 'being the color of ripe tomatoes' is a property a thing has in virtue of standing in the relation of *sameness of color* to ripe tomatoes. So, it has it *in virtue of* being red, but it is not red in virtue of being red.

Third, my brown shoes lack the property designated by 'being the color of ripe tomatoes', but they would have had it while my red shirt would not if ripe tomatoes had been brown. But then there is a property, viz. that designated by 'being the color of ripe tomatoes', which only my shirt has but which my shoes would have had. But it cannot be the property of being red, for my shoes would *not* have been red in those circumstances.

Fourth, Socrates could have been more famous for his piety or courage than his wisdom. So, whoever is prepared to say that there are non-rigid property designators should be prepared to say that 'being the virtue that Socrates was most famous for' is non-rigid. Yet if 'being the virtue that Socrates was most famous for' (non-rigidly) designates

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[13]   I shall speak of functions as representing properties rather than as being properties and in that way leave open the question about their ontological status. For discussion of the abundant view of properties, see Matthew McGrath "Propositions", *The Stanford Encyclopedia of Philosophy* (Winter 2006 Edition), Edward N. Zalta (ed.), forthcoming URL = < http://plato.stanford.edu/archives/win2006/entries/propositions/ >.

[14]   Schnieder, "Property Designators, Predicates, and Rigidity", pp. 232-5. Schnieder formulates his arguments in terms of property designators like 'the property of having the color of ripe tomatoes', 'to have the color of ripe tomatoes' and 'to be the virtue that Socrates was most famous for'. He accepts the following principle: 'being F = the property x such that $\Box \forall y(y$ has $x \leftrightarrow y$ is $F)$' and uses it to explain why he thinks property designators of the form 'being F' are rigid (p. 237).

wisdom, the following sentence is false, despite initial appearances to the contrary:

> (3) Being the virtue that Socrates was most famous for is only an accidental feature of wisdom.

The view being advocated here is that property designators like 'being John's favorite color', 'being the color of ripe tomatoes', and 'being the virtue that Socrates was most famous for' designate the same relational properties in every possible world, and that these properties cannot be characterized using simpler characterizations like 'red' or 'wisdom'.[15]

However, this line of reasoning avoids the puzzle, only at a great cost. For if (canonical) property designators are always rigid, then 'being John's favorite color' designates the property of being John's favorite color, and 'being red' designates the property of being red, and the property of being red is not identical to the property of being John's favorite color. Hence, (2) is a necessary falsehood. As (1) is true, 'being John's favorite color' and 'being red' are non-compositional, that is, their semantic values are not functions of the semantic values of their parts. This is a disturbing consequence, for it surely seems that the semantic values of property designators derived from predicates should be a function of the semantic values of the predicates.[16]

A fourth thing one might do is dismiss the puzzle on the grounds that 'red' and 'John's favorite color' are not property designators. But this would seem to remove one mystery only to replace it with another. For what could possibly be the function of 'red' and 'John's favorite color' if not to designate properties.[17] More to the point: a defender of this line has difficulties accommodating the intuition that the following sentences could be true.

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[15]   See Schnieder, "Property Designators", p. 237. Note that the fact that a property cannot be characterized in a non-relational way does not show that a designator of it is rigid. For example, because different levels of wisdom do not have public names, the property designated by 'the property of being as wise as Quine' cannot be fully characterized in a non-relational way; yet 'the property of being as wise as Quine' may well be non-rigid, designating different levels of wisdom at different worlds.

[16]   'Being red' is derived from 'is red' (as it occurs in 'my shirt is red) and 'being John's favorite color' is derived from 'is John's favorite color' (as it occurs in 'my shirt is John's favorite color').

[17]   In "How to tell Universals from Particulars" Philipp Keller argues that these terms refer to kinds. But it seems that the same problem arises for kinds. See, e.g., Stephen P. Swartz, "Kinds, General Terms, and Rigidity".

