Metaphysical Vagueness and Metaphysical Indeterminacy

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1.

I will here discuss vagueness, specifically whether there is "metaphysical" vagueness, vagueness in the world.

Let me start with an important preliminary concerning what the phenomenon under discussion, vagueness, is. The term tends to get used one way in ordinary parlance and one way in philosophy. If I reply to a question about where Holger is by saying "he is in some bar", I can fairly be said to have been 'vague' about Holger's whereabouts. But that's just a way of saying that I was unspecific about his whereabouts. Often in philosophy, 'vague' is used with a different meaning. Vagueness is that phenomenon, whatever it is, that paradigmatically rears its head in sorites reasoning.[1] How we decide to use 'vague' is just a matter of terminology. The important point is that there is a distinction between what I call 'vague' and what I call 'indeterminate'. Being careful about what the topic under discussion is, is especially important when we consider the possibility of metaphysical vagueness. Many authors freely go back and forth between considering metaphysical *indeterminacy* and metaphysical *vagueness*, but one may wish to render one verdict on the possibility of metaphysical indeterminacy and another on the possibility of metaphysical vagueness.

The question I will deal with is whether vagueness is associated with *semantic* indeterminacy, *metaphysical* indeterminacy, or at best *epistemic* indeterminacy. Here are rough thumbnail sketches of these types of indeterminacy. (Some qualifications will be introduced later.) On the view that vagueness is associated with semantic indeterminacy it is indeterminate what the expression stands for.[2] On the view that vagueness is

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[1] Note the formulation "paradigmatically rears its head". This characterization of vagueness does not immediately entail that vagueness, understood as characterized, is always associated with sorites phenomena. (Although I happen myself to believe a version of this stronger claim myself.)

[2] Arguably other representational items than expressions can be vague, and a more appropriate label for what I will here keep referring to as semantic indeterminacy would be *representational indeterminacy*. I will however stick with standard terminology and use "semantic" instead of "representational".

associated with metaphysical indeterminacy, vague expressions stand for objects that are in and of themselves vague. On the view that vagueness is associated with epistemic indeterminacy, vague expressions have semantically determinate reference, and the objects they stand for are not in themselves vague: the only indeterminacy (if we can even call it that) associated with vagueness is *epistemic*: for principled reasons we cannot know the reference of vague expressions. In my discussion I will set the possibility of epistemic indeterminacy aside, and focus only on semantic and metaphysical indeterminacy.

Throughout, I will speak of the indeterminacy with which vagueness is *associated*, or vagueness-*related* indeterminacy, rather that of the indeterminacy which vagueness is. The reason for the perhaps somewhat convoluted formulation is that I want to leave open the possibility that the relation between vagueness and the relevant kind of indeterminacy falls short of identity. My own favored view on vagueness and indeterminacy – briefly summarized and discussed in section 3 – is one on which the relation between vagueness and indeterminacy is less than straightforward, but I believe the talk of indeterminacy "associated with" vagueness is advisable even independently of my own favored view.

2.

A fully unified account of indeterminacy is hardly a realistic goal. An account of the indeterminacy associated with vagueness is not necessarily an account of indeterminacy generally. Vagueness-related indeterminacy may be only one kind of the different kinds of indeterminacy, requiring different sorts of treatment, that there are. Already the seeming fact that some purported indeterminacy is semantic and other purported indeterminacy is metaphysical shows, if genuine, that indeterminacy is not a unified phenomenon. But I will also point to how there seem to be distinctions to be drawn between different instances of semantic indeterminacy and between different instances of metaphysical indeterminacy.

Let me start by bringing up some rather different instances of semantic indeterminacy. First, consider Quinean indeterminacy. According to Quine, nothing in what determines what a speaker means by her words and symbols determine exact

reference – nothing determines that 'rabbit' in a given speaker's mouth refers to rabbits and not e.g. undetached rabbit parts, timeslices of rabbits, etc. Given the holistic features of interpretation, there are other hypotheses about the reference of words that fit all the facts equally well. Second, consider an example made famous by Field (1973). We know from modern physics that nothing satisfies all the claims that Newtonian physics makes about 'mass'. Instead there exist two different possible referents of Newtonian 'mass', *proper mass* and *relativistic mass*, both of which approximately satisfy the claims Newtonian physics makes about 'mass'. It seems wrong to say that 'mass' as it occurs in Newtonian physics does not refer. Rather, 'mass' as used in Newton is indeterminate in reference as between proper mass and relativistic mass.[3] Third, something for which we can use the label *semantic indecision* or the label *incompleteness of meaning*. (Both have been used. Maybe the former label is preferable since it carries less theoretical baggage.) Consider a predicate 'nice' introduced by incomplete stipulations:[4]

n is nice iff n<13
n is nice iff n>15

The predicate 'nice' is partially defined. We have been somewhat semantically indecisive with regard to 'nice'. Maybe it is right to say that its meaning is incomplete.

