Conceptual Room for Ontic Vagueness

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Abstract: This thesis is a systematic investigation of whether there might be conceptual room for the idea that the world itself might be vague, independently of how we describe it. This idea – the existence of so-called *ontic* vagueness – has generally been extremely unpopular in the literature; my thesis thus seeks to evaluate whether this ‘negative press’ is justified. I start by giving a working definition and semantics for ontic vagueness, and then attempt to show that there are no conclusive arguments that rule out vagueness of this kind. I subsequently establish what type of arguments I think would be most effective in establishing ontic vagueness and provide some arguments of this form. I then highlight a potential worry for this type of argument, but argue that it can be circumvented. Finally, I consider the main ways that the opponent of ontic vagueness would be likely resist the arguments I have offered, and argue that these strategies of response are methodologically problematic. I conclude by claiming that ontic vagueness is a perfectly plausible ontological commitment.
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Introduction

Vagueness is everywhere. It’s in our predicates, our referring terms, even our proper names, not to mention our contexts and maybe even our beliefs. Once you start to notice it, it tends to crop up all over the place. And it makes a rather horrible mess of things.

But there’s one area where most philosophers tend to agree vagueness is definitely not – the non-representational world. That’s one area of enquiry that is vagueness-safe. Vagueness, as traditionally understood, is a feature of our representations – a phenomenon that arises because we want to distinguish between big differences but can’t quite be bothered to put in the work it would take to distinguish between small differences. But when you consider the fact that a series of very small differences will add up to a big difference, you realize our representations are in serious trouble.

Yet if vagueness only arises as a representational phenomenon, then it seems we’re guaranteed that the world itself, independently of how we represent it, won’t be subject to vagueness. With this in mind, philosophers have tended to greet the idea of ontic vagueness – vagueness in how things are in themselves, rather than how we describe them – with a fair amount of incredulity. Surely ‘ontic’ vagueness, the thought goes, must just be some kind of category mistake.¹

Indeed, such a conclusion certainly follows from the assumption that all vagueness is representational in origin. Yet, for various reasons, that assumption can begin to look false, or at best unmotivated. Let me explain.

Baldness is vague. Some men (Yule Brenner, for instance) are determinately bald and some men (the late, great Jerry Garcia is a prime example) are determinately bald

¹ Russell (1923) first put forward this type of objection – calling ontic vagueness ‘the fallacy of verbalism’ (ascribing essentially representational features to essentially non-representational entities) – and it’s been extremely influential.
not bald. But then there are some men that we hedge about, of whom it seems neither obviously true to say that they’re bald nor obviously true to say that they’re not bald. These are, famously, called ‘borderline cases’ for baldness. And so far so good for the representational theory of vagueness, because it seems highly intuitive that this vagueness simply arises from the fact that we just haven’t quite decided exactly what our word ‘bald’ means. We know the paradigm cases, but there’s fuzziness at the edges that we haven’t got around to sorting out yet.

But, of course, many more things are subject to vagueness than just terms like ‘bald’. What it is to be, say, a dog is also vague. It’s unclear at what point in time a certain collection of molecules started being a dog, and more specifically, a certain particular dog. Some philosophers, however – myself included – see a stark disanalogy between baldness and dogs. Baldness, it seems, is a feature which we create, which is in some sense non-natural. The world as it is in itself, independently of how we represent it, contains only men and arrangements and number of hairs. Baldness is something extra which we add on (mostly, I suspect, for the purposes of humiliation and mockery). But there’s a lurking suspicion that the case is different for things like dogs. Dogs, the thought goes, have their existence (and more importantly, their existence qua dogs) independently of how we represent them. We may carve up the world into the bald and the non-bald, but we don’t carve up the world into the dog and the non-dog. The world, it seems, handles that task itself. The distinction is a natural one.

So what to make of the apparent vagueness in dogs, of the fact that certain things seem indeterminate in whether or not they count as dogs? Of course there are perfectly respectable and well-rehearsed ways of getting out of the worry. We can solve the problem of vagueness in persistence via four-dimensionalism; we can say
that ‘dog’ is just a phase sortal; we can situate the vagueness in semantic indecision over the use of ‘dog’; the list goes on. But what are the options if I don’t want to go in for any of these proposed solutions? What if I don’t find any of them plausible? Were I instead to take the ontic vagueness approach – i.e., dogs are vague objects – would I be descending into obvious madness?

That’s the question that I’ll be exploring in this thesis – namely, is there conceptual room for ontic vagueness? That is, can ontic vagueness be an ‘option on the table’ in metaphysical debate?

Let me clarify the notion of conceptual room. To argue for conceptual room for ontic vagueness will simply be to argue that it’s something that makes sense, that it’s a plausible option in the theoretical landscape. Importantly, though, that’s not to argue that ontic vagueness is actual, or even that it’s possible.

Consider an analogy in another area of metaphysics – the debate between trope and universals accounts of properties. Most theorists who hold either position think (whether justified or otherwise) that if their theory is true it is true necessarily. So if you think that properties are tropes, not only do you not think there are any universals,² but you’re probably also inclined to think that necessarily there aren’t any universals. That is, you think your opponent’s (the universals theorist’s) position is impossible. But you don’t respond to her view with a befuddled ‘blank stare’; you don’t take the fact that someone’s overarching metaphysical system commits them to universals as a simple reductio of that system; you don’t laugh off a theory of universals as obvious nonsense. Of course not. Despite the fact that you think the position is, strictly speaking, impossible, you engage with it seriously and you treat it as a viable and important option in the analysis of properties. And, more importantly,

² Most likely – you’re probably not EJ Lowe
you’re open to the idea that one day you might change your mind. You might decide to believe in universals too. There’s conceptual room, from your position, for a theory of universals.

And it’s that notion – the idea of conceptual room – that I’m trying to explore for a theory of ontic vagueness. Establishing such conceptual room is key for several reasons. First, denial of ontic vagueness is often used as an (obvious) premise in arguments leading to very substantial metaphysical conclusions. If ontic vagueness is a perfectly sustainable position, then such dialectical moves no longer seem quite so straightforward. Secondly, metaphysicians tend to ignore the fact that some of their commitments are clearly soritical, simply from the assumption that because those commitments are ontic there must be a sharp cut-off, even if we don’t know what it is. Again, however, if ontic vagueness becomes a legitimate option, that assumption no longer looks to be in good standing. Finally, and perhaps most importantly, though, ontic vagueness represents an interesting and challenging theoretical landscape in its own right – one which I think has been unjustly ignored for far too long. So for related dialectical reasons, and for the sheer sake of its intrinsic interest, I’d like, if possible, to establish ontic vagueness as an option on the table – something you have to take seriously, something you don’t just consider commitment to as an obvious reductio. Here’s the gameplan:

Chapter 1 – ‘What is Ontic Vagueness?’