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(4) Redness is the property John favors most

(5) Wisdom is the property John despises most

(6) The property of being polite is the only venerable feature John lacks

(7) The property of being unmannerly is the attribute that first comes to mind when I am thinking of John

The expressions flanking the 'to be' verb in these sentences surely seem to be property designators.

Of course, it may be argued that these sentences have the same underlying form as sentences in which these ostensibly singular terms do not occur. For example, it may be thought that (4), upon analysis, cashes out to:

(8) John favors redness most

However, it would be a mistake to think that the problematic property designators can be paraphrased away in this way. For redness may be the property John favors most, even if John likes numbers better than properties (provided, of course, that numbers are not themselves properties). Hence, (4) may be true, and (8) false. More to the point: a readiness to convert (4) into (8) should be accompanied by a readiness to make the corresponding move with respect to the following pair:

(9) David Armstrong is the realist John admires most

and

(10) John admires David Armstrong most

Yet these sentences do not have the same underlying form, which can be seen by replacing 'David Armstrong' with 'Stephen Yablo'.

III. How to Solve the Puzzle

The fifth, most natural solution is to deny that (2) is a necessary falsehood but insist that the inference from (1) to (2) is valid. This is the solution I favor. Rejecting that (2) is necessarily false without rejecting the inference from (1) to (2) may not be litigious to everyone, but it is

worthy of note, as it motivates a rejection of the abundant conception of properties.

It will be noted that if property designators are always rigid, then they differ in this respect from designators of other abstract entities such as numbers.[18] There is sturdy tradition in modal logic for viewing number designators such as 'the number of moons of Jupiter' and 'the number of planets' as non-rigid. Their being non-rigid explains why the truth-value of the following sentence is sensitive to whether 'the number of planets' is given wide or narrow scope:

(13) Necessarily, nine is the number of planets

(13) has two readings, according as 'the number of planets' takes narrow or wide scope with respect to the modal operator:

□[the x: number of planets x](x = nine)

[the x: number of planets x]□(x = nine)

On the first of these readings, (13) is true iff in every world the number of planets is nine. This is false. For in some worlds, the number of planets is ten. On the second reading, (13) is true iff the number of planets is such that in every world nine is identical to it. This is true. For the number of planets is actually nine, and nine is identical to nine in every world. But note that if 'the number of planets' were a rigid designator, then these readings would have the same truth-value. They would both be true if 'the number of planets' rigidly designated nine, and they would both be false if it rigidly designated something other than nine. Thus, if number designators like 'the number of moons of Jupiter' or 'the number of planets' were rigid, modal logic, as we know it, would rest on a mistake.

But why, if designators of numbers may be non-rigid, should we think that all (canonical) property designators are rigid? Well, as we have already seen, there may be independent grounds for this view. One is that within the framework of possible world semantics, any function from indices to extensions represents a property. This assumption is not much of an argument, however. So, let us turn to the supporting arguments for the view that there are no non-rigid property designators.[19]

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[18]   The problems are magnified if numbers are properties, as claimed by identificationists in mathematics.

[19]   Cf. Schnieder, "Property Designators, Predicates, and Rigidity", pp. 232-5.

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For a property designator to be non-rigid its contribution to truth-conditions must be distinct from its denotation. For example, if 'being the color of a ripe tomato' is non-rigid, then its contribution to truth-conditions involves the concept *tomato*, but it denotes a property that does not involve that concept. Our objector denies that this is so. We considered four reasons for denying this claim. However, as I will now argue, these reasons fail.

One reason to deny that truth-conditional contribution and denotation come apart is that not doing so would force us to treat clearly relational properties as non-relational. For example, the property of being the color of ripe tomatoes is allegedly relational; redness is not. However, this line of reasoning begs the question. For if the property designated by 'being the color of ripe tomatoes' is redness, then that property is in all probability non-relational.

