Ontic Vagueness: A Guide for the Perplexed[1]

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Abstract: In this paper I develop a framework for understanding ontic vagueness. The project of the paper is two-fold. I first outline a definitional account of ontic vagueness – one that I think is an improvement on previous attempts because it remains neutral on other, independent metaphysical issues. I then develop one potential manifestation of that basic definitional structure. This is a more robust (and much less neutral) account which gives a fully classical explication of ontic vagueness via modal concepts. The overarching aim is to systematically investigate the puzzling question of what exactly it could be for the world itself to be vague.

The idea of ontic vagueness[2] is in one way very simple – it's vagueness in the world, vagueness in what there is as opposed to our descriptions or knowledge of what there is. But glosses like this don't do much more than frame the concept, and they'll do little to appease the prevailing worry that ontic vagueness is somehow mysterious, or even *unintelligible*.[3] Large amounts have been written on the subject, but there remains a lurking suspicion that ontic vagueness is not in dialectical good standing and that those who talk about it are at the end of the day talking nonsense. This suspicion may stem, in large part, from the fact that though much has been written on particular puzzles *involving* ontic vagueness (vague persistence, objects with vague spatial boundaries, vague identity, etc), very little has been written on the

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[2] A note about terminology: for this paper, I'm using 'ontic vagueness' because that's been perhaps the most common term in the literature on the subject. 'Metaphysical vagueness' is probably the better term (see Williams (2008)b for discussion). Perhaps even better would be to stop talking about vagueness altogether and just talk about metaphysical indeterminacy.
[3] See, for example, Dummett (1975) and Horgan (1994).

phenomenon more generally. This, in turn, leads many to worry that ontic vagueness is in fact a topic which cannot be systematically addressed.[4]

This paper aims to allay such worries. I will not attempt to argue for the existence of ontic vagueness.[5] Rather, I'll simply attempt to show that ontic vagueness makes sense – that it can be defined and modelled adequately.

The paper has two main sections: the first gives a basic definitional account of ontic vagueness and the second provides a more robust way of characterizing ontic vagueness. The aim of the former is to show how ontic vagueness can be successfully delineated from other potential forms of vagueness (e.g., semantic or epistemic vagueness), and how such delineation can serve as an adequate definitional constraint. The aim of the latter is to lay groundwork for more substantial theorizing about ontic vagueness. It develops a framework wherein ontic vagueness can be understood via modal concepts and requires no logical revision.

Though the two sections do not stand or fall together – and the more substantial commitments of section 2 certainly aren't entailed by anything in section 1 – the two sections are not independent projects: they dovetail together in very crucial ways. The first section gives definitional constraints (and, as a result, responses to key sceptical worries) and the second section shows one interesting way of theorizing within those definitional constraints. The former, without the addition of the latter, is important but not very substantial – it leaves too many important questions unaddressed to satisfy the sceptic. The latter, without the addition of the former, risks being a theoretical framework without any clear subject matter. Only taken together

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[4] See especially Sainsbury (1994)

[5] 'The existence of ontic vagueness' is a slightly misleading way of putting it, but I'm using it as shorthand for more accurate but also much more cumbersome phraseology (e.g., 'components of ontology such that they are, in actuality, ontically vague').

do the two halves give a clear illustration of how the much-maligned phenomenon of ontic vagueness can in fact be clearly and classically defined and conceptualized.

Within section one, (I) gives the dialectical background; (II) outlines the basics of a definitional framework for ontic vagueness and argues that the non-reductive definition given is favourable to reductive definition; (III) answers some objections and shows how the basic definition given in (II) can be spelled out more robustly. Within section two, (IV) presents a classical framework for ontic vagueness and (V) answers some objections to that framework. (VI) gives a short conclusion.

Section One: A Definitional Account of Ontic Vagueness

I. Background

Despite the amount that's been written on ontic vagueness, surprisingly little work has been put into defining it. Indeed, it's not obvious that debates about ontic vagueness concern a single subject matter we can then proceed to disagree about, simply because no one seems clear what ontic vagueness is meant to be.

But this degree of conceptual flux is extremely worrying for the would-be defender of ontic vagueness, precisely because it leads to a major sceptical challenge. David Lewis (1993) argues that we can have no clear conception of ontic vagueness, and therefore must reject it.[6] Mark Sainsbury (1994) has raised similar criticisms against ontic vagueness, arguing that as yet there is no tenable account of 'worldy vagueness' which both expresses something intelligible and manages to avoid simply collapsing into a form of semantic vagueness; yet until such an account is offered, Sainsbury maintains, we have no right to argue that the world could be ontically

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[6] Lewis aims his arguments specifically against vague *objects* (by which he means objects which are vague in their spatial or spatiotemporal boundaries), but the concerns he raises would generalize equally well to other specific forms of ontic vagueness, or to ontic vagueness understood more generally.

vague. In a nutshell, then, the complaint boils down to a phrase of CB Martin's: that in philosophy 'if you can't whistle it, you don't get it.' The worry is that ontic theorists can't whistle it. And such a worry gives a great deal of support to the lurking suspicion that ontic vagueness is, as Michael Dummett described it, 'not properly intelligible'.[7]

So for those of us tempted by ontic vagueness, some substantial work needs to be done. We need a viable definition of ontic vagueness – one that can appease Lewis' demand for a 'clear picture'[8] and can also avoid Sainsbury's worry that all such attempts will collapse back into semantic vagueness – before we can engage meaningfully in debate. Otherwise, we run the risk that we really are just talking nonsense.

Importantly, the definition must be as ontologically neutral as possible. Discussions on the (im)possibility of ontic vagueness have tended to focus on particular forms it might take: vague objects[9] and the coherence of vague identity[10] have gotten the most attention, though discussion has also extended to persistence,[11] properties,[12] and the 'problem of the many'.[13]

Perhaps as a result, these specific manifestations are often taken as constitutive of ontic vagueness. Ontic vagueness is *defined* as there being an object vague

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[7] See Dummett (1975)

[8] It's unclear exactly what Lewis wants from his demand for a clear picture. If it's a substantial theory, rather than just an appropriate conceptual account, then Section 2 of this paper is more appropriate to address his worries. If, rather, he wants something like a clearly imagined image, then I have little to offer him, but I suspect that might be the case for most theories in analytic metaphysics. See Barnes (forthcoming) for further discussion of the dialectical issues here.

[9] See, e.g., Tye (1990), Zemach (1991), Simons (1999), and Heller (1996).

[10] Gareth Evans offered a seminal argument that vague identity is impossible (Evans 1978), the metaphysical thrust of which is explained in Lewis (1988). For some further discussion of the issue see Edgington (2000) and Parsons and Wooddruff (1995).

[11] See Hawley (2001), Sider (2001), and Van Inwagen (1990).

[12] See Merricks (2001), Schiffer (2003).

[13] See Lewis (1993), Unger (1980), and van Inwagen (1990)

boundaries[14] or an object that vaguely instantiates a 'maximally specific property'[15] or

an object stretched out in a pseudo-modal 'precisificational' dimension.[16] Yet, though

some or all of these might be potential *manifestations* of ontic vagueness, none are *de

jure* characterizations of the phenomenon itself.[17] The issue of ontic vagueness is

largely independent from issues of modality, properties, etc. It seems we ought to be

able to think that there is ontic vagueness while, for example, being a conventionalist

about modality or maintaining a nominalist ontology. Ontic vagueness seems to be a

characterization about what our ontology *is like*, whereas properties, modal

dimensions, etc, are what our ontology *includes*.[18] These questions cut across one

another. An adequate definition of ontic vagueness thus needs to be neutral about

specific ontological commitments. A basic definition of ontic vagueness shouldn't

tell us what there is. It should simply tell us what it means to say that what there is

(whatever that may be) is vague.