Before trying to motivate conceptual room for the concept, it’d be good to be clear on exactly what the concept is. And, worryingly, that’s something that opponents of ontic vagueness have claimed the ontic theorist can’t do. This chapter provides the definition of ‘ontic vagueness’ that will be in play for the rest of the thesis, and then attempts to defend it from some objections.
Appendix to Chapter 1 – ‘A Semantics for Ontic Vagueness’

Here I briefly sketch a model for a bivalent understanding of ontic vagueness. On the proposed theory, precisifications are ersatz possible worlds, but if the actual world is vague it’s indeterminate which precisification is actualized.

Chapter 2 – ‘What’s So Bad About Ontic Vagueness?’

This chapter is a survey of the major arguments against ontic vagueness. I argue that, while some are more persuasive than others, none succeed as knock-down objections to ontic vagueness.

Chapter 3 – ‘Indeterminacy, Identity, and Counterparts: Evans Reconsidered’

This is my attempt to say something slightly original about Gareth Evans’ famous proof that there can’t be de re indeterminacy – I argue that the argument fails if we interpret the determinacy operators counterfactual-theoretically, which I contend is a very natural reading for them.

Chapter 4 – ‘Arguing for Ontic Vagueness’

This chapter is a brief survey of some of the main arguments for the existence of ontic vagueness. I examine them with a ‘for the purposes here’ strategy to see which types of argument might be most fruitful in effecting the stated aim of the thesis – that is, in establishing conceptual room for ontic vagueness (as I’ve defined it previously).

Chapter 5 – ‘Vague Properties’

Here I examine some common theories of properties and show how they have (surprising) vagueness-related worries.

Chapter 6 – ‘Vagueness, Four-dimensionalism, and Natural Properties’

This chapter is meant to show how quickly worries of vagueness will spread
from one area of metaphysics to another. If we accept that there’s a problem of vagueness for natural properties, then, I argue, contrary to standard opinion the four-dimensionalist doesn’t have an easy solution to the problem of vagueness in persistence.

Chapter 7 – ‘Ontic Vagueness Without Supervenience’

In this chapter I attempt to deal with a major objection to the previous arguments for ontic vagueness – namely, that they all invoke vagueness only at the supervenient level. I explain why that’s a problem, and then attempt to show that, with a little fancy metaphysical footwork, cases of non-supervenient ontic vagueness can be demonstrated.

Chapter 8 – ‘Bearing the Burden: Methodological Issues in the Ontic Vagueness Debate’

This chapter tries to sum things up, examining what the ‘semantic only’ theorist of vagueness would likely do to resist the arguments given in previous chapters and then arguing that these ways out are methodologically unwarranted.
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Notes for the Reader

With the exception of chapters 4 and 9, each chapter is meant to be readable as a standalone papers. Consequently, there is a decent amount of overlap in a few places, mostly just in establishing basic notions (e.g., conceptual room, vagueness as sorites susceptibility, giving a basic ontic sorites, etc.). The reader is thus invited to skim introductory sections liberally once she has gotten past chapters 1 and 2 unless she wants some reminders. Bibliographies are provided at the end of each chapter, for ease of reference. There is also a complete bibliography at the end.

The section on sparse properties in chapter 5 (‘Vague Properties’) was published as ‘Vagueness in sparseness: a study in property ontology’ in Analysis 65. There’s a fair amount of overlap between the discussion of eligibility considerations in chapter 6 (‘Vagueness, Four-dimensionalism, and Natural Properties’), section 3.5 and the material in my ‘Vagueness and Arbitrariness: a Reply to Merricks’, forthcoming in Mind.

Thanks for taking the time to read this, and I hope you find it worthwhile.
Chapter 1

What is Ontic Vagueness?

Abstract: In this chapter I will attempt to sketch out a theory-neutral framework for understanding the concept of ontic vagueness. There has been an increasing amount of attention paid to ontic vagueness in recent literature, but most of it has centered around specific problems and puzzles involving ontic vagueness, with little attempt to address what ontic vagueness is. Consequently, it’s not clear in these debates that we’ve even found a concept that we can agree to disagree about. I will thus attempt to outline a workable conception of ontic vagueness – one that I think is an improvement on previous attempts because it remains neutral on other, independent metaphysical issues. I will then raise some worries for this account, and attempt to respond to them. Finally, there is an appendix that sketches out a model semantics for ontic vagueness.

Ontic vagueness has begun to receive an increasing amount of attention in recent philosophical literature. Some philosophers argue that it’s conceptually possible, others that it’s obviously rampant, while most maintain that it’s somewhere between impossible and nonsense. But with all that’s been written about its possibility and/or existence, surprisingly little work has been done to address its nature. Indeed, it’s not overly clear that, in debating ontic vagueness, we’ve grasped hold of a firm concept we can then proceed to disagree about, simply because no one seems particularly 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 hits upon one of the major worries that opponents of de re vagueness have levied against the view. David Lewis (1993) argues that he has no clear conception of what ontic vagueness is meant to be, and that without such a conception ontic vagueness cannot be endorsed.3 Mark Sainsbury (1994) has raised somewhat similar criticisms against the notion of ontic vagueness, claiming that as yet there is no tenable, developed theory of ‘worldly vagueness’.

3 Lewis aims his arguments specifically against vague objects, but they would generalize equally well to properties, states of affairs, etc.
which both expresses something intelligible and manages to avoid simply collapsing into another form of semantic vagueness; yet until such a theory is offered, Sainsbury argues, we have no right to argue that the world might be vague in and of itself (independently of how we represent it). In a nutshell, then, the complaint boils down to a phrase of CB Martin’s: ‘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’.

So for those of us tempted by the idea that a purely representational theory of vagueness is in places insufficient, some substantial work needs to be done. We need a workable notion of ontic vagueness – one that can appease Lewis’ demand for a ‘clear picture’ and can also avoid simply collapsing back into semantic vagueness – before we can engage meaningfully in debate. Otherwise, we run the risk that we really are just talking nonsense. It will be the purpose of this paper to try to meet that challenge.

I. Background

Discussions on the (im)possibility of ontic vagueness have tended to focus on particular forms it might take, rather than analyses of what it is. Most notably, writing has centred on the existence of vague objects⁴ and coherence of vague identity.⁵ Though these are the main areas of attention, discussion has also extended to persistence,⁶ properties,⁷ and ‘problem of the many’-style puzzles.⁸

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⁵ Gareth Evans offered a seminal proof 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 Woodruff (1995).
Recognizing this lack of cohesion, a few writers, most notably in the recent debate Ken Akiba and Gideon Rosen and Nick Smith, have sought to provide a conceptual picture of what ontic vagueness might be. That is, in a similar vein to this paper, they seek to give an analysis of ontic vagueness in and of itself, independent of its various possible manifestations.

Briefly, Akiba argues that we should conceive of vague objects\(^9\) as a type of transworld object. He argues for a \textit{precisificational dimension}, alongside the more familiar modal and temporal dimension, in which objects are extended. The precisificational domain is made up of fully precisified possible worlds. According to his account of ontic vagueness, an object is ontically vague if and only if it coincides with different precise objects at different precise worlds.