Next, turn to different instances of metaphysical indeterminacy. First, there is the metaphysical indeterminacy that is sometimes said to be shown by *quantum physics* to obtain. Second, there is the *open future*. Third, there is indeterminacy as it comes up in certain realist/antirealist discussions. For example, some claims of set theory,

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[3] To explain, briefly, Field's point: Two central tenets of Newtonian mechanics is (a) that momentum equals mass times velocity and (b) that for any two frames of reference, mass is the same with respect to both frames. Relativity theory shows that it can't be that both tenets are correct, for the momentum of a particle divided by its velocity has different values in different frames of reference. But this does not mean that any specific Newtonian tenet has been refuted. For relativity theory posits one thing that satisfies (a) – relativistic mass (total energy divided by the square of the speed of light) – and another thing that satisfies (b) – proper mass (nonkinetic energy divided by the square of the speed of light). Relativity theory would have refuted a specific tenet of Newtonian physics if Newton's 'mass' determinately referred to either relativistic mass or proper mass (or determinately referred to neither). But Field's claim is that precisely because relativistic mass and proper mass approximately satisfy the claims Newton made about 'mass', Newton's term 'mass' is indeterminate in reference as between these two possible referents. (See Field 1973, pp. 466-7.)
[4] Modulo minor details, this example is from Fine (1975).

prominently the continuum hypothesis, are such that both they and their negations are consistent with the currently accepted axioms of set theory; and there are no obvious additions to the axioms that settle the *continuum hypothesis*, or so the standard account goes. One dividing line between realism and (prominent types of) antirealism about sets concerns whether the continuum hypothesis anyway has a determinate truth-value. The realist says yes, while the antirealist in one way or other demurs. The antirealist view is that this in one way or other is a matter of indeterminacy of mathematical reality.

I find it natural, when considering the different instances of semantic and metaphysical indeterminacy, to say that there are different *kinds* of semantic indeterminacy and of metaphysical indeterminacy. Putting it this way immediately invites the question of what exactly it means to say that two instances of indeterminacy are, or are not, of different kinds. But for present purposes the important question is just whether there is reason to believe that the questions about indeterminacy raised in the literature are likely to have univocal answers. These are questions about, for example, the logic of indeterminacy and about the cognitive (or normative) role of indeterminacy – where the question of the cognitive role of indeterminacy is the question of what an agent's attitude toward p ought to be when she takes it to be indeterminate whether p.

First, consider the logic of indeterminacy. One popular view on vagueness – although not one I subscribe to myself – is that fuzzy logic is the logic of vagueness: the indeterminacy with which vagueness is associated is a matter of vague sentences taking truth-values on a continuum. But this idea seems like a non-starter in the case of some of the kinds of semantic indeterminacy listed. What we have here is one consideration given which vagueness-related indeterminacy would be a different kind of indeterminacy from the just listed kinds of semantic indeterminacy, even if vagueness-related indeterminacy is indeed semantic. This point about the logic of indeterminacy does nothing to distinguish between purported kinds of semantic indeterminacy distinct from vagueness. But consider then a second issue: the cognitive roles of the indeterminacies. One reasonable view on "14 is nice" is that this is simply to be rejected. But even if one holds this view one can think that "this object has mass____" is one we ought to have a more

ambivalent attitude toward, if this is true given one but not the other of the candidate referents of mass. If so, these two types of indeterminacy have different cognitive roles.[5]

If vagueness is associated with semantic indeterminacy, is the indeterminacy with which it is associated of the same kind as some independently recognized form of semantic indeterminacy? If it is associated with metaphysical indeterminacy, is the indeterminacy with which it is associated of the same kind as some independently recognized form of metaphysical indeterminacy? Some who think vagueness is associated with semantic indeterminacy understand vagueness as a matter of semantic indecision or partial definition.[6] Another possibility is that vagueness-related indeterminacy is semantic. One immediate reason for distinguishing the indeterminacy with which vagueness is associated from other kinds of indeterminacy has to do with higher-order vagueness. In the case of each kind of semantic indeterminacy except for possibly vagueness it seems that operating with a classification into determinately true, indeterminate, and determinately false is perfectly satisfactory, even if it leaves open questions about, for example, the relation between truth and determinate truth. "14 is nice" is simply indeterminate; an utterance about something's 'mass' which is true if 'mass' is understood one way and false if 'mass' is understood the other way is likewise indeterminate, etc. But in the case of vagueness this tripartite classification intuitively runs into problems that it does not run into elsewhere. Consider a sorites series for a vague predicate F. Saying that there is an item such that it is determinately true that it is F but the next item in the series is such that it is indeterminate whether it is F is intuitively unsatisfactory, and is so in just the way that saying that there is an item that is determinately F but the next item is determinately non-F would be. The tripartite classification leaves some things to be desired. Maybe in the end it is actually

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[5] Williams (2012) argues that different kinds of indeterminacy are associated with different normative roles. Or, better, that is what I see as the natural upshot of what Williams says. For discussion, see Eklund (forthcoming).