II. An Account of Ontic Vagueness – The Basics

1. A basic definition

There has been a general assumption in the vagueness literature that vagueness

has three potential sources – how we represent the world (representational or semantic

vagueness), the limits of our knowledge of the world (epistemic vagueness), or the

way the world is in and of itself (ontic vagueness).[19] So if there is vagueness with

respect to P, it could conceivably be because of the way we describe or represent P,

our epistemic relationship to P, or how things are P-wise. I've given no independent

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[14] This seems to be the view of Tye (1994)
[15] Rosen and Smith (2004)
[16] Akiba (2004)
[17] It might be that *de facto* ontic vagueness is, e.g., exhausted by objects with vague boundaries – but nothing about the basic concept of ontic vagueness entails this.
[18] A relevant analogy: saying one's ontology is *vague* (vs. precise) would be the same kind of thing as saying one's ontology is *sparse*. Whether one's ontology is *sparse* (vs. plentiful/abundant), though, has no bearing on whether it *includes*, e.g., properties, tropes, states of affairs, etc.
[19] See Keefe and Smith (1997)

argument that this trichotomy is exhaustive, but as it's both common and intuitive I'll assume it in what follows. If such a tripartite division is in fact correct, then the account I give here will be *de facto* extentionally adequate, and thus count as a complete definition. Even if the tripartite distinction is mistaken, however, what follows can succeed as a 'working definition'. Since the form of the definition generalizes, it would simply need to be complicated further to accommodate other potential sources of vagueness.

Suppose that vagueness is not epistemic. We would then have two options left for the vagueness of P – vagueness in representation, or vagueness in what is represented itself. That is, if there is no epistemic vagueness then we can conceive of vagueness as an inherent mismatch between representations of the world and the world itself. But that could be primarily due to *either* (or both of) how we represent things *or* how the world is. There are two ends to the reference relation: if vagueness is a result of our words not aligning with the world, then that could be because our words lack determinate truth-conditions, or because it's indeterminate whether certain (determinate) truth-conditions obtain, or some combination of both.   But if these are the only two potential sources of indeterminacy then one thing is clear: if one side *isn't* to blame, the other is. So if we know that there's (non-epistemic) indeterminacy and we know that our representations are wholly blameless, then we can conclude that the source of the indeterminacy is the world itself. This allows us the following counterfactual 'litmus test' for ontic indeterminacy:

(OV) Sentence S is ontically vague iff: were all representational content

precisified, there is an admissible precisification[20] of S such that according to that precisification the sentence would still be non-epistemically indeterminate in a way that is Sorites-susceptible.[21]

The epistemicist can agree with this – she thinks, *de facto*, that all our representational content is *already* precise, so if there were any non-epistemic indeterminacy (i.e., indeterminacy which did not arise from facts about knowledge) around it would be in virtue of how things are non-representationally.[22] The semantic indeterminacy theorist can also agree with this – she thinks, *de facto*, that all indeterminacy arises from our representations, but she should still be happy to grant that *were* any indeterminacy still around after representational features had been precisified, such indeterminacy would be in virtue of how things are non-representationally. If we give our language fully precise truth-conditions and indeterminacy *still* arises, then it must be because it is somehow unsettled whether those truth-conditions in fact obtain. And that's a fact about the world.

(OV), of course, tells us nothing very substantial about the nature of ontic vagueness. Nor is it intended to. It is a negative definition, intended to lay the parameters for debate (and show that they can be laid systematically), rather than to

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[20] Note that we are dealing here with sentence tokens, not with sentence types. And it's sufficient for ontic vagueness that a single admissible precisification leaves us with lack of determinacy. Suppose 'is red' is semantically indeterminate between specific properties R1, R2, and R3, and further that object x is ontically indeterminate between R1 and R2. If we precisify 'x is red' to mean 'x is R3' the sentence comes out (determinately) false, whereas if we precisify 'x is red' to mean 'x is R2' it is (ontically) indeterminate.

[21] Importantly, (OV) can be used as a litmus test for the presence of ontic indeterminacy as well. Just replace all uses of 'vagueness' with 'indeterminacy' and leave off the final clause about sorites-susceptibility (where the precisification of an indeterminate sentence is just the resolution of that indeterminacy in one of the salient determinate ways, e.g., assigning Newton's use of 'mass' to either rest mass or proper mass). Vagueness is thus understood – perhaps simplistically – as that special form of indeterminacy which gives rise to a Sorites series. In general, I'm inclined to think that the more interesting notion is ontic indeterminacy. The key idea seems to be whether the world itself could leave things unsettled. Whether that unsettledness is soritical is, I think, a less substantial question.

[22] She may, of course, resist this if she thinks the epistemic account of indeterminacy is somehow implicit in the meaning of 'indeterminacy', but I don't think we should grant her this. It looks like someone who is an epistemicist about *vagueness* should be open to the possibility of ontic *indeterminacy* (say, at the level of microphysics).

give a reduction or analysis of ontic vagueness. This does not, however, mean that (OV) is in its own right uninformative. It can show why Sainsbury-style worries that any definition of ontic vagueness is unstable (collapsing back into semantic vagueness) are unfounded, and it can go some way toward addressing Lewis's worry that there is no 'clear picture' of ontic vagueness (see section (III)). Moreover, what (OV) does not say is almost as important as what it does. (OV) says nothing about vague objects, vague properties, vague identity, non-standard logic, etc. (OV) can allow these as specific forms of ontic vagueness, but it takes none of them as constitutive of it.

2. The importance of the counterfactual

Even the most steadfast adherents of ontic vagueness are unlikely to claim that there is *no* semantic vagueness in proposed cases of ontic vagueness,[23] given that nearly all our language is vague. Most any plausible example of ontic vagueness would likely be an example of *both* semantic and ontic vagueness. The claim of ontic vagueness is thus best understood as this: the *source* of at least *some* of the vagueness is ontic, not semantic. The best way of expressing this thought, I think, is via (OV). That is, if complete precisification failed to make the sentence in question determinate, the remaining indeterminacy would be ontic. But since many philosophers maintain that semantic precisifications are merely possible, rather than actual, this idea needs to be framed counterfactually.

For example, suppose that the proposition 'Daniel is bald' is vague.[24] As things stand now, 'Daniel is bald' is indeterminate. But now suppose that we were able to fully precisify the truth conditions of the predicate 'is bald' – bald, under an

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[23] Unless, of course, they think that all vagueness is ontic vagueness – but I take it that this is an extreme position, and one which most defenders of ontic vagueness wouldn't support.

[24] This is a toy example, chosen simply because it's easy to explain. What you might consider salient examples of ontic vagueness depends largely, if not entirely, on metaphysical commitments elsewhere. And the fact that no-one ever agrees on those is the reason I'm using a toy example.

admissible precisification, comes to mean 'has less than 846 hairs'. Further suppose, however, that Daniel has 845 hairs very firmly attached to his scalp, and one hair which is teetering on the brink, about to be dropped – that is, imagine a scenario in which it's indeterminate exactly how many hairs Daniel has. We now have a fact of the matter about what 'bald' means, and we know that Daniel will fall under its extensions if and only if he has less than 846 hairs. The trouble is: there seems to be no fact of the matter about how many hairs Daniel has.

Thus, for the case in question, even though we have precisified the meaning of 'bald', we still have vagueness in whether or not Daniel qualifies as being bald. The next obvious place to look for representational vagueness might then be in the referring term 'Daniel'. Suppose, for 'problem of the many'-type reasons that there's no fact of the matter about what collection of particles 'Daniel' refers to.[25] We would then need to further precisfy 'Daniel', stipulating that 'Daniel' refers to the clump of atoms $x(1)$. . .$x(n)$ and excluding all others. And we can continue this process for the rest of the semantic components of the example.