Rosen and Smith, in contrast, argue that ontic vagueness is any instance of a borderline case of a so-called ‘sharp property’. Suppose my shirt is borderline red (somewhere in the neighbourhood between red and orange). Even assuming a realism about colour properties, that doesn’t seem enough to generate the claim that my shirt is a vague object (i.e., that my shirt vaguely instantiates some colour property). Rather, my shirt is a fully determinate shade of colour – it’s just vague whether we classify that colour as red. What we should, however, count as ontic vagueness, Rosen and Smith argue, are similar instances involving ‘sharp properties’. Sharp properties are ‘maximally specific’; they are the determinate of a determinable, and there’s no finer grading to be had for them. So if my shirt is a borderline case of red, we shouldn’t suspect ontic vagueness, but if my shirt is a borderline case of the

\(^9\) He also gives a similar treatment for vague properties
maximally specific colour R17, then ontic vagueness begins to look like a more appropriate claim.¹⁰

Neither paper claims to endorse the existence of ontic vagueness, but simply wishes to explore the conceptual space for such a notion. Notably, however, in doing so each make substantial metaphysical commitments that will have serious implications in other areas of philosophy (Akiba commits to realism about a quasi-modal precisificational dimension, Rosen and Smith to a metaphysics of properties).¹¹

But this seems, at least prima facie, quite odd. The issue of ontic vagueness seems to be largely independent from those of modality, properties, etc. It seems we ought to be able to think that ontic vagueness is a conceptual possibility while, for example, being a conventionalist about modal reasoning or maintaining a nominalist ontology.

It will be the purpose of this paper, then, to attempt to set up a theoretical framework for understanding the concept of ontic vagueness that is more theory neutral than those already available – i.e., one that tries to characterize what ontic vagueness would be if it existed while making the fewest possible commitments in other areas of metaphysics. I will take such neutrality as an advantage, since, as mentioned, it seems as though whether or not we are committed to ontic vagueness should have little or no bearing on independent ontological commitments. Ontic vagueness seems to be a characterization about what our ontology is like, whereas

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¹⁰ Rosen and Smith give a detailed account of how they wish to understand their ‘sharp’ or ‘point’ properties, which I won’t go into here – see their (2004), pg. 199-203.

¹¹ Akiba does claim that you could use his modal notions instrumentally, but it’s not at all clear from his account how that would work, since his ‘precisificational dimension’ is meant to do some very heavy metaphysical work. With some work, there are probably conventionalist and nominalist and/or trope theoretic translations to be had for the respective accounts, but two points about this: first, they haven’t been offered, so the work is yet to be done; second, such translations will likely be quite messy, and I’m willing to contend that the theory on offer here will be simpler, and more naturally suited to theory-neutrality.
properties, modal dimensions, etc, are what our ontology includes;¹² these questions seem to cut across one another.

Like those analyses already on offer, however, this paper will by no means be an attempt to argue for the existence of ontic vagueness, and I will not rehearse the arguments in its favour. I simply wish to explore the conceptual space for such a notion.¹³

II. A Theory of Ontic Vagueness – The Basics

In an attempt to single out ontic vagueness, I’ll begin with representational vagueness. The basic idea extrapolated below is that ontic vagueness is what you’d have if you were able to get rid of all the representational vagueness but still encountered Sorites-susceptible indeterminacy. In that sense, it’s definition by process of elimination. And while many might object to so-called ‘negative definitions’, I think in a case like this they can be particularly helpful. We know what semantic vagueness is (more or less); it’s ontic vagueness that we find confounding. Moreover, it’s almost always vagueness in representation that first makes us aware of the general phenomenon; only after a great deal of puzzling do we start to worry that it might extend beyond the representational sphere. Thus starting with the familiar – representational vagueness – and moving on from there seems like a good way of getting a handle on the subject. This is, after all, no attempt at robust conceptual analysis, since I’d doubt that any of us have a pre-theoretic concept of ontic vagueness.

¹² 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.

¹³ Indeed, it’s important to note that in attempting to carve out conceptual space, I don’t even need the claim that ontic vagueness is possible. Suppose you think that there’s conceptual room for a ‘restricted composition’ view of mereology. Moreover, you think that restricted composition would lead to ontic vagueness. You might, however, think that, in point of fact, unrestricted mereology holds, and holds necessarily (I don’t, in fact, think there’s any reason to hold that compositional laws are necessary (for reasons why, see Cameron (in draft)), and that unrestricted mereology rules out ontic vagueness. In that case, ontic vagueness would be impossible, but there would still be conceptual room for an understanding of it (i.e., it wouldn’t evoke a simple ‘blank stare’).
vagueness. It is, rather, an attempt to formulate a working definition that can serve as a framework for philosophical debate.

I will take as a starting point that vagueness, when it occurs, entails the possibility of precisification.14 Whenever we encounter a situation of genuine vagueness, there are ways that vagueness might be made more precise, and thus vagueness always admits of the possibility of precisification.15 Moreover, there are various planes along which we might precisify – extensions of predicates, mental content, contextual features, etc. Each of these planes of precisification can contribute to a particular instance of vagueness.

What the defender of ontic vagueness argues for is simply an extension of these planes of precisification to include the makeup of the physical world. For the ontic theorist, a lack of precisification in the way the world is in and of itself can contribute to certain cases of vagueness just as a lack of precisification in predicate extensions or mental content can.

Isolating a case of vagueness as purely ‘ontic’, then, will simply be a process of elimination. Even the most steadfast adherents of ontic vagueness are unlikely to claim that there is no semantic vagueness surrounding the issues in question, especially when nearly all our words seem to be at least partially vague. The claim, rather, is generally something along the lines that the source of the vagueness is primarily ontic, not semantic.16 The best way of expressing this thought, I think, is

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14 Some disagree with this, of course, but it is the prevailing view – see, e.g., Sider (2001).
15 A more detailed accounted of what, in particular, I understand precisifications to be will follow in a subsequent chapter.
16 Jenkins (MS) argues that this should be the extent of our analysis of ontic vagueness – i.e., that we should characterize ontic vagueness in terms of explanation (ontic vagueness arises in virtue of ontological, rather than representational facts). I agree that this might be the root idea behind ontic vagueness, but I think we can say something more substantial. Nor do I think that explanation is the proper way to characterize ontic vagueness, because it’s perfectly consistent that ontic vagueness could be present, and yet doesn’t (exhaustively at least) explain why we encounter the phenomenon of vagueness. If both semantic and ontic vagueness are present, then it seems that the semantic vagueness could be the thing in virtue of which we encounter the phenomenology, yet there would remain some
that a case of vagueness would be ontic if and only if precisifying all the representational content of the case in question fails to yield determinacy for the sentence in question.\textsuperscript{17} Since most philosophers hold that representational content is not, in fact, precisified – currently, and perhaps ever – the account will thus be a counterfactual one:

\begin{quote}
\text{(OV) For a given case of vagueness, the vagueness is ontic iff: were all the representational content precisified, there is an admissible precisification\textsuperscript{18} such that according to that precisification the sentence would still be indeterminate\textsuperscript{19} and Sorites-susceptible.}
\end{quote}

For example, suppose that the proposition ‘Daniel is bald’ is vague (this will be a toy example, chosen simply for ease of explanation – most defenders of ontic vagueness would, I’d think, agree that the vagueness of ‘bald’ is clearly a semantic matter).\textsuperscript{20} As things stand now, ‘Daniel is bald’ is indeterminate. But now suppose that we are able to fully precisify the truth conditions of the predicate ‘is bald’ – bald, under an 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 underlying ontic vagueness that we’re simply not picking up on (perhaps, e.g., because it occurs at the micro-level).