    One awkwardness concerning how to speak of this (at least) is that on standard views the objects of cognitive attitudes are propositions, but on standard views on semantic indeterminacy, propositions are not indeterminate – only the linguistic expressions we use are. In the main text, I adopt the expedient of speaking of the attitudes as directed toward sentences. Of course, that is not in the end a satisfactory solution. Some may be inclined to think this problem shows that there is something amiss with the idea of semantic indeterminacy. My own view is that there surely is *some* sense in which I can believe that 14 is nice and that what I believe is indeterminate, even if the indeterminacy at issue is semantic. But discussing how it can be so will have to await another occasion.

[6] See e.g. Kit Fine (1975) and David Lewis (1986), p. 212.

satisfactory. But it faces problems in the case of vagueness that it does not face in other cases. Similar remarks apply in the case of metaphysical indeterminacy, and it may be worth stressing that while it sometimes is assumed that indeterminacy is a unitary phenomenon, no one has, to my knowledge, tried to assimilate the indeterminacy associated with vagueness to a specific, independently recognized kind of metaphysical indeterminacy in the way that vagueness sometimes has been assimilated to a specific form of independently recognized semantic indeterminacy.

I should emphasize that there are complications regarding using higher-order vagueness to distinguish the indeterminacy associated with vagueness from other kinds of indeterminacy. Exactly what is the condition that the indeterminacy associated with vagueness but not other kinds of indeterminacy is supposed to satisfy? If it is merely that the indeterminacy associated with vagueness *sometimes* iterates, then it is not immediately clear that other kinds of indeterminacy do not also satisfy this condition. If instead it is that the indeterminacy associated with vagueness *always* iterates then first, there are cases that have been held to show that this is not intuitively true, and second, on pain of paradox one can think vagueness just cannot satisfy this condition. My own favored response to this concern is the following.[7] Take an example designed to show that the indeterminacy associated with vagueness does not always iterate: the predicate 'has few children for an academic'.[8] While this is intuitively vague (exactly how many children can one have while still having few children for an academic?), and while this intuitively seems to be the same sort of phenomenon that gives rise to sorites paradoxes, a sorites paradox formulated using this predicate would not be very compelling, and the vagueness is not clearly iterable.[9] (There may be a number n such that n is the only borderline case for 'having few children for an academic'.) However, even if this is so, still academics could have so many children that the vagueness associated with 'has few children for an academic' iterates, and what is more, 'few', the word such that it or what it stands for is responsible for the vagueness of 'has few children for an academic', does

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[7] For discussion see my (2007). The problem is forcefully raised in Weatherson (2010) (written before my (2007)).

[8] The example is from Weatherson (2010), p. 80.

[9] Here it matters that vagueness was characterized as the phenomenon that paradigmatically rears its head in sorites reasoning. Given a characterization linking vagueness to soriticality more tightly, this kind of purported counterexamples would be ruled out by definition.

help generate some compelling sorites paradoxes ('contains few grains for a heap of sand'), where the vagueness intuitively iterates. In brief, my response is that the expression or entity responsible for the indeterminacy associated with vagueness is guaranteed to be tied to some indeterminacy that iterates. It is only in this way that the indeterminacy associated with vagueness always iterates.

Both earlier when I introduced the different kinds of indeterminacy and now when talking about the iteration of the indeterminacy associated with vagueness I have talked as if whenever a sentence is indeterminate there are individual expressions such that they or what they stand for is what is responsible for the indeterminacy. But to assume this about indeterminacy is to assume something rather controversial. It is common to represent indeterminacy as a kind of operator – "it is indeterminate whether…" – and in general with any operator O and true sentence "Op", one would not expect any particular expression occurring in "p" to be what accounts for the truth of Op. It may be necessary that Obama is human, but it would be absurd to trace the necessity either to Obama or to being human (or to 'Obama' or 'human'). It is false that Alfred Nobel was Danish, but it would be absurd to trace the falsity either to Alfred Nobel or to being Danish (or to 'Alfred Nobel' or 'Danish'). And at least some (supposed) forms of indeterminacy seem to be like this too. It can be indeterminate whether the electron passed through slit A or B, but this does not trace back to either the electron or the slits.

However, vagueness does seem to have a 'bottom-up' character to it. Whenever we have sorites-susceptibility, this can be traced back to a unique constituent expression. The bottom-up character of vagueness does seem to set it apart in one important way from other instances of indeterminacy, even if it does not immediately entail either that the logic of the indeterminacy associated with vagueness or the cognitive role of this indeterminacy is different from what it is like in other instances of indeterminacy.

After these preliminaries, let me state my general view on the possibility of metaphysical vagueness and metaphysical indeterminacy. I will not argue for it, either now or later. In fact, some things I will draw attention to present problems for it. My main purpose in stating it is not to convince, but to illustrate some of the distinctions drawn.