Another sort of pressure towards admitting that truth-conditional contribution and denotation come apart is that a thing exemplifies the properties designated by the alleged non-rigid designators *in virtue of* having a property designated by a rigid designator. For example, a thing exemplifies the property of being the color of ripe tomatoes in virtue of being red, but it does not exemplify redness *in virtue of* being red. However, this line of reasoning also begs the question. For if 'being the color of ripe tomatoes' designates redness, then a thing exemplifies that property *in virtue of* being red if and only if it exemplifies redness in virtue of being red.

A third reason to think that there are no non-rigid (canonical) property designators is that the denotation of alleged non-rigid property designators seems constant across possible worlds. My brown shoes would have had the property of being the color of ripe tomatoes while my red shirt would not if ripe tomatoes had been brown. So, there is a property, namely the color of ripe tomatoes, which only my shirt has, but which my shoes would have had. However, this line of reasoning ignores the scope issues involved in saying that my brown shoes could have exemplified the property of being the color of ripe tomatoes (while still being brown). The correct formulation of this latter claim is:

> (14) $\Diamond$[the x: being the color of ripe tomatoes x](my shoes exemplify x & my shoes are brown)

and not

> (15) [the x: being the color of ripe tomatoes x]$\Diamond$(my shoes exemplify x & my shoes are brown)

This leads us to the fourth and most forceful reason for denying that property designators may have a denotation that is distinct from their truth-conditional contribution. The fourth reason is that the view that there are non-rigid property designators implies that some properties are accidental properties of themselves. For example, if 'to be the virtue that Socrates was most famous for' as it occurs in:

> (3) Being the virtue that Socrates was most famous for is only an accidental feature of wisdom

actually designates the property of wisdom, then wisdom is accidentally true of wisdom.

However, it is a mistake to think that defenders of the view that there are non-rigid designators would want to say that 'being the virtue that Socrates was most famous for' or its appositive expansion 'the property of being the virtue that Socrates was most famous for' designates wisdom. To do that would clearly be injudicious. For it is obvious that 'to be the virtue Socrates was most famous for' and 'the virtue Socrates was most famous for' do not co-refer. The virtue that Socrates was most famous for *has* the property of being the virtue Socrates was most famous for (if it exists); but the virtue that Socrates was most famous for does not *have* the virtue Socrates was most famous for; it *is* the virtue Socrates was most famous for.

The difference between 'being John's favorite color' and 'being red', on the one hand, and 'being the virtue Socrates was most famous for', on the other hand, is that in the former case 'being' can be read either as the 'being' of predication or as the 'being' of identity; in the latter case it can only be read as the 'being' of identity. 'Being red' and 'Being John's favorite color' designate the same property as 'red' only when 'being' is read as the 'being' of predication. But none of this affects the main point of interest to us here, viz. that designators such as 'to be the virtue Socrates was most famous for' are non-rigid. The correct form of (3) is: Being the virtue Socrates was most famous for is a feature of wisdom, and it is possible that being the virtue Socrates was most famous for is not a feature of wisdom.

This raises the question of what expressions of the form 'being F', 'the property of being F' and their cognates refer to. The answer is: it depends—it depends on what the type of 'F' is. 'Being F' may well designate a non-relational property F-*ness* if 'being' is the 'being' of predication. For example, 'the property of being kind' presumably

designates the non-relational property of kindness.[20] If the 'being' is the being of 'identity', however, then 'being F', designates a relational property, namely the property *being identical to F*. For if 'being' is the 'being' of identity, then it makes the same contribution to truth-conditions as 'being identical to'. Accordingly, while 'the virtue that Socrates was most famous for' designates a non-relational property, namely wisdom, 'being the virtue that Socrates was most famous for', if it designates anything, designates a relational property: being identical to wisdom.