\textsuperscript{17} This should be a bit more careful, to rule out any generic ontic indeterminacy counting as ontic vagueness: vagueness will be ontic only if were all the representational content precisified the sentence would still be indeterminate, and that remaining indeterminacy would be Sorites-susceptible.

\textsuperscript{18} 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.

\textsuperscript{19} (OV) should be neutral, as far as possible, of specific characterizations of vagueness – i.e., whether vagueness involves a ‘third-value’ indeterminacy status, etc. You could maintain that indeterminacy is genuine but still hold on to bivalence by arguing that every proposition is either true or false, but in some cases it can be indeterminate which (a move familiar from, e.g., ‘non-standard supervaluationism’).

\textsuperscript{20} What to take as a non-toy example? That 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 dummy example. Suffice it to say that something which you take with ontological ‘robustness’ (i.e., some categorization you think is determined by the world itself, not by our representation of the world), but might still be soritical (if you can think of such a thing) would be the classic example.
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 in its extensions if and only if he has less than 846 hairs. Trouble is, there seems to be no particular fact of the matter about how many hairs Daniel does in fact have.

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 clear fact of the matter about what collection of matter ‘Daniel’ refers to. We would then need to further precisify ‘Daniel’, stipulating perhaps that ‘Daniel’ refers to the clump of atoms \(x(1), \ldots, x(n)\) and excluding all others. We would then proceed with this process for the rest of the semantic or representational components of the case in question.

But now suppose that, once this 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 is the case, it seems to be a fact about Daniel (not ‘Daniel’) – about the way he is in and of himself – rather than about the words we use to describe him. The representational content in this scenario is fixed – ‘bald’, and the further semantic components, have a fully specified meaning – and thus to characterize the vagueness at hand we will have to look elsewhere, at the non-representational content.

This, then, would be an example of what we should, conceptually, take as a case of ontic vagueness. By process of elimination, something is ontically vague if

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21 See, e.g., Lewis (1993); some philosophers think it implausible that there can be such vagueness, since they find it intuitive that we know exactly what we’re referring to when we’re using a term like ‘Daniel’ – we’re referring to him, that man (see, e.g., Van Inwagen (1990) and Merricks (2001)), but it’s at least an open question in the literature.
and only if precisifying all the relevant representational content would fail to yield determinacy for the case in question. There are more metaphysically robust ways of spelling out this simple idea, but more on this later. 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 non-representational content – the planes of precisification must extend to the material world. And any extension of such kind – any need for non-representational precisification – would count as a case of ontic vagueness.22

It’s important to note here that we’re characterizing ontic vagueness as extending to any and all cases of non-representational precisification. ‘Ontic vagueness’ is sometimes used synonymously with ‘worldly vagueness’ or ‘material vagueness’. Yet, if your ontology includes abstract objects, sets, etc. as well as material objects, then any precisification in these – since they are objective existents and fully non-representational – will count as ontic vagueness just as much as vagueness in the physical world. As long as a proposition requires precisification of non-representational precisification (whether that precisification is material or abstract) to yield a precise truth value, then the vagueness in question is ontic.

As an important caveat, however, this account does say something non-standard about the possibility of vagueness in the reference relation, which (assuming a robust ontology of relations) is often understood as ontic.23 Vagueness in the reference relation could not, on the basic account presented above, be taken straightforwardly as ontic, because precisifying the representational content would

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22 NB: epistemicists about representational vagueness can agree with this account, though its practical interpretation will be quite different for them. According to the notion of precisification on offer here (to be more fully explained in subsequent discussion of truthmakers), the epistemicist thinks that semantic components are already fully precisified (in that they have a single, unique truthmaker). So for the epistemicist, cases of ontic vagueness will simply be cases where propositions have no determinate truth value.

require fixing the reference relation, and thus doing away with the vagueness in question. That does not, however, imply that vagueness in the reference relation is representational. If we take representational vagueness to be the converse of ontic vagueness then the opposite counterfactual should hold:

(RV) Vagueness is representational iff: were all the ontic content precisified, there is an admissible precisification such that according to that precisification the sentence would still be indeterminate and be Sorites-susceptible.

But if this is the case, then vagueness in the reference relation doesn’t count as representational vagueness either, because if you precisify all the ontic content (and, again, have a robust ontology of relations) you won’t be left with any indeterminacy. The best understanding of peculiar cases like vagueness in, as it were ‘semantic ontology’ like the reference relation is that they are in some sense indeterminate between semantic and ontic vagueness – or, perhaps to avoid the vagueness-laden vocabulary, it’s best to say that for those special cases the distinction simply breaks down. If you have vagueness in the reference relation, you simply have vagueness, and that’s about all you can say.

III. Objections

There are two clear objections to this type of picture, both in their own way based on the idea that any proposed case of ‘ontic’ vagueness will not, in fact, have fully precisified the representational content. Had they done so, there would not be any vagueness left. The defender of ontic vagueness, so the charge goes, has simply been too quick and too readily jumped to the conclusion that vagueness must lie in the non-representational world. But there is more work to be done in the representational

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24 Note that the claim is that representational vagueness, not the narrower semantic vagueness is the converse of ontic vagueness. This leaves open that there could be epistemic (which I would classify as representational) and contextual as well as semantic vagueness.
content, and once this is completed, the opponent suggests, the vagueness will have been eliminated.

The first objection is the simple thought that if, for example, ‘Daniel is bald’ remains vague, then you simply have not precisified the predicate enough. There must be something more precise than ‘has less than 846’ hairs that ‘is bald’ can admissibly mean. This idea is rooted in the ‘blank stare’ response to the notion that propositions such as ‘Daniel is bald’ could still be indeterminate after their predicates have been fully precisified. Surely, once a predicate has a fully determined meaning – as precise as it could possibly be – then there can be no further question of whether or not it applies.

The second objection allows that ‘bald’ might be fully precise without propositions like ‘Daniel is bald’ having determinate truth values, but rather argues that, once you have fully precisified the meaning of ‘bald’ in the ‘Daniel is bald’ example, the vagueness in question simply shifts to other representational features. Just because you have precisified the words in the given propositions doesn’t mean you’ve fixed the relevant representational content. You may merely have shifted it to another area. Rather than looking to the non-representational world, then, as a source of vagueness, you should see what other semantic components might take the blame. In the ‘Daniel is bald’ case, for example, the vagueness not eliminated by the precisification of ‘bald’ occurred because, for a particular hair, it’s vague whether or not that hair is a part of Daniel. But why not think this is merely vagueness in ‘is a part of’, rather than vagueness in Daniel himself? And won’t there always be such additional semantic features that we can shift the vagueness over to, rather than claiming that it comes from the world?