But now suppose that, once this process of precisification is complete, there is still no fact of the matter as to whether or not the truth conditions for 'Daniel is bald' obtain. If this were the case, it would be a fact about Daniel himself rather than about the words we use to describe him. The representational content in this scenario is fixed. 'Daniel is bald' now has fully specified truth conditions (i.e., we know exactly what it takes to make it true/false). Thus to characterize the vagueness at hand we will have to look elsewhere – at whether or not those truth-conditions in fact *obtain*.

This, then, would be an example of ontic vagueness. The truth conditions are fully specified, so the indeterminacy can only be in whether those truth conditions are

[25] See, e.g., Lewis (1993).

in fact met. There are more metaphysically robust ways of spelling out this simple idea, but more on this later (see III.1). The basic thought, though, is that if you've precisified representationally as a far as you can and still failed to reach determinacy, then there's nowhere left to look but the world for the explanation of the remaining indeterminacy.

3. Against a more substantial definition

(OV) is a negative definition, and so can encounter the criticism that it is not illuminating.[26] I don't think this criticism is apt, however. Nor do I think the defender of ontic vagueness would benefit, at this stage in the dialectic, from pursuing a reductive definition.

A major sceptical worry is that ontic vagueness can't be appropriately explicated. The epistemicist defines vagueness in terms of the more familiar concept of knowledge – it's vague that P just in case it's *unknowable* (for distinctive reasons) that P. Likewise, the standard semantic-indeterminacy account of vagueness gives us an account of vagueness which we can easily grasp – she says that vagueness arises because of *semantic indecision* (at either the first-order or meta-level).[27]

These explanations of vagueness are reductive – they explain the existence of vagueness in terms of something more familiar, and perhaps easier to understand. They thus can give insight into how the respective theories handle the problem of vagueness, and they can generate informative reductive definitions. For example, the semantic theorist can say something like: semantically indeterminate that P iff: our linguistic practice doesn't determine whether P. It's not obvious, though, that the

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[26] It's important to note, though, that all "negative definitions" aren't the same – (OV) says substantially more than something like "Vagueness is ontic iff: it isn't semantic" (the type of definition pursued in, e.g., Hawley (2001)). These more basic negative definitions don't allow, for example, for the possibility of 'mixed cases' – cases where the vagueness in question is, e.g., a mixture of semantic and ontic.

[27] Though whether either of these projects is successful – and whether vagueness can in general be explained non-circularly – is far from uncontroversial. See Barnett (forthcoming) and Field (2000).

ontic theorist can provide an analogous reductive explanation. A negative definition like (OV) certainly doesn't do the job.

But it's also far from obvious that the ontic theorist should be expected to provide such explanations, or that her theory is impoverished if she cannot do so. We need a definition of ontic vagueness that's general enough to frame debate – something everyone can agree to disagree about. Semantic and epistemic theories can do this reductively. But this is largely because these theories have their reductive ambitions built into them: quite naturally, semantic theories reduce to facts about truth and epistemic theories reduce to facts about knowledge. Both theories have an obvious reduction base (truth and knowledge, respectively) directly correlated to them. In contrast, if the metaphysician were to attempt a reductive definition, her theory of vagueness doesn't yield this useful reductive correlation. She could try to reduce ontic vagueness to facts about tropes, facts about states of affairs, facts about universals, etc; her choice would depend on what her ontological commitments are elsewhere. But any such reductive definition wouldn't be appropriately general – i.e., generally agreed upon as a basic characterization of the phenomenon – because it'll only be helpful to those who share her ontology. That is, if she reduces to tropes, the trope theorists will be happy, but everyone who believes in universals won't give her definition the time of day. To effectively frame debate, a definition of ontic vagueness needs to be appropriately general. But no reduction a metaphysician gives is going to be appropriately general. So she shouldn't try for reduction – a non-reductive definition will be more useful, dialectically.

More importantly, in contrast to rival theories of vagueness it's plausible that ontic vagueness should be taken as a metaphysical primitive – a fundamental bit of metaphysics which does not admit of further reduction or analysis (just as some

theories maintain that tense or modality are irreducible). If this is the case, then any attempt at reductive explanation is obviously misguided. Thus the explanations, definitions, etc. of the ontic theorist may well be less 'tight' than the reductive ones provided by other theories of vagueness, but given that it's plausible that she is talking about a metaphysical primitive we should hardly find this surprising, or take it as a criticism of her view.

In a nutshell, then: we have a demand that the ontic theorist "tell us what ontic indeterminacy is like". But if "telling what it's like" involves something like reductive analysis, then the ontic theorist can't win – ontic indeterminacy is metaphysical, and thus quite likely to be unanalyzable (it at least won't be analyzable in a way that's neutral enough to frame debate). As a consequence, I think that (OV), which both outlines specific criteria and engages directly with other theories of vagueness, is helpful and appropriate, despite being a negative definition. Because of its reference to other, perhaps more easily analyzed, notions of indeterminacy, (OV) allows us to get at ontic indeterminacy via the more familiar phenomena it incorporates. This allows for an intuitive 'step-up' (which is further elaborated in section (III.1)) to the idea of ontic vagueness, without attempting reductive analysis.

III. Problems with Precisification

Two related objections arise, both based on the idea that (OV) can only help us to understand ontic vagueness if we're employing an impoverished notion of precisifcation. If precisifcation is ever truly complete, there would simply not be any question of vagueness left.

1. An Improper Account of Precisification?

1.1 How Can There be Indeterminacy Given Semantic Precisification?

The first objection, which I take to stem from both Lewis (1994) and (1983) is the simple thought that if a sentence remains vague after precisification, you simply have not precisified enough. We cannot conceive (cf. Lewis (1994)) of *what it would be* for a predicate to be wholly specified and yet the sentence remain indeterminate. Surely precisification *just is* the resolution of indeterminacy. In response to this I can offer the following model – a metaphysical elaboration of the idea in question – based on an account of *truthmakers* and how they relate to vague sentences. The model won't convince the ardent sceptic (the person who greets ontic vagueness with a 'blank stare') but it will hopefully help the person who simply needs further elaboration of (OV).

1.2 An Explication in Terms of Truthmakers

It's important to note here that I don't want to build anything metaphysically deep into the idea of truthmakers – their usage here will be largely instrumental. There's a varied and interesting debate about what truthmakers are,[28] whether every truth has a truthmaker,[29] and whether the truth-making relation is one of necessitation.[30] These issues, though intriguing, are wholly orthogonal to the discussion here, and I will thus leave them to the side. I simply wish to understand 'truthmakers' as a way of speaking which highlight the bits of ontology – whatever they may be, according to your particular metaphysical commitments – that make true things true.[31]

Given the model on offer, we might think of a semantically indeterminate sentence as one that lacks a unique truthmaker (or unique set of truthmakers). There are a range of candidates that would all serve equally well as truthmakers for that

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[28] States of affairs for Armstrong (2003), 'moments' for Mulligan, Simons, and Smith (1984), and the intrinsic nature of objects themselves for Parsons (1998).
[29] See, e.g., Armstrong (2004) and Cameron (forthcoming).
[30] See, e.g., Heil (2003).
[31] So, e.g., "grass is green" is made true (at least in part) by grass, and not by fish.

sentence, and we simply haven't picked out a specific one/set to do the job.[32] The

admissible precisifications, then, are the range of possible situations where one of

these (sets of) truthmakers is picked out as *the* truthmaker(s) for the sentence.

Likewise, a sentence has been fully precisified when one of its admissible

precisifications has been chosen; that is, when the sentence comes to have a unique

truthmaker (or set of truthmakers).

In contrast, if the vagueness in question is ontic, we can decide what the

truthmaker(s) for the given sentence *is* and still have vagueness. If the sentence has

been precisified, we know exactly what it takes to make it true – i.e., we've assigned

it a precise truthmaker (or set of truthmakers). But vagueness still arises because it's

underdetermined whether that particular truthmaker (or any particular member of that

set) in fact *obtains*.