According to the view in question, there are no general reasons to doubt the existence of metaphysical indeterminacy. Whatever in the end may be the right thing to say in the relevant debates, maybe the open future is best understood in terms of indeterminacy, maybe some quantum-physical phenomena are best understood by appeal to metaphysical indeterminacy, maybe mathematical reality is metaphysically indeterminate, etc. But however that may be, some indeterminacy is semantic rather than metaphysical. Examples like the 'mass' example suffices to make *that* point. Moreover, vagueness, the phenomenon that rears its head in the sorites paradox, is associated with semantic rather than metaphysical indeterminacy; there is no *metaphysical vagueness* even if there is metaphysical indeterminacy. For future reference call the view just sketched *the hybrid view*. If indeterminacy were a fully unitary phenomenon, the hybrid view would be immediately ruled out. Notice incidentally, that already if some indeterminacy is semantic while other indeterminacy is metaphysical is indeterminacy in the relevant sense disunified.

2.

Whatever in the end its proper fate, the hybrid view is very natural. It may then be somewhat surprising that, as I will show in this section, the most prominent arguments against metaphysical vagueness that are found in the literature seem at the same time to be arguments against metaphysical indeterminacy. In this section I will also show how other discussions run together the issue of metaphysical indeterminacy with the issue of metaphysical vagueness in a way that is problematic.

The most famous argument against metaphysical vagueness is arguably that due to Gareth Evans (1978). Here is the core of the argument. Suppose, for reductio, that it is indeterminate whether a=b, i.e.   (a=b). Now, every object is determinately identical with itself, so ~   (a=a). But this means that a has a property that b doesn't have, viz. that expressed by ~   (x=a). But then, by the indiscernibility of identicals, a↑b, for we have shown that a has a property that b doesn't have. And since we have proven a↑b, it is determinate that a↑b. So it is not the case that   (a=b).

A first natural thought is that this is simply an (attempted) reductio of the claim that there are any indeterminate identity sentences. It then doesn't show anything

specifically about metaphysical vagueness, for the issue is independent of whether the indeterminacy associated with vagueness is metaphysical or semantic. A related thought is that the argument proves too much: for surely some identity sentences are indeterminate. But – as prominently stressed in David Lewis (1988) – Evans has a reply. It is that the semantic theorist of vagueness has a way around this problem that the metaphysical theorist doesn't have. Compare the following argument: Clark Kent isn't identical with Superman, by the indiscernibility of identicals. For Superman has the property of being believed to be a hero by Lois Lane, and Clark Kent doesn't have that property. This argument goes wrong. And the diagnosis is straightforward: the 'believes'-construction creates a context that is opaque in that no property is ascribed to Clark Kent or Superman. Going back to Evans' argument, one way to block it is to insist that ' ' similarly creates an opaque context. But that reply, Evans holds, is open only to the semantic theorist. (For the semantic theorist holds that indeterminacy afflicts not objects themselves but objects as represented; the metaphysical theorist denies precisely this.)

A cottage literature has grown up around Evans' argument, with various friends of metaphysical vagueness seeking to block it by arguing that some principle or principles relied on by Evans can't be relied on in this context. Here I will only discuss what Evans' argument shows *if* it works. The most obvious point here is that what Evans immediately targets is the idea of *metaphysically indeterminate identity statements*. There is not immediately anything specific to the case of *vagueness* in what Evans argues. Of course already showing that no identities can be metaphysically indeterminate is interesting. But why should this be thought to show that there can be no metaphysical indeterminacy at all? Can't the friend of metaphysical indeterminacy maintain that while Evans' argument shows that no *identities* can be metaphysically indeterminate, there can still be metaphysical indeterminacy?[10] Whether this works or not depends on whether there is a reasonable way to, so to speak, ensure that the indeterminacy one believes in does not affect any identities. Here is one way things can go wrong. The friend of metaphysical indeterminacy can be expected to want to hold that it is sometimes

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[10] Morreau (2002) takes this line, saying "The main problem with the argument from definite identities is just that there is no reason to think that things with fuzzy boundaries must have indefinite identities. Strangely, Evans did not even try to show that they must; perhaps it did not occur to him that having a fuzzy boundary and having an indefinite identity might be different things" (p. 338).

metaphysically indeterminate whether something has changed; whether it has gone from being one way at one time to not being that way at another time. But this indeterminacy threatens to spill over into identity. For call the object's state at the earlier time S and call its state at the later time S*. Then it seems to follow that it is metaphysically indeterminate whether S=S*. But that, if there are no independent problems with Evans' argument, is what Evans' argument rules out.[11]

There are supplementary assumptions that could help turn Evans' argument into one specifically against metaphysical vagueness. Specifically, consider the assumption that vagueness is a unified phenomenon, and the same explanation of it is correct everywhere. Given that assumption, it seems that we manage to show that no vagueness is metaphysical already if we show that some vagueness fails to be. But for Evans' argument to have this import, we would need an intuitively *vague* (not just *indeterminate*) identity sentence – we need an indeterminate identity sentence whose indeterminacy is due to vagueness. (And it is in principle possible, whether in the end reasonable, to hold that while some identity sentences are indeterminate, none is indeterminate due to vagueness.) Also, there seem to be simpler ways there: how about e.g. sorites arguments centered on vague quantifier expressions, like 'few' and 'many'?[12]

Evans himself arguably assumes is that indeterminacy is also a unified phenomenon, so that if it is semantic in some case it must be semantic in every case. Not only does ascribing that assumption to him help make good sense of his argument; he is also carrying it out using one general indeterminacy operator.