1. An Improper Account of Precisification?
I will deal with each of these objections in turn. In response to the first: I think there are two ways of understanding the heart of this objection. To one way of reading the problem, I think I can offer something illuminating and helpful to the debate; to the other, unfortunately, I will have less to say.

1.1 How Can There be Indeterminacy Given Semantic Precisification?

You might think that the first objection boils down to a complaint, by the objector, that she cannot conceive of what it would be for a predicate to be wholly specified and yet the sentence remain vague. Hence the ‘blank stare.’ In response to this I can offer the following model – the promised metaphysical elaboration – based on an account of truthmakers and how they relate to vague sentences.

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, whether every truth has a truthmaker, and whether the truth-making relation is necessary. 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.

Given the model on offer, we might think of a semantically vague sentence as one that lacks a unique truthmaker. There are a range of candidates that would all serve equally well as truthmakers for that sentence, and it’s simply that we haven’t
picked out a specific one to do the job.\textsuperscript{28} The admissible precisifications, then, are the range of possible situations where one of these truthmakers is picked out as the truthmaker for the proposition. Likewise, a predicate has been fully precisified when one of its admissible precisifications has been chosen; that is, when the proposition comes to have a unique truthmaker – or alternatively, when the proposition comes to have a fully specified set of truthmakers, if previously the proposition was indeterminate over various sets of truthmakers (say of determinants to make true a determinable). But again, it’s important to note that whatever truthmaker is selected, it must be from the range of eligible candidates. Semantic facts can’t be purely ad hoc – when they obtain, they must obtain in virtue of something. Thus we’re not free to simply precisify at random; there must be some degree of ‘fit’.\textsuperscript{29}

In contrast, if the vagueness in question is ontic, we will have decided what the truthmaker for the given proposition is (or what the precise set of truthmakers is), it’s just that there’s vagueness in whether that particular truthmaker does in fact obtain. So, understanding that the proposition has been semantically precisified, we know exactly what it would take to make the proposition true – that is, the proposition has a precise truthmaker. Vagueness arises because the world itself leaves it underdetermined whether that particular truthmaker obtains.\textsuperscript{30}

\textsuperscript{28} 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).

\textsuperscript{29} That is, semantic ‘fit’ entails that precisifications cannot be gerrymandered so as to exclude ontic vagueness – a precisification of ‘bald’ could not legitimately be ‘has less than 846 hairs or is a borderline case’ (though even such an ad hoc response might well not yield precise truth-values, due to higher-order vagueness); you might even think, since baldness seems to be essentially linked to number of hairs, that a precisification couldn’t be something as fine-grained as ‘has x number of hair molecules’ or ‘has x number of hair atoms’ – still, if these seem acceptable, ‘borderline’ cases for them can be conceptualized along the same lines as those of the more macroscopic examples.

\textsuperscript{30} It might here be objected that, despite claims of neutrality, I’ve ruled out views of truthmakers (such as Parsons (1999)) that deny that the truthmaking relation is one of necessitation. It could, on such an account, be indeterminate whether a makes P true, but for ontic rather than semantic reasons – e.g., because it’s ontically indeterminate whether some other, overriding features external to a obtain. However, I think I can allow for such a view of truthmakers by again appealing to the idea that
1.3 Formal Stuff

It’s helpful to put this a bit more rigorously, to elucidate exactly what’s going on. Let a general definition of indeterminacy\textsuperscript{31} in terms of truthmakers be this:

\[(GV) \forall p \text{ at } w \iff \exists x \forall (Ixw \& x \rightarrow p)\textsuperscript{32}\]

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 \(w\).\textsuperscript{33} 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 of the above definition is the source of the indeterminacy.

Semantic vagueness would then derivatively be understood thus:

\[(SV) \forall \sigma p \text{ at } w \iff \exists x (Ixw \& \forall x \Rightarrow p)\]

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:

\[(OV^*): \forall o p \text{ at } w \iff \exists x (\forall (Ixw \& x \Rightarrow p) \\& \neg \exists y (y \neq x \& \Delta y \Rightarrow p))\textsuperscript{34}\]

Ontic vagueness, then, will be a situation where \(x\) makes \(p\) true, but it’s indeterminate whether \(x\) exists at \(w\).

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\textsuperscript{31} Understanding vagueness as simply indeterminacy plus Sorites-susceptibility
\textsuperscript{32} This is a possibilist quantifier; ‘\(Ixw\)’ 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 \(w\)). ‘\(\forall, o p\)’ means ‘\(p\) is semantically indeterminate’ and ‘\(\forall, o p\)’ means ‘\(p\) is ontically indeterminate’.
\textsuperscript{33} As it is, this will notably only be a characterization of general vagueness for de re sentences (e.g. ‘\(x\) is a cat’). De dicto sentences (‘some cats exist’) can present counterexamples, as follows – suppose that there’s a world with a paradigm cat and a borderline cat; the borderline cat makes the existential claim true, but ‘some cats exist’ isn’t vague, because of the existence of the paradigm cat. This worry can be finessed, however, either by assuming that de dicto vagueness can be reduced to de re vagueness, or by amending as follows: \(\exists x \forall (Ixw \& x \Rightarrow p) \& \neg \exists y (y \neq x \& \Delta y \Rightarrow p)\) – this addition can also be added to the subsequent semantic and ontic definitions, in order to avoid the same worry.
1.4 Ontological Neutrality

The model for ontic vagueness here, notably, 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, as Smith and Rosen have suggested, instantiations of maximally specific properties;\(^ {34}\) they might be states of affairs; they might be tropes; they might simply be class membership.\(^ {35}\) If, for example, you independently favour an ontology of universals and states of affairs, then you would characterize truthmakers as specified states of affairs where universals are instantiated; and thus a case of ontic vagueness would be one in which it’s indeterminate whether the state of affairs of a given universal being instantiated obtains. In contrast, if your ontology commits you to tropes, then ontic vagueness for you would be, for instance, a situation wherein it is indeterminate of a range of fully specified tropes, which trope does in fact obtain.\(^ {36}\) The details aren’t particularly important, as they can vary from theory to theory, depending on metaphysical commitments elsewhere. I take this 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.\(^ {37}\)

\(^{34}\) See Smith and Rosen (2004)

\(^{35}\) 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).

\(^{36}\) For motivations suggesting that universals and tropes are the sorts of things that might, at least conceptually, admit of vagueness, Barnes (2005).

\(^{37}\) 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)).
The point, primarily, is to attempt to offer the sceptic who asks ‘but what would it be for vagueness to remain after the semantic components have been precisified?’ something of a model.

1.5 The Second Reading – Precisification as Inherently Linguistic

But, as aforementioned, there is another way of understanding the first objection, and on that reading nothing that I have said thus far will be particularly helpful. The objector might simply maintain that, if you have vagueness left over after precisification, then you necessarily haven’t precisified the words enough. Precisification, on this account, is always a matter of language. Having ‘the world leave things undecided’ is simply nonsensical – the world is what it is, and it’s only our descriptions of it that admit of vagueness. So what could it possibly mean to say that you have fully precisified the semantic components and yet the proposition is not yet precise?