This, then, gives a more substantial way of spelling out the basic framework of

(OV). A sentence P is ontically indeterminate iff: were all the representational

content precisifed (i.e., were we to assign a specific set of truthmakers to every

sentence in the language), there would be an admissible precisification of P (i.e., at

least one of the things which is capable of making P true) such that P is still (non-

epistemically) indeterminate according to that precisification (i.e., for that specific

truth condition for P, it is unsettled whether the truth condition *in fact obtains*).

1.3 Formalization

It's helpful to put this a bit more rigorously. We can characterize generic

indeterminacy[33] in terms of truthmakers as follows:

$\quad$ (GV) ∇p at w iff $\exists x \nabla (Ixw \ \& \ x \Rightarrow p) \ \& \sim \Delta \exists y (Iyw \ \& \ y \Rightarrow p)$[34]

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[32] It's important to note, though, that in cases of vagueness a sentence will be *indeterminate* over a range of truthmakers, and that range itself will probably be vague; this is in contrast to the case where a proposition lacks a unique truthmaker because it is underspecified (i.e., 'There's a man at the bar' when several men are at the bar; any one of them will do as the truthmaker, yet the proposition is not vague).

[33] Again, understanding vagueness as simply indeterminacy plus Sorites-susceptibility

Basically, p is vague at a world, w, if and only if there is something such that it's

indeterminate whether that thing exists at w and makes p true at w and it's not

determinate that there is something which makes p true at w. When a conjunction is

indeterminate, this indeterminacy can be due to indeterminacy in either (or both)

conjuncts. In the model on offer, the distinction between semantic and ontic

vagueness can be cast in terms of which conjunct from the first conjunction is the

source of the indeterminacy.

Semantic vagueness would then be understood as:

(SV) $\nabla_s p$ at w iff $\exists x(Ixw \ \& \ \nabla x \Rightarrow p) \ \& \ \sim\!\Delta\exists y(Iyw \ \& \ y \Rightarrow p)$

So, something is semantically vague at w if and only if something exists at w and it's

indeterminate whether that thing makes p true. Ontic vagueness, in contrast, will be

understood as:

(OV*): $\nabla_o p$ at w iff $\exists x(\nabla Ixw \ \& \ x \Rightarrow p) \ \& \ \sim\!\Delta\exists y(Iyw \ \& \ y \Rightarrow p)$

P admits of ontic indeterminacy when x makes p true[35], but it's indeterminate whether

x exists at w. What it takes to make p true is settled, but it's unsettled whether what it

takes to make p true obtains.[36]

1.4 Ontological Neutrality

The definitional account of ontic vagueness presented here, again, is

ontologically neutral – what you take these truthmakers to be will depend on what

your commitments are in other areas of metaphysics. They might be instantiations of

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[34] ∇ means 'it is indeterminate that' and Δ means 'it's determinate that'. The quantifier is possibilist; 'Ixw' is understood as 'x exists at w' and 'a$\Rightarrow$p' means 'a makes p true'. It's important to note that 'a$\Rightarrow$p' is not being said to be true *at w;* merely that a is a possible object whose existence would suffice for the truth of p (and world-boundedness is assumed, so we don't have to relativise to w). '$\nabla_s p$' means 'p is semantically indeterminate' and '$\nabla_o p$' means 'p is ontically indeterminate'.

[35] Where 'x makes p true' means just that at any point in modal space at which x exists, p is true.

[36] This makes it clear that there can be mixed cases of ontic and semantic vagueness, since (OV*) and (SV) are clearly compatible.

maximally specific properties;[37] they might be states of affairs; they might be tropes; they might simply be class membership.[38] I take this neutrality to be a virtue of the model, since it seems that mapping out the conceptual space for ontic vagueness shouldn't commit us to specific, apparently independent, metaphysical theories.[39]

The point of the above considerations is to offer someone who asks 'but *what would it be* for vagueness to remain after the semantic components have been precisified?' something of a model. It won't, of course, allay the worries of the ardent sceptic[40] -- though I doubt anything less than reductive analysis would satisfy such a sceptic, and as I explained in II.3, I don't think the ontic theorist should attempt to offer such analysis.

2. A Vacuous Counterfactual

Another main objection is based on the counterfactual nature of the account. The ontic theorist who accepts (OV) is also, it seems, committed to:

(OV)+ For any vague P: if all the representational content were precisified and P was still indeterminate, P would be ontically vague.

The worry is that (OV)+ is true, but vacuously so, simply because it has an impossible antecedent. Therefore my opponent can agree that the conditional presented is *true* without thinking that the account is in any way informative. It's just true in the same way as 'if two plus two were to equal five, then pigs would fly'.

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[37] See Smith and Rosen (2004)

[38] The one position that might be ruled out here is 'ostrich' nominalism – it seems that the ostrich nominalist cannot meaningfully discriminate between semantic and ontic forms of vagueness (NB: that's not to say that for the ostrich nominalist all vagueness is semantic; it's simply that the semantic/ontic distinction isn't a useful one for her).

[39] It might be protested, however, that I'm importantly non-neutral about truthmaker maximalism – the idea that every truth has a truthmaker. I don't think, though, that the account does commit to maximalism, it just maintains that truths which can be *vague* must have truthmakers, which I find rather plausible (so, e.g., the truths of logic or math needn't have truthmakers). And since the theory doesn't commit to necessitarianism (see note 28), truths for say, negative existentials (which are vagueness-prone) needn't involve bizarre ontology (see Heil (2004)).

[40] E.g., for someone who *just can't make sense* of unsettledness in which state of affairs obtains, there's little I can say (though the idea is elaborated in Section Two of the paper) – though an impasse like this is in now way unique to ontic vagueness (cf. Quine's claim that he *just can't make sense* of intensional locution).

I have three responses to this objection. Firstly, despite the fact that in standard semantics counterfactuals with impossible antecedents are vacuously true, there is some motivation to think that this is not the case.[41] But putting this worry aside, even if you accept that counterfactuals with impossible antecedents are vacuously true, what reason is there to think that the antecedent of the counterfactual offered here is impossible? It can't simply be that ontic vagueness is impossible, for that would just be to concede the correctness of the account (ontic vagueness only being mentioned in the consequent). Thus to hold that the antecedent is impossible because ontic vagueness is impossible is to agree that the antecedent's obtaining leads to ontic vagueness obtaining – which is simply to agree with my counterfactual definition. So there would need to be further (independent) motivations for thinking that it's impossible to have an instance of vagueness in which the representational content is precisified but indeterminacy remains.

Finally, it's also important to note here that the counterfactual structure of (OV) is just a useful way of getting at the concept of ontic indeterminacy. To be neutral and general enough, the counterfactual is needed. But the counterfactual condition is a helpful intuitive step-up – nothing more.[42] You could think that it's metaphysically impossible for all representational content to be precisified (so (OV) is vacuous) but still have no problem with ontic vagueness, because (OV*)[43] is non-vacuous. Even if it's impossible to get at it through precisification, there could still be ontic indeterminacy.

Section Two: A Theory of Ontic Vagueness

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[41] For example, assuming dialethism is impossible, there's a fair amount of intuitive force behind the idea that 'if Priest's LP were the correct logic, anything would follow from a contradiction' is a false statement. For further discussion of these issues see Taylor and Vander Laan (2004) and Nolan (2005).

[42] I.e., it's not necessary to our understanding of ontic vagueness – it's just a nice way of getting there.

[43] $\nabla_o p$ at w iff $\exists x (\nabla Ixw \, \& \, x \Rightarrow p)$ – this is a biconditional, not a counterfactual, and there's nothing in either side about representational content.

All that's been said so far is largely in the way of groundwork. With that groundwork in place, we can proceed to the more interesting question of how we should reason about or conceptualize ontic vagueness. That is, once we have the basic idea given by (OV), we can begin to give more robust models of that idea.