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[11] Morreau (2002) discusses a problem similar to this one. His proposed way out – applied to this case – is this. Suppose at the earlier time object *a* is (determinately) F; but at the later time *a* is such that it is indeterminate whether it is F. Then S*, *a*'s state at the later time is indeterminate, but S, its state at the earlier time, is (we may assume) determinate. But then S and S* are determinately distinct for one has a property the other lacks.

[12] I discuss the issue mentioned here also in my (2008). To see that 'few' and 'many' are vague, consider the following sorites arguments:

If someone has exactly one hair on her scalp, then she has few hairs on her scalp.
For all n, if someone with exactly n hairs on her scalp has few hairs on her scalp, hen someone with exactly n+1 hairs on her scalp has few hairs on her scalp.
So, for all n>0, someone with exactly n hairs on her scalp has few hairs on her scalp.

If someone has exactly one billion hairs on her scalp, then she has many hairs on her scalp.
For all n, if someone with exactly n hairs on her scalp has many hairs on her scalp, then someone with exactly n-1 hairs on her scalp has many hairs on her scalp.
So, for all n less than a billion, someone with exactly n hairs on her scalp has many hairs on her scalp.

A second well-known case against metaphysical vagueness is due to Mark Sainsbury (1994). Sainsbury is mainly concerned with how even to make sense of metaphysical vagueness. I cannot here go through all relevant parts of Sainsbury's discussion. Let me just rehearse one issue Sainsbury centrally focuses on. Take the property of satisfying a predicate of the form "⌊z(⌉z)x" ("the property of being 'vaguely ⌉'"), for some predicate ⌉. Maybe vague objects are the ones that have *that* property? Well, Sainsbury notes, hardly, for a color patch can satisfy 'indeterminately red' without itself being a vague object – what is vague is instead either 'red' or the property it stands for. Again, the problems are as much problems for metaphysical indeterminacy as for metaphysical vagueness. As far as I am concerned, this is a reason to think that there must be some way to respond to Sainsbury's challenge.

A different kind of illustration of how indeterminacy and vagueness are run together is provided by the discussions of Gideon Rosen and Nicholas Smith (2004) and of Timothy Williamson (2005). Let me focus on Williamson in what follows. Williamson holds that if fuzzy semantics is the correct theory of vagueness then straightforwardly there is metaphysical vagueness ("vagueness in reality", to use Williamson's preferred locution). On fuzzy semantics, sentences can take truth-values on a continuum between 1 (true) and 0 (false), and into a language with fuzzy semantics can be introduced a "definiteness" operator, $\otimes$, with the following semantic clause:

FUZZY$\otimes$ $Val_a (\otimes\langle\rangle) = 1$ if $Val_a(\langle\rangle) = 1$

           $Val_a (\otimes\langle\rangle) = 0$ otherwise

Williamson comments:

> Of course, it is natural to object to FUZZY$\otimes$ that it makes vagueness in reality come far too cheap. Perhaps there is no single state of affairs that this is a heap but many states of affairs concerning the exact number and arrangement of grains. But that suggestion is more congenial to supervaluationism than to fuzzy logic. For FUZZYatom [the semantic clause for atomic sentences in fuzzy semantics] relates 'This is a heap' to reality as directly as it does sentences concerning the exact number

and arrangement of grains. To take the fuzzy semantics at face value is to treat vagueness in whether this is a heap as simply vagueness in how things are. If it is not vagueness in how things are, then something is wrong with the fuzzy semantics.[13]

The correctness of fuzzy semantics is held to be sufficient for vagueness in reality.

A first remark on this is that this discussion seems to run indeterminacy and vagueness together. Williamson himself speaks of the operator as a "definiteness" operator. A second remark is this. If talk of truth-values intermediate between truth and falsity can be made sense of at all, can we not by stipulations like the following successfully introduce a predicate with fuzzy semantics?

A man is tall* to degree 1 (truth) iff he is 190cm or taller.

A man is tall* to degree 0 (falsity) iff he is 180cm or shorter.

A man is tall* to degree 0<n<1 iff he is between 180cm and 190cm and n=(h-100)/100, where h is his height in centimeters.

But the predicate 'tall*' does not seem to be *vague*. For example, it does not invite problems relating to higher-order vagueness. There is no reason to think that 'tall*' is sorites-susceptible. If this is right, then having a fuzzy semantics is not sufficient for vagueness, even if fuzzy semantics is the correct theory of vagueness.