1.6 A Clash of Intuitions

Many philosophers share this intuition, and it may well be a fair response, but as it stands it doesn’t really engage with the position the defender of ontic vagueness presents. One theorist thinks that ‘worldly indeterminacy’ is nonsense and that nothing more need be said on the matter, the other thinks it’s a (at least conceptual) possibility. This seems to boil down to a clash of intuitions, and it’s unlikely that either side will be able to offer the other much that will sway them.

So for the philosopher who simply wants a model of what someone might mean when they say that the semantic components of a proposition have been precisified but vagueness remains, I think I have something useful to offer in the truthmaker picture. For the philosopher who maintains the firm intuition that worldly

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38 This is the view defended in, e.g., Russell (1928). The ontic theorist can of course agree with the intuition that ‘the world is what it is’ – her opponent needs a defense of the stronger claim that what the world is is inherently independent of notions of vagueness.
indeterminacy is simply inconceivable, however, I can offer little more than the protest that it’s an intuition many don’t share.

2. The Second Objection – A Bump in the Semantic Carpet

2.1 Precisification is Never Complete

In response to the second objection (that the vagueness can always be relocated in another feature of language, rather than in the world), again I think there are two ways of reading the worry. On the first, the worry is simply that, as things actually stand, vagueness will never be ontic, because semantic indeterminacy can never be eradicated. This worry, however, doesn’t seem to be an objection to the account on offer. Recall that the primary motive here is simply to argue for conceptual space for ontic vagueness, not to claim that ontic vagueness actually exists. The philosopher who runs the first reading of the objection, though, seems to agree with the conditional: if we eliminate all semantic components and are still left with indeterminacy, we have ontic vagueness. They just don’t think the antecedent will be satisfied (at least in the actual world). But as long as the conditional is agreed upon, it seems that conceptual room for ontic vagueness is left open.

Moreover, even if representational content is never in fact precisified, this would not rule out ontic vagueness being actual. Again, since the analysis is a counterfactual one the ontic theorist could maintain that there is actual ontic vagueness, despite the apparent ineliminability of semantic vagueness, because she maintains that were we to eliminate semantic vagueness we would still encounter Sorites-susceptible indeterminacy.

2.1 The Ontic Theorist is Confused About the Extent of Precisification

The second way of reading the objection poses a more direct challenge to the account. The philosopher who takes this line claims (echoing the previous ‘blank
stare’ responses) that she simply cannot conceive of what it would be to have precisified all the representational content, precisely because (since we are inevitably using words to describe these scenarios) there will always be further semantic components in which to relocate the vagueness in question. Thus, try as you might, your precisifications will never get you back to the world itself – they will just get you to further bits of language.

This objection arises, I think, as a feature of the example, rather than as a genuine feature of the phenomena in question. True, for any stock examples, we might set, there will always be other words we are using to describe the example that could potentially serve as loci of vagueness. And since nearly all our language is vague, this semantic vagueness starts to look like the proverbial bump in the carpet – straighten it in one spot, and it’ll just pop up in another. But since we are meant to be dealing here with conceptual possibilities, surely we can conceive of a scenario where we have precisified all the relevant words in question. Furthermore, even if we can’t conceive of such a scenario, this sort of imaginative enactment isn’t necessary in order to simply create conceptual room. All we need, for the analysis of ontic vagueness to go through is the conditional that were all the representational components precisified and indeterminacy remained, there would be ontic vagueness.

But, the objector might counter, people only think they have reason to believe in non-representational vagueness because they ignore this precise feature of the classic examples. They precisify some key words, still have some vagueness left

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39 Thanks to Mark Sainsbury for raising this analogy for me. See Sainsbury (1994) for a development of the argument.
40 Even if our language is infinite, we could set a supertasker to precisify all the relevant semantic components.
41 Arguably at least, there’s conceptual room for us to be in scenarios that we can’t really ‘imagine’ ourselves to be in.
over, and make the jump to vagueness in the world. What this objection shows is that there’s no reason to think their might be ontic vagueness in the first place.

This is an objection worth taking to heart by anyone wishing to defend ontic vagueness, but I don’t really think it’s an accurate characterization. A key motivation, it seems, behind the push towards ontic vagueness is that there are certain genuinely existing things – properties, the parthood relation, or perhaps even natural kinds – that we have a grasp of regardless of whether or not the words we use to describe them are vague. And it’s these very things – not the words that we latch on to them with – that some people have the intuition might, in certain cases, fail to determinately obtain. Maybe the intuition is that the world doesn’t draw sharp cut-off points, or that between objectively existing entities (properties, say) there seems to be conceptual space for a fuzzy ‘borderline’ region. Whether or not these intuitions are any good, they certainly don’t seem to be a confusion about language. If we are metaphysical realists, then we think that there really are these things out there – things that we may not be able to describe without language, but which we can certainly think about without mistaking them for the words we use to refer to them.

3. A Vacuous Counterfactual

One final objection might be that, since I have presented my account as a counterfactual (for any situation of vagueness: if all the representational content were precisified and indeterminacy still remained, this would be an instance of ontic vagueness\(^{42}\)), it is vacuously true, 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 that ‘if two plus two were to equal five, then pigs would fly’. I have two responses to this

\(^{42}\) This isn’t the counterfactual from (OV), but it does look like the ontic theorist is committed to something in the area if she accepts (OV)
objection. The first is that, despite the fact that, in standard semantics, counterfactuals with impossible antecedents are vacuously true, there is some motivation to think that this shouldn’t be the case. 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 analysis. 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. Perhaps the objector might here claim that such a situation is impossible because vagueness just is representational indeterminacy. But such a response would echo the previous response of the objector who simply cannot engage with the idea of ontic vagueness in the first place. Again, to that objector I have very little to say. To those who are slightly more open to at least conceptual room for the idea, however, I think my account has something to offer.

IV. Conclusion

In summary, then, the above has been an attempt to get clear on what might be meant in a discussion of ‘ontic vagueness’, and to carve out conceptual room for such a notion. Again, this is not to argue that ontic vagueness is actual, or even possible,

43 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).
44 They would need more than this, of course – they would need that vagueness necessarily is representational indeterminacy.
but simply that it’s a live option in the conceptual landscape. As such, a ‘conceptual room’ account is, at bottom, an attempt to address the ‘blank stare’ responses so often received at the postulation of ontic vagueness – ‘I just don’t know what you mean by ‘vagueness in the world’’, such a critic will often say. Well, in outlining a conceptual scheme for ontic vagueness, I’ve tried to explain. And if it’s something we can (hopefully) both agree on, then we can start arguing about it properly.

Appendix: A Semantics for Ontic Vagueness

Note: It’s important to note that no part of my theory-neutral ‘conceptual scheme’ analysis includes commitment to the following (very non-neutral) semantics. I just thought it would be valuable to show that a substantial and fully classical semantics for ontic vagueness is available, particularly for those who were suspicious that the comments above, without addressing some of the serious semantic issues ontic vagueness involves, would only amount to hand-waving.