It's important to note that no part of my theory-neutral 'definitional account' includes commitment to the following (very non-neutral) theory. But it's useful to show that (OV) can be given a substantial and fully classical elaboration, particularly for those suspicious that the previous material, unless it's paired with a treatment of some of the serious semantic issues ontic vagueness involves, would only amount to hand-waving. C.B. Martin demanded that we be able to whistle it, but this section is for those that aren't satisfied until someone's written the score.

In the following sections, I attempt to set out a model for understanding ontic vagueness. According to the theory I develop, we can allow for genuine ontic indeterminacy while at the same time maintaining a fully classical, bivalent logic and avoiding the pitfalls of 'third-category' theories of vagueness.

IV. The View

1. Desiderata

I find the following characterization of ontic vagueness quite plausible: that when p is ontically indeterminate, there is not some special state of affairs – the state of affairs of p's being indeterminate – which obtains. Rather, there are two possible states of affairs – the state of affairs of things being such that p and the state of affairs of things being such that not-p – and it's simply indeterminate which of these two states of affairs in fact obtains. Moreover, I think the best (and perhaps the only) way of cashing out this conception of vagueness is from a classical framework. So I take

the two main desiderata of a theory of ontic vagueness to be rejection of third-category conceptions of indeterminacy and preservation of classical logic.

Thus for a case of ontic indeterminacy with respect to p, it should be true to say that $\Delta(p \vee \sim p)$. There are only two ways the world could go, a p way and a not-p way; it's just that the world has left it unsettled which of these ways is in fact the case (so ∇p and $\nabla(\sim p)$).[44] Excluded middle holds for cases of ontic indeterminacy.

Likewise, if p is ontically indeterminate, it will still be the case that $\Delta(Tp \vee Fp)$ – i.e., it will be determinate that p is either true or false. These are the only two options. But again, it will simply be unsettled which truth value p in fact has. So $\nabla(Tp)$ and $\nabla(Fp)$. Still, because we know that it's determinately the case that p is *either* true or false, bivalence holds for this interpretation of ontic indeterminacy.

This is in contrast to much of the standard literature on ontic vagueness.[45] Ontic vagueness has generally been described in terms of there being some object, o, and some property P such that 'it's neither true nor false' that o instantiates P.[46] This characterization of ontic indeterminacy has lead to the rejection at least of bivalence, and often of classical logic entirely (mostly for a 3-valued logic, though sometimes for degree theory). Yet such departures seem unwarranted as responses to the phenomenon of ontic vagueness. Tye (1990) correctly points out that for some o which is borderline P, 'it seems a mistake to assert [of the proposition 'o is P'] that it is true. . .[but] on the other hand it seems no less mistaken to assert that it is false'. Yet Tye, like many others, moves from lack warranted assertability to lack of truth; if we cannot assert that 'o is P' is true, the thought goes, then it must be the case that 'o

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[44] The treatment of ontic vagueness using truthmakers (given in (OV*)) is illustrative here. It's not that when p is indeterminate there is a separate truthmaker, the state of affairs of p's being indeterminate, which makes it true that p is indeterminate. Rather, there are two possible states of affairs, p and not-p, and it's simply *unsettled* which one in fact obtains.

[45] See, for example, Broome (1984), Parsons (2000), Garrett (1988), van Inwagen (1990) and Tye (1990).

[46] See, e.g., Tye (1990) and van Inwagen (1990).

is P' is not true. But I see no reason to follow that line of reasoning. We can maintain that it's unassertable that 'o is P' is true, even maintain that 'o is P' is indeterminate, while at the same time maintaining that 'o is P' is *either* true or false, and determinately so, quite simply because those are the only two options.

The benefits of such an understanding of ontic vagueness are clear. For starters, the logic suggested by it is fully classical: there's no need to worry about third truth values, lapses in bivalence, or non-standard accounts of validity. Thus not only can ontic vagueness be safe from the headache of formulating non-standard logics, it can be safe from objections based on its need to use such logics as well.

Moreover, the account on offer seems simpler and more parsimonious than the alternative (i.e., various ways of understanding p's indeterminacy as a unique state of affairs). Basically, why go in for three kinds of situations – the way things are when they are p, the way things are when they are not-p, and the way things are when p is indeterminate – when you can get away with two and say that sometimes the world doesn't decide between them? The latter strategy seems more straightforward.

Finally, and perhaps most importantly, such an approach also manages to avoid objections like those raised in Wright (2003) to 'third-category' theories of vagueness. Wright's worry, levelled against those theories that construe indeterminacy as some special, distinct category lying 'between' truth and falsity is in essence this: if we carve out a special, distinct category for indeterminacy, then we seem to have lost the notion of indeterminacy as things not quite being 'settled' between different options. If there's a unique way for things to be when p is indeterminate – namely, the way they are when indeterminately p obtains – then indeterminacy with respect to p, it seems, is no longer unsettledness between p obtaining and not-p obtaining; rather it's just some state of affairs (which we've

decided to label 'indeterminately p') obtaining, just in the same way that p would

obtain or not p would obtain. But that seems wrong. Intuitively, p's indeterminacy

shouldn't just be another way things could be – a third option between p and not-p.

p's indeterminacy should be things being somehow unsettled between p and not-p.

And that's the picture a bivalent semantics would capture. There are only two options

– the state of affairs that p or the state of affairs that not p – but p can be indeterminate

if it's undecided which of these two (exhaustive and exclusive) states of affairs obtain.

Positing a distinct state of affairs for indeterminate-p would lose grip on this basic

notion of unsettledness, and immediately invite conceptual regress. Thus a bivalent

semantics – one which can side-step such 'third-category' worries – seems highly

desirable.

2. A Model

But how, then, to model such a characterization of ontic indeterminacy? The

most straightforward way, I think, is to treat indeterminacy (∇) and its dual

determinacy (Δ) as types of pseudo-modal operators – a familiar move from the

literature.[47] Determinacy operators are often thought of as operators which mimic the

behaviour of modal operators but range over *precisifications*.[48] Determinacy would

then be the analogue of necessity; something is determinately true if it is true at every

precisification. Indeterminacy, however, cannot in the same way be analogous to

possibility; all necessary things are also possible but of course the same can't be said

for determinate and indeterminate things. Instead, we should treat indeterminacy as

the analogue of contingency – something is indeterminate if it is true at some

precisifications, but not all of them.

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[47] See, e.g., the discussion in Williamson (1994)
[48] This is, of course, the idea which got started with Field (1973) and Fine (1975).

For the purposes here I take precisifications to be possible worlds – not just *like* possible worlds, they *are* possible worlds.[49] The set of precisifications will be the set of possible worlds closest to the actual world (see below). Importantly, these must be ersatz possible worlds – abstract representations of ways things could be – for I will appeal to the distinction between the actual world and the actualized world that is familiar from ersatz theories of possible worlds but is missing from Lewisian concrete realism.[50]

The distinction arises for the ersatzist precisely because possible worlds are abstract representations, and yet the world that we are literally a part of is not an abstract representation – it is a concrete individual. So there is the actual world – a mereological sum of concrete objects – that is not one of the possible worlds. And there is the actual*ized* world – the abstract world that represents things as being as they are as opposed to representing things as being as they are not. My proposal is this: that every possible world is fully precise, but that if there is ontological indeterminacy it is indeterminate which of the possible worlds is the actualized world – that is, it is indeterminate which world, out of the many worlds that represent things to be a precise way, is the one that represents the way the actual world is.[51]

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[49] In everything that follows, how ontologically committal you should be about these worlds is entirely up to you. You can conceive of them as part of the very bedrock of your ontology. Or you can conceive of them as useful tools employed for doing semantics, but not part of the fundamental structure of the world. Nothing much hangs on this. I'm not *reducing* ontic vagueness to facts about these worlds – I'm just using them to help model it.