With the main argument against the view that there are non-rigid (canonical) property designators out of the way, it is open to argue that 'red' and 'the property of being red' are rigid designators, whereas 'John's favorite color', 'being John's favorite color', 'to be the virtue Socrates was most famous for', 'the property designated by "red"', and so on, are not.[21]

Though 'the property of being red' is a description, and the contribution of a description to truth-conditions is distinct from its actual designatum, 'the property of being red' designates the same property—viz. a property that determines a function from worlds to sets of things that are red—in every possible world. Kripke calls this form of rigidity '*de facto*', and contrasts it with a notion of rigidity which he calls '*de jure*'. *De facto* rigidity characterizes cases 'where a description "the x such that Fx" happens to use a predicate "F" that in each possible world is true of one and the same unique object (e.g., "the smallest prime" rigidly designates the number two)'. *De jure* rigidity characterizes cases in which 'the reference of a designator is *stipulated* to be a single object, whether we are speaking of the actual world or of a counterfactual situation'.[22] Whether or not there are any *de jure*

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20   For arguments against the view that property designators like 'the property of being kind' and 'kindness' co-designate, see Friederike Moltmann, "Properties and Kinds of Tropes", *Mind* 113 (2004), 1-41. Though I believe Moltmann's proposal is worthy of serious consideration, I shall not discuss it here. Suffice it to say that I think Schnieder's " 'By Leibniz's Law': Remarks on a Fallacy" (indirectly) addresses the main concerns. It is also open to argue that 'being F' can function as either a rigid or a non-rigid designator. See David Lewis, "How to Define Theoretical Terms", in David Lewis, *Philosophical Papers I*, Oxford: Oxford University Press, 1983, 78-95, p. 87.

21   'The property designated by "red" ' (= D) is non-rigid. Here is why. A description is non-rigid iff, holding the meanings of its words constant, it can denote different things in different circumstances. But even if 'red' had been used to denote blue, or kindness, or whatever, the meaning of D would have remained unchanged, as 'red' is being mentioned, not used. Yet D would have denoted blue, or kindness, or whatever. Thanks to Jim Stone here.

22   n. 21 to p. 21 of the preface of *Naming and Necessity* (Cambridge: Harvard University Press, 1980).

rigid property designators will depend on whether there are any property designators whose designatum is stipulated to be a given property ('red'—I assume—is a possible case).

If 'red' and 'the property of being red' are rigid, whereas 'John's favorite color', 'the property of being John's favorite color' are non-rigid, then (1) and (2) may both be true. Their respective underlying forms can be given as follows:

[the x: favorite color of John's x](x = red)

[the x: being red x][the y: being John's favorite color y](x = y)

This raises the question of why (2) seems less than obviously true. One can, of course, only speculate at this point. But one reason may be that (2) is read as the necessary falsehood:

$\square$[the x: being red x][the y: being John's favorite color y](x = y)

with the modal operator taking wide scope over 'being John's favorite color' and 'being red'. But this, of course, is not what (2) says. Another reason may be that the rigidity of (canonical) property designators is mistakenly inferred from the plausible assumption that properties exist necessarily. But the necessary existence of an entity does not entail the rigidity of a corresponding property designator. For example, the necessary existence of God or the number two does not entail the rigidity of 'the supernatural being Christians believe to be the prime mover' or 'my favorite prime number'.

IV. Sparse Properties and Rigidity

I have argued that a bright distinction must be drawn between rigid and non-rigid (canonical) property designators. However, one might fear that this distinction is insignificant. For while it avoids the above puzzle, it seems unrelated to the distinction between property designators that allegedly designate natural properties (such as 'the property of being gold' and 'the property of being H_2O') and those that do not (e.g., 'the property of being golden metal commonly used in wedding rings' and 'the property of being the main ingredient in tap water').[23] To set apart the property designators that designate natural properties from the rest we need some serious metaphysics. Hence, the application

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[23]   Arguably, naturalness comes in degrees. But I shall ignore this complication for now.

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of the rigid/non-rigid distinction to property designators is uninteresting. Or so, the popular line goes.