In answering the question ‘what would it be for the world to be vague?’ theory-neutral conceptual analysis can go a long way toward getting us started. But to provide substantial traction on the question, eventually something more involved (and much more ontologically committing) will have to be pursued. 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 semantic framework for 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. In section (I) I explain the basics of the theory, in section (II) I raise and respond to some potential objections, in section (III) I briefly sketch out how the given semantics might serve as
a model for vagueness in general, rather than strictly for ontic vagueness, and in section (IV) I give a short conclusion.

I. 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.\textsuperscript{45} 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.

Thus for a case of ontic indeterminacy with respect to p, it’s true to say that $\Delta(p \lor \neg p)$. 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 under-determined which of these ways is in fact the case (so $\forall p$ and $\forall(\neg p)$). Excluded middle holds for cases of ontic indeterminacy.

Likewise, if p is ontically indeterminate, it will still be the case that $\Delta(Tp \lor Fp)$ – 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 under-determined which truth value p in fact has. So $\forall(Tp)$ and $\forall(Fp)$. 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.\textsuperscript{46} 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.\textsuperscript{47} This

\textsuperscript{45} I will conduct the following discussion in terms of states of affairs, mostly for the sake of convenience. I don’t want to read anything ontologically significant into ‘states of affairs’ talk, and I’m confident it can be paraphrased away for those that don’t like it.


\textsuperscript{47} See, e.g., Tye (1990) and van Inwagen (1990).
characterization of de re 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 warranted assertability to factivity; if we cannot assert that ‘o is P’ is true, the thought goes, then it must be the case that ‘o 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 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. 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 (\(\nabla\)) and its dual determinacy (\(\Delta\)) as types of pseudo-modal operators – a familiar move from the literature.\(^{48}\) Rather than ranging over worlds, however, the determinacy operators should range over precisifications.\(^{49}\) Determinacy would then be the analogue of necessity; something is determinately true if it is true at every precisification.

\(^{48}\) See, e.g., the discussion in Williamson (1998)

\(^{49}\) This is, of course, the idea which got started with Field (1973) and Fine (1975).
Indeterminacy, however, cannot in the same way be analogous to possibly; 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.

For the purposes here I take precisifications to be possible worlds – not just *like* possible worlds: they *are* possible worlds.\(^{50}\) 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.

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 actualized 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 it is indeterminate which of the possible worlds is the actualized world – 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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\(^{50}\) This has the pleasing consequence that ‘Necessarily, p’ entails ‘Determinately, p’; if p is true at every possible world then *a fortiori* it is true at every possible world that is a precisification of the actual world.

\(^{51}\) Haven’t I just contradicted my previous position, 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
That’s why bivalence and excluded middle both determinately hold. Every possible world – *a fortiori* every possible world in the set of precisifications – is bivalent, and such that excluded middle holds, 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 under-determined. This is the closeness 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:

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*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.
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 have a fully settled 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 de re 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,\(^{52}\) 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.

3. 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

\(^{52}\) The case will be slightly different, though analogous, for variables. The truth conditions for, e.g., \(\exists x V F x\) (where the quantifier isn’t within the scope of the determinacy operator) would be as follows: assume there are two precisifications, worlds 1 and 2; if there is a de re proposition of the form \(F a\) true at 1 but false at 2 (or vice versa), this will license the existential generalization. Basically, you evaluate the de re claims at each precisification, and then make quantifier generalizations based on those. Claims where the determinacy has the wider scope, as in \(\Delta \exists x F x\), can be evaluated via the status of de dicto propositions (and thus work basically the same as non-quantified expressions; determinate if true at all precisifications, indeterminate otherwise). So if \(\exists x F x\) is true at both world 1 and world 2, \(\Delta \exists x F x\) will be true, even if it’s a different thing that’s \(F\) at 1 than at 2 (such that \(~\exists x \Delta F x\).
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.

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, this modal account differs from Akiba’s insofar as it attempts to give a reductive definition of determinacy and indeterminacy, which Akiba explicitly claims not to do. According to this theory, for p to be indeterminate just is for p to be true at some precisification and false at another.

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). 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. 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 analysis of determinacy/indeterminacy is a reductive one, 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 defined 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). And far from admitting this as a drawback, I actually think it’s an advantage of the theory. I’m not alone in questioning the legitimacy of the phenomenon of 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

53 I tend to think this is because it doesn’t make sense to think of worlds making claims about precisification – precisification is a relation that obtains only between the actual, concrete world and abstract representations of it (the ersatz worlds). But denying this doesn’t yield HOV. Indeterminate indeterminacy would be variation across the precisifications as to whether there is variation across the precisifications. But if we 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*), as we should, such variation can never occur. If there are two precisifications for p’s 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. Vp will yield ∆Vp – the logic of determinacy is S5.
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, and thus 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.

It might be objected, however, that this denial of higher-order vagueness, together with the proffered reductive account of indeterminacy, rely on the unwarranted assumption that there will be a unique selection relation which determines the worlds in the set of precisifications. Yet why think this relation is unique? It seems there could be multiple selection relations, each of which selects a specific set of worlds, and it simply be indeterminate which of those selection relations determines the space of precisifications (and thus indeterminate which worlds are in the space of precisifications). Such indeterminacy would both allow higher-order vagueness to re-enter the picture (since indeterminacy in which worlds are in the space of precisifications could give rise to indeterminate indeterminacies), as well as undermine the reductive account of indeterminacy (since indeterminacy could no longer be defined solely in terms of what goes on within the space of precisifications).

I don’t think that such worries can be compelling, however, unless we think of indeterminacy as a special ‘third-category’ status – a model which I’ve explicitly rejected. If we understand indeterminacy as simply things being ‘unsettled’ between two poles, then there will never be unsettledness in what counts as admissible precisifications. If there is indeterminacy with respect to p, then that unsettledness
can be solved by precisifying things as p or as not-p; those are the only two options, and if there is indeterminacy (meaning unsettledness between poles) with respect to p they are both automatically admissible. The only way there could be indeterminacy as to what the precisifications are – and thus indeterminacy as to which selection relation picks out the set of precisifications – would be if there is indeterminacy in whether some things are indeterminate. But that’s just the sort of situation I want to deny the possibility of. Indeterminacy, as characterized here, is not a third unique status on equal footing with truth and falsity, so that it would make sense to say that something can be indeterminately indeterminate, borderline indeterminate, etc. It’s precisely this way of thinking that gets us into trouble with higher-order vagueness in the first place. Indeterminacy is simply unsettledness between two poles. But whenever there is such unsettledness (e.g., indeterminate whether p), there will be a single, settled set of ways that unsettledness can be resolved (e.g., precisify as p, or precisify as not-p). And thus there will be a single, unique selection relation that takes us to the set of precisifications.