[50] For a similar uses of ersatz theories of modality for modelling ontic indeterminacy, see Barnes (2006) and Williams (2008); Williams' view differs from my own in that he takes the presence of ontic vagueness to signal *multiple* actualized worlds (and gives up bivalence as a result). See Williams (forthcoming) and Barnes and Williams (forthcoming) for discussion.

[51] Haven't I just contradicted (OV), where I said that a sentence is ontically indeterminate iff there's an admissible precisification (wherein all the representational content is fully precisified) such that the sentence is still vague? On this model, it wouldn't make any sense to say that a sentence is vague *at a precisification*. No worries, this can be easily fixed. I was using the ontologically deflationary notion of 'precisification' in (OV) because it has familiarity and purchase within the vagueness debate. But for those wanting to endorse the more robust notion of precisification employed here, just replace talk of 'admissible precisifications' related to (OV) with 'fully specified set of admissible truth conditions'. More cumbersome, but nothing should be lost in translation.

This result basically falls out of the combination of an ersatz modal theory with a supervaluationist treatment of determinacy and indeterminacy. According to standard ersatz theory, each world represents itself (and none other) as being actualized – i.e., each world says of itself 'I'm actualized'. So imagine there are two worlds in the space of precisifications, w and w*. W says 'w is actualized; w* is not'; W* says 'w* is actualized; w is not'. So at every world it's true that one, and only one, world is actualized.[52] Determinately, there is only one actualized world. Yet the worlds *disagree* over *which* world is actualized – w* says is w*, w says its w. So determinately only one world is actualized, and determinately either w or w* is actualized, but it's *indeterminate* whether w is actualized and *indeterminate* whether w* is actualized.

That's why bivalence and excluded middle both determinately hold. Every possible world – *a fortiori* every possible world in the set of precisifications – is such that excluded middle holds and such that it allows for the modelling of bivalence, and that is what it is for bivalence and excluded middle to hold determinately. So for all p, it's determinate that p is either true or false; but it's indeterminate which, since some worlds in the set of precisifications are precisely such that p is true and others precisely such that p is false, and it's indeterminate which of them is actualized.

If we understand ontic indeterminacy as simply things not being 'metaphysically settled' between p and not-p, even though it's fully determinate that those are the only two options, then we can reasonably invoke a closeness relation according to which the nearest possible worlds are those which hold everything else fixed but settle those things which had been left unsettled. This is the closeness

[52] This is a departure from standard supervaluationism – there's a single best precisification, it's just indeterminate which precisification is that single best precisification (whereas on standard supervaluationism all admissible precisifications are equally good). This makes the model structurally analogous to the 'non-standard' supervaluationism of McGee and McLaughlin (2005), and allows for the endorsement of bivalence.

metric that will determine the set of possible worlds which count as precisifications. If we think of the space of possibilities as getting increasingly weirder as it expands, then on a basic model like this:
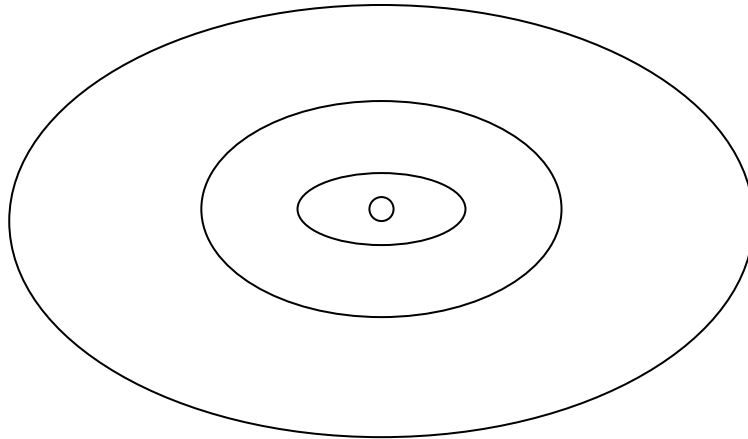
going from outside in we'd find, say, worlds where gravity obeys the inverse cube law, worlds with talking donkeys, worlds where I'm an acupuncturist instead of a philosopher, and, finally, the worlds we count as the precisificational dimension.

Though p may in fact be indeterminate, at any given precisification (i.e. at any given possible world in the set of precisifications) it can only (and must) have a polar truth value. As previously mentioned, p is determinately true if it is true at every admissible precisification. Conversely, p is indeterminate if it is true at some precisifications but false at others.

But *that's* neither new nor original. What is distinctive about the account on offer is the claim that the actualized world is not different in kind from the admissible precisifications. The actualized world *just is* one of the members of the set of (fully precise) worlds classed as admissible precisifications. We can salvage the notion of ontic indeterminacy, however, because it is indeterminate *which* precisification is the actualized world. That is, although we know that only one of the multiple candidates

for resolving the indeterminacy of p can be the actualized world and each of the, as it were, 'actual world candidates' are fully precise, we maintain a notion of ontic indeterminacy because there is no fact of the matter as to which of these world candidates is actualized. Ontic indeterminacy with respect to p, in this sense, consists in there being at least two worlds (precisifications) such that one is a not-p world and the other is a p world, and it is indeterminate which is the actualized world.

To clarify, the proposal here is that, determinately, one (and only one) of the worlds we count as precisifications is actualized. There can be ontic indeterminacy, however, (despite the fact that each candidate world is fully precise) because it is indeterminate *which* world is actualized. Determinately one and only one world is the actualized world, but there is no world such that determinately it is the actualized world.

This, then, is one potential manifestation of (OV). When we precisify representational content, we decide for each sentence of the language what its truth conditions are – in this case, we decide for each sentence, at each precisification, whether it will be true or false.[53] But there is still room for indeterminacy, despite the fact that language has been fully precisfied, because it can be indeterminate which precisification is *actualized* (i.e., which set of truth conditions in fact obtain).

3. Truth in the model

The above picture goes a long way towards providing a characterization of ontic indeterminacy that remains fully classical. Things become slightly more complicated, however, when we ask what it is for things to be true according to the model on offer. The typical ersatzist will say that 'P' is true iff: the actualized world says that P. Something quite so straightforward obviously can't be maintained on this

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[53] E.g., if the ersatz worlds are sets of propositions, we assign sentences to propositions.

account, however, because we need to be able to give a characterization of the truth of ∇P, but ∇P is not true at any of the actualized-world candidates.

Because of this, the account of truth on this characterization of ontic indeterminacy can be disquotational, but only *disjunctively* disquotational. That is, the truth conditions for basic and determinacy-involving sentences can be given, but they will not be uniform. Straightforward disquotations are supplied, but they will differ depending on whether a sentence contains ∇, Δ, or is determinacy-operator free. So, when P is free of determinacy-operators:

‘P’ is true at w iff: w is such that P

Otherwise:

‘ΔP’ is true iff: $\forall w$ P is true at w[54]

‘∇P’ is true iff: $\exists w, w'$ P is true at w and $\sim P$ is true at w’

The truth conditions for sentences involving determinacy operators thus build on the basic conditions for the truth of operator-free sentences.[55]

This might be seen as a weakness of the model on offer, but I actually think it’s a benefit, as the truth conditions given above are exactly what we should expect for semantics involving indeterminacy. The truth conditions for sentences involving notions of determinacy or indeterminacy are, as it were, ‘built up’ out of the basic conditions for the truth of simple (non-determinacy involving) sentences. And this is precisely the picture we want if we’re conceiving of indeterminacy as ‘unsettledness’ between the two (exhaustive and exclusive) poles of truth and falsity, rather than as a kind of third-category status. Truth conditions for sentences that involve notions of determinacy shouldn’t be just like truth conditions for basic sentences, because

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[54] With ‘w’ here restricted to the space of precisifications.