In a recent paper[24] Michael Devitt—who buoys up this popular line—suggests that we can capture the distinction we are after if we confine ourselves to talk about rigid application. A predicate is a rigid applier iff it is such that if it applies to an object in any possible world, it applies to that object in every possible world in which the object exists. The predicates 'is H_2O' and 'is gold' are thus rigid appliers, but 'is the main ingredient in tap water' and 'is golden metal commonly used in wedding rings' are not.

Devitt contends that his distinction corresponds roughly to that between predicates that ascribe natural properties and those that do not.[25] But that seems not to be the case. 'Is blue' and 'is bleen', for example, both come out as non-rigid appliers. Perhaps what Devitt is really after is the distinction between predicates that ascribe essential properties and those that do not.[26] Thus characterized, Devitt's distinction seems fine as long as we confine ourselves to predicates. But it has no application to property designators. Granted, it might be said that a property designator is rigid iff the corresponding predicate is a rigid applier. But property designators would then be rigid only in a derivative sense. Moreover, it would leave open the possibility that a term like 'being golden metal commonly used in wedding rings' *rigidly* designates a property, albeit an unnatural one.

In my opinion, it is a mistake to think that the rigid/non-rigid distinction as applied to property designators is significant only if it corresponds to the distinction between natural and unnatural properties. The most apparent mistake is to assume that there is a clear distinction to be drawn between natural and unnatural properties. As David Lewis points out, if there is such a distinction, it will admit of degree.[27] Some properties are perfectly natural; others are perfectly unnatural. But most are neither.

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[24] "Rigid Application", forthcoming in *Philosophical Studies*. Devitt claims that 'it is not the job of rigidity to mark out the natural kind terms' (p. 20). Nonetheless, his main reason for disposing of the rigidity distinction for property designators is that they are unable to do exactly this kind of work. Devitt adds that 'the primary work of a rigidity distinction for kind terms is to identify terms that are not synonymous with descriptions, and hence refuting description theories of meaning for those terms' (p. 5). Our rigidity distinction does this primary work with property designators as well as Devitt's account does it with predicates.

[25] Devitt admits that kind terms like 'frog' may be non-rigid because, as he says, 'their mode of reference is partly descriptive' (p. 20).

[26] But see note 24.

[27] *On the Plurality of Worlds*, p. 61.

More importantly, that there are (unmistakably) unnatural properties is obvious only under an abundant conception of properties. Under an abundant conception, whether an expression designates a property depends on 'broadly syntactic facts about it'. Thus, every syntactically well-formed property designator designates a property.[28]

However, if we deny that all property designators are rigid, the obvious next step is to deny that there are any (unmistakably) unnatural properties. The claim that there are non-rigid property designators, of course, does not have the implication that properties cannot be represented within the framework of possible world semantics as functions from worlds to sets; nor does it entail a rejection of the claim that every such function represents a property.

Yet our intuitions about the truth-value of identity claims like (1) suggest that we need to regard fewer such functions as representing properties than hitherto assumed. Not every syntactically well-formed property designator designates a property. Even ignoring worlds where John does not exist, the property designator 'being John's favorite color' need not designate a property; it designates no property in a world in which John has no favorite color. Likewise, 'being the attribute that first comes to mind when I am thinking of John' designates no property in a world in which no attribute comes to mind when I am thinking of John.

But it is a reasonable assumption that, if a predicate ascribes a function from worlds to extensions but the corresponding property designator does not designate that function, then the function does not represent a property. So, there is little reason to think the function from worlds to John's favorite color or the function from worlds to the attribute that first comes to mind when I am thinking of John represents a property.