An immediate concern about the 'tall*'-example is that even if one can make sense of truth-values intermediate between truth and falsity, it is not a given that stipulations like the one presented succeed: if there is no indeterminate property tallness*, these stipulations fail to provide a semantic value for 'tall*'. The retort is reasonable as far as it goes. These stipulations are hostage to metaphysical fortune. But even if they are, it is a further claim that they are hostage to reality being indeterminate in the relevant respect. That indeterminacy and fuzziness are so related that the latter is sufficient for the former is a contestable claim. For example, if indeterminacy is a state of unsettledness between (absolute) truth and (absolute) falsity, then, one may think, any conception of

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[13] Williamson (2005), p. 705.

indeterminacy as a status positively incompatible with truth and falsity is mistaken.[14] The status of having a truth-value somewhere on the continuum between truth and falsity is such a status. Importantly, none of this precludes there being sentences having truth-values somehow between truth and falsity. It is only that a sentence's having a truth-value between truth and falsity is not, or need not be, a matter of it being indeterminate.

Of course, Williamson does not just make the general claim that if fuzzy semantics is the correct semantic theory for our language, then reality is vague; instead he makes the considerably more reasonable claim that if fuzzy semantics is the correct theory of vagueness, then reality is vague. This might be thought to make a difference to the reasonableness of the claim. However, compare the (obviously absurd) claim that if perfectly *classical* semantics constitutes the correct theory of vagueness then reality is vague. The question I am raising is why the corresponding claim about fuzzy semantics should be thought believable. When it comes to the claim about classical semantics, a natural way to object would be to point to how there are non-vague expressions with classical semantics. The 'tall*' example makes that same point with respect to vagueness and fuzzy semantics.

3.

Prominent arguments against metaphysical vagueness, like Evans' and Sainsbury's, equally target metaphysical indeterminacy. The question arises of how one might be able to target metaphysical vagueness specifically. One natural suggestion is: by defending a particular theory of vagueness such given this theory vagueness is a semantic phenomenon.

However, at least some semantic theories of vagueness fail to rule out metaphysical vagueness this neatly. To illustrate this I will bring up my own favored theory of vagueness. Elsewhere (see especially my 2005), I have defended a particular view on vagueness, *the meaning-inconsistency view*, according to which – very roughly – the vagueness of an expression is a matter of it being governed by inconsistent rules. Specifically, *tolerance principles* – where a tolerance principle for a predicate F says, roughly, that a small enough difference along F's parameter of application never matters

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[14] See, e.g., Barnes (2010), p. 612.

at all to the justice with which F applies to an object – function as rules for vague expressions even if, by the sorites reasoning, such principles lead to contradiction. This does not mean that vague expressions are empty, for the reference of a vague expression is determined to be what comes closest to satisfying the governing rules. (Compare Lewis on the reference of theoretical terms.[15]) This allows vague expressions to be non-empty, but there is likely to fail to be one assignment of semantic values to vague expressions that uniquely come closest; so there will be indeterminacy in what the semantic values of vague expressions are. This is a kind of semantic indeterminacy.

The meaning-inconsistency view is a paradigmatically semantic view on vagueness. The explanation of what vagueness is falls squarely on the representation side. One way to argue against metaphysical vagueness is then to seek to support the meaning-inconsistency view. (Something I will not attempt to do here.) Or so one may think. There are, however, two possible complications.

One complication is presented by Trenton Merricks' (2001) argument to the effect that if there is semantic indeterminacy associated with vagueness then it must carry in its wake metaphysical indeterminacy. (Merricks' own argument is more complex, but one cheap way of arguing for this conclusion is to say that if there is semantic indeterminacy associated with vagueness then some linguistic expressions are indeterminate due to vagueness and since linguistic expressions themselves are part of reality this must be a matter of metaphysical indeterminacy too.) In the next section I discuss Merricks' argument, which is of independent interest.

Another complication is that if there anyway are metaphysically indeterminate entities, it could be that vague terms are, by the procedure I outlined, determined to refer to such indeterminate entities; even if no assignment of semantic values can satisfy the inconsistent rules governing vague expressions, any assignment that comes closest to doing so assigns indeterminate entities as the referents of vague expressions. That would be one way in which adherence to a meaning-inconsistency view can be combined with the view that vagueness is associated with some sort of metaphysical indeterminacy, and this can be seen as a vindication of the idea of metaphysical vagueness.

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[15] See Lewis, e.g, (1997).