[55] And sentences involving ‘$\sim$’ and ‘$\wedge$’ will have their truth conditions in a similar fashion.

sentences that involve notions of determinacy aren't of a kind with basic sentences. They are facts about the settledness, or otherwise, of those basic claims, and so the truth conditions for them should be, in some sense, compositional on the truth of those basic claims.[56]

That p is indeterminate is just the idea that there is no unique, determinately correct way of representing how things are at the actual world with respect to p. That p is determinate is just the idea that we can give a uniquely correct representation of the actual world with respect to p. So to model claims about either of these notions, we first give the basic semantics for 'p', exactly along the lines of standard ersatz theory – that is, we see whether the best representation of the actual world says p. Then, to model claims about p's determinacy status, we see whether there is a determinately best candidate for being the best representation of the way the actual world is, and if there isn't, we see whether or not all the candidates for representing the way the actual world is agree about p.

Intuitively, this can be characterized as the distinction between what's *true in* a world and what's *true according to* a world. Basic sentences are true *in* a world w – you only need to look at the qualitative state of w to determine whether the sentence is true. In contrast, sentences involving indeterminacy are true *according* to a world w – w can represent them as true, but to evaluate their truth you can't just look at what's going on in w; you also have to look at what's going on in all the worlds w sees. So, for example, to evaluate whether ∇P is true at w, you can't just look at w. You have to look at the truth value of P at all the other worlds in the space of precisifications.[57]

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[56] In order to say this, I have to allow that truth and determinate truth come apart (though I'm not committed to the determinate truth of any instance of 'P & ¬ΔP'). Truth is not equated with 'supertruth' as it is on standard supervaluationist models, and P does not entail ΔP. See Barnes and Williams (forthcoming) for detailed discussion.

[57] A similar move can allow us to embed determinacy operators into, e.g., modal claims (□ΔP), using non-acutualized possible worlds and a selection relation that takes you to a sphere of other possible

The same is true for, e.g., sentences involving modal claims. An atomic sentence P can be true *in* w – to evaluate it, you only have to look at the qualitative state of w – but □P is only true *according* to w – to evaluate □P you have to look at the status of P at all worlds accessible from w. That's the intuitive idea behind the (admittedly somewhat messy-looking) disjunctive account of truth, and I'd argue that the preservation of this idea is worth making things slightly more complicated than standard disquotation.

4. Distinctions

It's important here to briefly distinguish the view on offer from other modality-heavy models of ontic vagueness that have been put forward. Hopefully a few brief distinctions will help to clarify what exactly the position presented here amounts to. First off, as briefly noted this proposal is distinct from more familiar models of indeterminacy-in-terms-of-precisifications theories in several ways. Primarily, it doesn't just draw analogy to modal space (as in, e.g., Parsons and Woodruff (1995)) but rather claims that precisifications *are* worlds. Just as we familiarly admit various spheres of possibility – logical, metaphysical, nomological, etc – we would now have a sphere of *precisificational possibility* (the set of worlds which count as admissible precisifications). These are the worlds closest to the actual world which hold all indeterminacy-independent facts fixed but which disagree about those facts which are indeterminate at the actual world. The actualized world is a member of this set of worlds, but it's indeterminate *which* world it is. That is, it's indeterminate which world is actualized. Thus this proposal again differs from the more familiar models, which tend to hold that the actualized world is fully distinct from each member in the set of precisifications.

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worlds. Unfortunately, I don't have the space here to discuss that important issue. A much more detailed semantics and model theory for this type of view is given in Barnes and Williams (forthcoming).

Also, the model here is substantially different from the ontic vagueness-as-modality account offered by Ken Akiba (2004). Again, the theory on offer here claims not just an analogy to modal space (Akiba's position) but strict identity with a certain subset of modal space. More specifically to Akiba's position, however, the model here does draw a distinction between the actual world (though, crucially, not the *actualized* world) and the members of the set of precisifications. On Akiba's picture, objects *just are* the sum of their extensions through a 'precisificational' dimension. Here, objects are our everyday notion of object – there's a clear distinction between the concrete actual world and abstract modal space; it's just that if objects are vague then there's more than one candidate for representing how they are (i.e., more than one candidate for the actualized world).

Finally, the view here isn't just an ontologically heavy version of supervaluationism, though it does bear strong structural analogies to the so-called 'non-standard' supervaluationism of McGee and McLaughlin (1995). It's important to note, though, that the major criticism of the McGee/McLaughlin view – Williamson's argument (Williamson 2004)) that it's insufficient as a model of semantic vagueness, because the key notion (of it being indeterminate which interpretation is intended) is primitive, rather than defined in semantic terms – is obviously no criticism of an application of the approach to ontic indeterminacy.

According to the traditional supervaluationist model, there is a set of 'admissible precisifications', *each of which are equally good candidates* for the term they precisify. In contrast, the model here has it that one and only one of the precisifications is the best candidate for describing the actual world – one and only one of the precisifications is actualized. It's just indeterminate *which* precisification it

is. It's this feature of the model that renders it bivalent, a notable separation from standard supervaluationism.

Another key difference is that the picture here leaves no room for the phenomenon of so-called 'higher-order' vagueness.[58] Orthodox supervaluationism has it that it can be vague which precisifications are admissible, and thus vague which set is the set of admissible precisifications. But if this is the case, then it could, for example, be indeterminate whether it's indeterminate that p. Not so with the view defended here. Because the truth conditions for determinacy/indeterminacy are given strictly in terms of truth values at precisifications (and all truth values at precisifications are settled) there's no space to allow that it could be indeterminate whether a given world is a member of the set of precisifications. Indeterminacy is modelled solely in terms of what goes on *within* the set of precisifications (i.e., whether or not different precisifications disagree about the truth value of p). A world being such that it represents itself being indeterminately part of the space of precisifications doesn't make sense, on this model; neither does the idea that the space of precisifications as whole represents that world as being indeterminately a part of the space of precisification.[59]

And far from admitting this as a drawback, I actually think it's an advantage of the model. I'm not alone in questioning the legitimacy of the phenomenon of

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[58] Though it could perhaps be suitably altered to allow iterations of higher-order vagueness. See Barnes and Williams (forthcoming).

[59] Indeterminate indeterminacy would be variation across the precisifications as to whether there is variation across the precisifications. But we should understand 'the precisifications' rigidly (i.e., if w and w* are in fact the precisifications, we're not looking at whether there's variation in truth value across *what w says are the precisifications* – what w says are the precisifications are simply what *would be* the precisifications were w actualized – but instead looking at what are *in fact* the precisifications – namely, w and w*). If we do so, such variation-in-whether-there-is-variation can never occur. If there are two precisifications of p's actual-world indeterminacy – one where p and one where not-p – then at each precisification it will be true that there is variation across precisifications as to the truth value of p. And thus there is no variation in whether there is variation across the precisifications. ∇p will yield $\Delta \nabla p$ (and likewise for ΔP). The logic of determinacy is S5.

higher-order vagueness (see especially Hyde (1994) and Wright (1992)), and a semantics which rules it out looks to have a grip on the following very intuitive thought: what more could there be to it being, e.g., indeterminate whether it's indeterminate that p than it simply being indeterminate that p? If it's indeterminate whether it's indeterminate that p then, it seems, there is some indeterminacy with respect to p (the facts about p aren't wholly 'metaphysically settled'). But the idea that things aren't quite settled with respect to p just seems to amount to our basic notion that p is indeterminate. It's hard to see how we could characterize 'indeterminate indeterminacy' otherwise; the proposed levels of higher-order vagueness such as 'indeterminate indeterminacy' seem to collapse to our basic, first-order notions. Things can be settled with respect to p, or they can fail to be settled with respect to p, and that's about all the conceptual room there is.

V. Objections

1. Indeterminacy in actualization is misapplied

A. The Objection

It may be objected that such a model can't succeed, because there's simply no way to explain the notion of indeterminacy in which world is actualized. If indeterminacy is construed as truth at some precisifications and falsity at others, then it's difficult to see how such an account could capture indeterminacy in whether a specific precisification is actualized.