Which property designators other than those just considered may plausibly be thought to have an empty extension? Property designators purporting to designate relational properties like 'the property of being identical to the square of three' and 'the property of being further away from Boston than D.C. is' are good candidates (unlike property designators purporting to designate non-relational properties like 'the

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28   See Matt McGrath [in "Propositions"]. McGrath formulates the abundant conception thus: 'Under an abundant conception of properties, whether a predicate expresses a property depends only on ... broadly syntactic facts about it. The simplest abundant conception holds that every well-formed predicate expresses a property. According to the sparse conceptions, not every syntactically well-formed predicate expresses a property'. McGrath's particular version of the abundance thesis will be questioned below.

property of being red').[29] Other good candidates are 'the property of being childless', 'the property of being unmarried' and also Goodmanian charade property designators like 'grue', 'bleen' and 'the property of being green or blue'. The predicate 'is unmarried' is true of an object just in case the object *lacks* the property of being married. If, however, there is no negative property corresponding to the lack of the property of being married, then there is no property corresponding to the predicate 'is unmarried', and hence 'the property of being unmarried', though meaningful, has an empty extension. But unlike 'the current King of France' whose extension is actually empty yet possibly non-empty, the extension of 'the property of being unmarried' is necessarily empty, if the envisaged proposal is right.

An obvious worry about the proposed elimination of unnatural properties turns on the fact that pairs of sentences, such as

(16) L.A is further away from Boston than D.C. is

and

(17) L.A. has the property of being further away from Boston than D.C. is

seem obviously truth-conditionally equivalent. Accordingly, if designators like 'the property of being further away from Boston than D.C. is' fail to designate, then (17) is false, and so, contrary to appearances, (16) is false. However, this worry is unfounded. For either 'the property of being further away from Boston than D.C. is' is semantically a referring term or some other expression that purports to designate, or it is not. If it is, then (16) and (17) are truth-conditionally equivalent *only on the assumption* that there is a property of being further away from Boston than D.C. is. If 'the property of being further away from Boston than D.C. is' is not semantically a referring term or some other expression that purports to designate,[30] then trivially, it does not designate the property of being further away from Boston than D.C. is. Either way the eliminative proposal does not imply the falsity of innocent claims like (16).

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[29]   Property designators purporting to designate dependent properties, such as 'thirst' and 'motherhood', are also good candidates; see Lewis, *On the Plurality of Words*, pp. 52ff.

[30]   For a defense of this line, see, e.g., Schiffer, *Remnants of Meaning* (MIT Press, 1987), Thomas Hofweber, "A Puzzle about Ontology", *Nous* 39 (2005), 256-83, and Hofweber, "Innocent Statements and their Metaphysically Loaded Counterparts", manuscript.

The question remains as to what, if anything, Devitt's preferred examples of property designators designate. If the above considerations are right, property designators like 'the property of being gold' and 'the property of being golden metal commonly used in wedding rings' may not designate anything at all. If 'being' is the 'being' of identity, expressions of the form 'the property of being F', if they designate anything, designate relational properties. So, unless the type of 'gold' and 'being golden metal commonly used in wedding rings' shifts to the type of an adjective,[31] 'being gold' and 'being golden metal commonly used in wedding rings', if they designate anything, designate the dubious relational properties of being identical to gold. However, as already noted, I rather doubt that there is any reason to deposit such extravagant properties into our ontology. The noun phrases 'gold' and 'golden metal commonly used in wedding rings', on the other hand, may very well designate properties (or kinds, if one acknowledges kinds in addition to properties[32]). 'Gold', then, will be rigid, and 'golden metal commonly used in wedding rings' non-rigid.

By way of conclusion: we began with the widely accepted claim that the semantic value of a predicate is the designatum of a corresponding property designator. This claim is less than obviously true. For if we deny that all (canonical) property designators are rigid, which there seems to be very good and obvious reasons to do, then the natural next step is to deny that every property designator designates a property. A predicate, then, may have a semantic value, even if there is no suitable property to play this role.[33]

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[31]   As it does in 'this stuff is gold' or 'this stuff is golden metal commonly used in wedding rings'.

[32]   See, e.g., Greg Carlson, *Reference to Kinds in English*, (Doctoral Dissertation, University of Massachusetts at Amherst, 1977).

[33]   Thanks to Matt McGrath, Benjamin Schnieder, Ernest Sosa and Jim Stone for remarks that improved the paper considerably. Any remaining mistakes are my own.

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