My view is of course a rather special kind of semantic indeterminacy view on vagueness. Compare a more widely believed view: traditional supervaluationism.[16] As naturally understood, this view says that vagueness is that feature an expression has when it has different semantic values under different precisifications. If that is what vagueness *is*, then metaphysical vagueness is on the face of it ruled out. Regardless of what features non-representational reality has, none of them could count as vagueness. This does not avoid the challenge Merricks presents: in fact, the target of Merricks' discussion is supervaluationism. It is also possible, I suppose, that the second problem arises for supervaluationism. But one reason why this possibility seems somewhat remote is that while the meaning-inconsistency view is essentially tied to the idea of what entities 'best fit' the conceptions associated with vague expressions, supervaluationism does not essentially appeal to any such idea but only to what is and is not consistent with the meanings that have been laid down.

There are some mistaken ideas that might blind one to the possibility just canvassed, that there can be something appropriately called metaphysical vagueness even if a semantic account of the nature of vagueness, such as for example the meaning-inconsistency view, is correct. First, I have throughout been speaking of the indeterminacy that vagueness is *associated with* or *related to* rather than the indeterminacy that vagueness *is*. If instead one spoke simply of what indeterminacy vagueness *is* one would not notice this possibility. Second, one may think that vague objects would have to be entities satisfying our intuitive conception of vagueness. Given this understanding of what it is for an object to be vague, the thesis that there are vague objects invites an immediate objection: our intuitive conception of vagueness is incoherent so nothing can satisfy it. However, one should be careful about arguing in this way against the claim that there are vague objects. For by parity of reasoning there would be no vague expressions: a vague expression would be an expression satisfying our conception of what a vague expression would be like, but this conception of ours is incoherent. (One response to these points would be that while explicit theories about vagueness that we formulate, we have an underlying conception of vagueness that we draw upon and this underlying conception is coherent.) Third, one can take the question

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[16] See Fine (1975).

of whether there are vague objects to be a question of whether the *explanation* of why there is vagueness in language or thought is always one that appeals only to the representational side of things or whether this explanation would advert to reality. (Here one of course needs to be careful about what sort of explanation is at issue. Even the most militant foe of vague objects should be able to grant the point that somehow, facts about what the world is like *help explain* why we have vague expressions and not only precise ones.) My preferred meaning-inconsistency view locates the explanation squarely in semantics and would thus be counted as ruling out vague objects. But I think this is too quick. The possibility mentioned a few paragraphs ago illustrates why: even if, in some suitable sense, the fundamental explanation of vagueness is semantic, there can be some special kind of entity such that entities of this kind are especially suited to be the referents of vague expressions.

An obviously *sufficient* condition for there to be vague objects is the following. If an entity is such that any expression that refers to it is thereby guaranteed to be vague, then the entity is vague. This sufficient condition is not satisfied given my meaning-inconsistency view on vagueness. More generally, I don't see this condition as satisfied on any reasonable conception of vagueness. The sort of view on vagueness that would be the most hospitable to it is a view like a fuzzy view. The thought would be that the vagueness in the object determines any expression that stands for it to have a fuzzy semantics, and an expression's having a fuzzy semantics is sufficient for it being vague. The 'tall*' example from earlier puts pressure on this thought.

4.

Let me now turn to the argument due to Trenton Merricks that I alluded to earlier. Focus on the sentence

(1) Harry is bald.

This sentence is vague, and arguably indeterminate in truth-value. The standard semantic explanation of what goes on is the one associated with supervaluationism: some expression occurring in it is vague and can be precisified in different ways, so the

sentence itself can be precisified in different ways. In this sentence, 'bald' is the natural suspect. 'Harry' may be vague too (it may for example be vague where the boundaries of the referent of 'Harry' are), but the indeterminacy in the sentence as a whole can arguably not be traced there.

But consider

(2) 'Bald' describes Harry.

(1) is equivalent to (0), Merricks holds, and likewise indeterminate in truth-value.[17] But here 'bald' is *mentioned*, not used. So its vagueness cannot be traced to 'bald': it is perfectly determinate what "'bald'" (note the extra quotation marks!) refers to. So how can the supervaluationist's explanation apply to (1)?

As Merricks notes, there is in fact a pretty standard reply to this: it is that 'describes' is vague. It may not be an intuitive thing to say but it is a natural thing to say, given the equivalence of (0) and (1).[18] What Merricks says about this move is in my opinion the most interesting part of his argument. He says that the supervaluationist view as described is that 'describes' expresses many different relations (or it is indeterminate which of these relations it expresses[19]), and for each of these relations it is determinate whether 'bald' stands in it to Harry (to say that for some relation it is indeterminate whether 'bald' stands in it to Harry would be to embrace metaphysical vagueness). But Merricks worries that this din effect does away with indeterminacy and semantic indecision, contrary to what the supervaluationist intends. Merricks says, "if there is a

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[17] Merricks (2001), p.
[18] Compare here also

> (2) "Harry is bald" is true.

One thing the supervaluationist can say about (2) is that it is plainly false. This is what she should say if she holds on to the view, traditionally associated with use of supervaluationist machinery, that truth simpliciter is truth under all precisifications. And then she ought presumably to say this also about (1). But if she says that it is equivalent to (0), which is another natural thing to say, then the same questions arise as those Merricks raise in the case of (1).