B. Reply

To understand how there can be indeterminacy in which world is actualized, it's important to note that, in standard ersatz theories, each possible world represents *itself* as being actualized. Now suppose that the actual (as opposed to the actual*ized*)

world is fully determinate. In that case, there will be only one world in the set of precisifications (because there is only one acceptable way of precisely representing the way things actually are).[60] That world, w, represents itself as being actualized. Thus it's determinately true that w is the actualized world, since every precisification represents w as being actualized (just because w is the *only* precisification).

In contrast, suppose there is genuine indeterminacy in the actual world. There will then be at least two ways of precisely representing how things are in the actual world, and thus there will be at least two worlds in the set of precisifications. Call these worlds w* and w`.  Both w* and w` represent themselves as being actualized, since each world represents itself as being actualized. But that means that within the set of precisifications there is disagreement about which world is actualized. And thus, according to the definition of indeterminacy on offer, there is *indeterminacy* as to which world is actualized. At w* it is true that w* is actualized, but at w` it is false that w* is actualized; it is thus indeterminate whether w* is actualized. Importantly however, each world represents *only* itself as being actualized, and thus represents only one world as being actualized. So it's completely determinate that one and only one world is actualized; it's just indeterminate which world it is.

The semantics thus gives us exactly the results we would expect for sentences of the form 'w is actualized'. If w is the only member of the set of precisifications – meaning that things are exactly the way that w says they are – then 'w is actualized' comes out determinately true. In contrast, if there is more than one member of the set of precisifications, then for any w such that w is a member of the precisification set 'w is actualized' will be indeterminate. And finally, for any w that is not in the set of

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[60] I am rejecting distinct but indiscernible worlds, but the ersatzist will probably want to reject these anyway.

precisifications, 'w is actualized' will be determinately false (because no world in the set of precisifications represents it as being actualized).

2. It's determinate that everything is precise

A. The Objection

A related objection, however, arises from the fact that according to the given model each world is completely precise. Thus it will be true that determinately (and, indeed, necessarily[61]) things are precise. But, assuming there is more than one world in the set of precisifications, we also want to assert that there is indeterminacy. So it looks like this semantics' way of explicating the latter claim leads us into asserting both that things are determinately precise and that they are not precise, and that things are necessarily precise but not precise. And that looks untenable. Surely any correct understanding of determinacy would demand that determinately p entails p, and every adequate account of modality demands that necessarily p entails p.

B. Reply

Indeed, determinately p ought to entail p, as should necessarily p; the T axiom should be a theorem of both our modal logic and the logic of determinacy. The semantics on offer can do that, I think, with some further explication of what exactly a bivalent construal of indeterminacy will involve. Quixotically, perhaps, I argue that, even if there is ontic indeterminacy, things are precise. It's just that it's indeterminate which precise way they are. This goes back to the rejection of a 'third possibility' view of indeterminacy – if p is indeterminate, then there isn't some unique state of affairs, the state of affairs of p's being indeterminate; there are two states of affairs, p's truth and p's falsity, and it's just indeterminate which of these two (exhaustive and exclusive) states of affairs obtains. Thus the only options – the only ways the world

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[61] Since, on the current proposal, every possible world is fully precise.

can be – are precise ones. We find indeterminacy, however, in *which* precise way the world is. Thus it's consistent to assert that determinately, and necessarily, things are precise (and thus it's determinately, and necessarily, false that things are imprecise), while at the same time maintaining that there is genuine indeterminacy. Indeterminacy doesn't entail imprecision.

This is in fact the feature of the model which allows for the endorsement of both excluded middle and bivalence. For any p, either it obtains or it doesn't, since those are the only two options (so Δ (p v ~p)) – sometimes it's just indeterminate which. Likewise, for any p, either it's true or false, since those are the only two options (so Δ (Tp v Fp)) – sometimes it's just indeterminate which. Every precisification either represents p being true or represents p as being false, and every precisification either represents p or represents ~p. But sometimes there is disagreement between precisifications as to the truth value of p (i.e., w represents p as true and w` represents p as false), thus making it indeterminate *which* truth value p has, even though it's fully determinate that p is either true or false. The same scenario makes it indeterminate which of p or ~p obtains, even though it's perfectly determinate that one of them does.

3. It's determinate that everything is determinate

A. The Objection

Even if we allow, however, that a model for ontic indeterminacy can consistently maintain that everything is (both determinately and necessarily) precise, it's certainly an untenable position to maintain both that there is indeterminacy and that determinately things are determinate. Yet this seems to be exactly the position which the semantics on offer forces itself into. Consider the following argument:

1) There is indeterminacy. (Assumption)
2) At every precisification things are determinate. (Assumption)

3) There is more than one precisification iff there is indeterminacy. (From the semantics)
4) At every precisification there is only one precisification. (From 2 and 3)
5) At every precisification there is no indeterminacy. (From 3 and 4)
6) Determinately, there is no indeterminacy. (From 6 and the semantics)
7) There is no indeterminacy. (From 6, and the T axiom for determinacy)
8) Contradiction. (From 1 and 7)

The premises appear to be a simple application of the semantics, yet they yield outright contradiction. The semantics on offer seems to assert that if there is indeterminacy then there is no indeterminacy.

B. Reply

The argument above hinges on a crucial misunderstanding of the definitions of determinacy and indeterminacy in play here. The problem with the argument is premise (2). It is not correct to say that at every precisification things are determinate. If (2) is simply a claim about the qualitative state of the precisifications – what is true in those worlds – then it's simply false. The qualitative way ersatz worlds are does not represent things as being determinate; nor does it represent things as being indeterminate. On this model, indeterminacy in the qualitative way a world is holds *only at the concrete actual world*, not at any of the abstract representations of that world. Determinacy and indeterminacy are characterized in terms of the relationship between a concrete object (the actual world) and some abstract objects (a possible world or worlds). For some P-fact at the actual world, P is indeterminate just in case there is no determinate correct precisification of how things are P-wise. Basically, for the actual world to be indeterminate is for it to have more than one precisification; for it to be determinate is for it to have only one precisification.

Alternatively, if we are considering what the precisifications represent more broadly – if we consider what is true *according* to as well as what is true *in* those worlds – then (2) is again simply false. Statements about indeterminacy can be true

according to precisifications, even though they aren't true *in* any precisification. So if there's ontic vagueness, some precisifications will represent the truth, for some P, of ∇P, making (2) again straightforwardly false.

We can replace (2) with:

(2)* At every precisification things are precise

which seems to capture much of the intuitions behind the original formulation of (2). But (2)* will only generate a worry if we could add:

(3)* There is more than one precisification iff there is imprecision

But (3)*, as noted previously, is simply false according to the picture being put forward. There are multiple precisifications if and only if there is indeterminacy, but, crucially, indeterminacy does *not* entail imprecision. It's perfectly determinate that everything is precise, but (let's assume) it's indeterminate which precise way things are.

VI. Conclusion

The questions of whether there is any ontic vagueness, whether it is a theoretical cost, what kind of ontological commitments are prone to it, etc are all interesting and important matters. But they cannot be addressed properly until we have some sort of formative notion of what, exactly, ontic vagueness is meant to be.[62] In this paper I have offered both an ontologically neutral definitional account and one potential elaboration of that account which shows that the given definition can be manifested fully classically. My hope is this can provide some substantial traction on the slippery idea of 'vagueness in the world'. Only once that notion is securely in place can we begin a quality debate over the existence of ontic vagueness.

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[62] The fact that such fundamental groundwork has been largely ignored is evidenced by the bizarre patchwork one finds when examining the extant literature on ontic vagueness. See especially Williams (forthcoming) for an excellent discussion of terminological and conceptual confusion in the literature.

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