[19] Merricks keeps speaking of 'describes' as expressing many different relations on the supervaluationist view – but he notes that it may be preferable describe the situation as one where it is indeterminate what 'describes expresses. He rightly sets aside the issue as irrelevant to his main point.

determinate fact of the matter as to whether or not 'bald' stands in each and every semantic relation expressed by 'describes' to Harry, then it seems that there is no linguistic vagueness".[20] There is an obvious retort. The linguistic theorist might insist that something like what has been described is *all she means* when she says there is linguistic vagueness. She doesn't mean anything more demanding. But Merricks objects that this is not true to the motivation behind the linguistic theory of vagueness, according to which an expression like 'bald' just is not precisely defined, and some of the semantic features of 'bald' have "been left genuinely undecided".[21] According to the underlying picture, our language is "rough-and-ready, rather than absolutely precise", but supervaluationism fails to be true to this picture.[22] Merricks goes on to say that the picture can be respected if we have metaphysical vagueness, for "a friend of metaphysical vagueness might say that there simply is no determinate fact of the matter whether 'bald' is related by *describes* to Harry".[23] He concludes, "I think linguistic vagueness does justice to the intuitions that standardly motivate it only when understood as a species of metaphysical vagueness."[24]

Merricks' challenge here is interesting. But I think the impression that what we have here is a problem specifically for linguistic approaches to vagueness is deceptive. At bottom the issue is about *higher-order vagueness*: Merricks' complaint against supervaluationism has to do with its perceived failure to accommodate higher-order vagueness. The supervaluationist view described as Merricks describes it would say that for a given vague predicate F, there is more than one set S such that F stands in a semantic (reference-like) relation to S, but for every such relation it is determinate what stands in that relation to what; and F effects a sharp tripartite division between what F

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[20] Merricks (2001), p. 150.
[21] Merricks (2001), p. 150.
[22] Merricks (2001), p. 150f.
[23] Merricks (2001), p. 151.
[24] Merricks (2001), p. 151. This is a good place to compare an intuitive challenge to the idea that vagueness or indeterminacy is merely semantic and not metaphysical: linguistic expressions are part of the world, so isn't saying that they are vague or indeterminate a way of saying that the world is vague or indeterminate? A first remark on this intuitive challenge is: How would this not work also for ambiguity or context-sensitivity? And since metaphysical ambiguity or context-sensitivity is out, something must have gone wrong with the intuitive challenge. And secondly, the natural thing for the semantic theorist to say is that what she predicates of a linguistic expression when saying that it is "vague" is different from what she refuses to predicate of any worldly item when she says no such item is "vague". In effect, it is this second train of thought that Merricks explores.

stands in every reference-like relation to, what it stands in no reference-like relation to, and what it stands in some reference-like relations but not others to. I am sympathetic to the worry outlined. I think worries of this general kind do present a serious problem for supervaluationism. (Although of course supervaluationists have sought to defuse these worries in various ways.) But turn now to whatever view Merricks thinks might do better. How can *that* view, whichever it turns out to be, deal with higher-order vagueness? A standard problem for theories of vagueness *generally* is that they cannot accommodate higher-order vagueness; that they end up positing counterintuitive sharp boundaries somewhere. Without an account in hand of how a metaphysical theorist of vagueness can deal better with higher-order vagueness, Merricks does not have an argument for the metaphysical conception of vagueness over the semantic conception. My diagnosis is supported by a comparison with the case of 'mass', introduced above, where we don't have higher-order vagueness. There it doesn't seem to hurt at all to say that what the indeterminacy in 'mass' amounts to is that the word stands in reference-like relations to two different quantities. It matters for Merricks' discussion that he is concerned with a case where the indeterminacy at issue is different from that in the case of 'mass'.

It may be useful here to compare Mark Heller (1996), who argues against the idea of metaphysical vagueness on the ground that this view cannot accommodate higher-order vagueness (while the idea that vagueness is semantic can – or that is the thought). I don't find either what Merricks holds or what Heller holds particularly compelling: I think higher-order vagueness presents problems for all the standard views. In fact, one motivation for the meaning-inconsistency view is that there is no satisfactory way to accommodate all central intuitions about vagueness; in particular, that every otherwise attractive account is forced to posit unwanted boundaries. This goes equally for accounts that associate vagueness with semantic indeterminacy and accounts that associate vagueness with metaphysical indeterminacy.

5.

My main topic here has been the question of whether vagueness is associated with semantic or metaphysical indeterminacy. While my own sympathies are with the former answer, and generally with the hybrid view earlier outlined, the focus here has been on

problems in settling the issue. The most prominent arguments against taking vagueness to be associated with metaphysical indeterminacy are in effect arguments against metaphysical indeterminacy quite generally – thus ruling out a hybrid view. Even successfully arguing for a semantic account of the nature of vagueness is not sufficient to rule out the possibility that vagueness is associated with metaphysical indeterminacy.

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