II. Objections

1. Indeterminacy in actualization is misapplied

   A. The Objection

   It may be objected that such a semantics 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 each possible world represents itself as being actualized. Now suppose that the actual (as opposed to the actualized) 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). 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

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54 I am rejecting distinct but indiscernible worlds, but the ersatzist will probably want to reject these anyway.
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 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\(^{55}\)) 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,

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\(^{55}\) Since, on the current proposal, every possible world is fully precise.
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 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 \( \Delta (p \lor \neg p) \)) – sometimes it’s just indeterminate which. Likewise, for any p, either it’s true or false, since those are the only two options (so \( \Delta (T p \lor F p) \)) – 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 \( \neg p \). 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 \( \neg p \) 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; nor is it correct to say that at precisifications things are indeterminate. Determinacy and indeterminacy are terms which only apply to the concrete actual world, not to abstract possible worlds. They are defined in terms of the relationship between a concrete object (the actual world) and some abstract objects (a possible world or worlds). For the actual world to be indeterminate is, in effect, for it to have more than one precisification; for it to be determinate is for it to have only one precisification. Possible worlds are not the sorts of things that can have precisifications. But not admitting of any precisification does not equal being determinate; having only one precisification is what it is to be determinate. Again, on the definition of determinacy given here, possible worlds cannot be determinate (or indeterminate) because

As with the earlier discussion of higher-order vagueness, however, you can reject this idea without ending up in contradiction. You’d simply need to interpret ‘the precisifications’ rigidly, and S5 will hold for determinacy (so if things are indeterminate they’re determinately indeterminate).
determinacy is defined as a relation between a concrete object (the actual world) and abstract objects (possible worlds) which represent that object as being certain precise ways.

Thus, given the definition of determinacy in play, (2) is simply not well-formed. To ask whether a possible world is determinate is to ask whether there is only one member in the set of its precisifications. But there is nothing that is the set of a possible world’s precisifications (possible worlds are not the sort of things to be precisified), so the question of whether that set has only one member has a false presupposition. Thus (2) is basically nonsensical.

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.

Since precisifications aren’t the kind of things which can themselves admit of precisification, they are not the kind of things which can be determinate or indeterminate. Thus sentences of the form ‘the actual world is (in)determinate’ cannot sensibly be put inside the scope of a determinacy or modal operator. This means that sentences like ‘determinately, there is determinacy’ or ‘necessarily, there
is determinacy’ will always be ill-formed. Thus we needn’t worry about failures of the T-axiom here, either.

III. Planes of Precisification

The semantics in question can be left exactly as it’s been presented – as a model for ontic vagueness. But it’s tempting to think that it can actually be more ambitious. With a few simple additions, the model on offer might be workable as a bare-bones semantics for vagueness in general. The various kinds (semantic, ontic, contextual, etc) could then be differentiated as needed.

Why bother with such complications? Well, vagueness intuitively seems to be a uniform phenomenon. After all, it’s the same basic paradox – the Sorites – and the same root idea (small changes should never make a difference, but somehow big ones do). Indeed, this notion of uniformity has been part the impetus, for many, to deny the existence of ontic vagueness. Vagueness ought to be uniform, the thought goes, so it’s best to tell a ‘semantic only’ story about it; if we let in ontic vagueness, we’ve missed the uniformity boat entirely.

Giving a uniform analysis of vagueness would thus go a long way both to allay misgivings about the ontic theorist’s lack of parsimony and to speak to the intuition that, whether it’s worldly or wordy, vagueness at the end of the day is basically the same kind of thing. So if the semantics on offer can be beefed up enough to handle vagueness in general, not just worldly indeterminacy, it’s worth complicating matters a little.

It might be doable without complicating matters much, though, using the concept of planes of precisification. Familiarly from the vagueness literature, there

57 There is precedent for this kind of view when it comes to modality: Kit Fine, for example, argues that sentences such as ‘Aristotle is a man’ cannot be embedded within a modal context.
are various features that might contribute to the vagueness of a given sentence. If I utter the sentence ‘Daniel is bald’, it might be vague because we simply haven’t decided exactly what our term ‘bald’ means; or it might be vague because it’s not clear exactly what context we’re in; and so on. What the ontic theorist is proposing, it seems, is an extension of the contributing factors of vagueness; sometimes the non-representational world, independently of how we describe it or think about it, might be a source of vagueness.

If we think of vagueness in terms of precisification, then it seems that there are various dimensions along which we might precisify. We could precisify the extension of a predicate, we could precisify the context, we could precisify the reference of proper names, and finally, for the case of ontic vagueness, we could precisify ontology. Modelling this distinction – these different planes of precisification – will allow a distinction be different kinds of vagueness.

With this notion of planes of precisification in place, we can then think of the semantics on offer as a model for vagueness in general. Whenever a sentence p is indeterminate\(^{58}\), it is so because there are at least two worlds, a and b, such that a and b differ with respect to the truth value of p, and it’s indeterminate which of a or b is the actualized world. P will then be (only) semantically/representationally vague if (and only if) a and b could disagree \textit{with respect to} p without disagreeing about any ontological facts. In contrast, p will be ontically vague if (and only if) worlds a and b must disagree about ontological facts in order to disagree with respect to p. This leaves it open that there can be semantic/representational vagueness in addition to the

\(^{58}\) Or, for the case of vagueness, that special kind of indeterminacy which is sorites-susceptible
ontic vagueness – it’s just that precisifying all the semantic facts won’t be sufficient to eliminate the vagueness in question. ⁵⁹

Obviously, substantially more work would need to be put in to make this a tenable semantics for vagueness in general, but this seems to me to be the direction to explore for doing so. It doesn’t seem, at least to me, to be a hopeless project.

IV. Conclusion

In summary, then, I’ve tried to briefly outline a semantics for ontic vagueness (which can also serve as a model for vagueness in general) according to which excluded middle and bivalence hold. I’ve done so by approaching vagueness as a modal phenomenon and arguing that there is no imprecision at any world, but rather that it is indeterminate which world is actualized. If such a position is tenable, it’s not only more parsimonious and straightforward than alternative models, but also goes a long way toward undermining some of the most stalwart objects (based on the need to reject classical logic) levelled at ontic theorists.

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⁵⁹ This is the same basic idea explicated in (OV) – it’s a case of ontic vagueness if precisifying all the representational content isn’t sufficient for settling matters.
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Chapter 2

What’s So Bad About Ontic Vagueness?

Abstract: This chapter is a survey of the major arguments against ontic vagueness. I group the arguments into three major categories – logical, semantic, and metaphysical/epistemological – and then examine each in turn. For each, I attempt to evaluate its cogency and sketch possible responses for the would-be defender of ontic vagueness. I conclude that none of the arguments are conclusive.

David Lewis warns us: “Realism about vagueness is anti-realism about the world.”

Terrence Horgan assures us: “The notion of an object such that there is no fact of the matter about its boundaries is at bottom incoherent”

And Michael Dummet agrees: “The notion that things could actually be vague, as well as being vaguely described, is not properly intelligible.”

Needless to say, ontic vagueness has not been a particularly popular ontological commitment. But while most philosophers have readily agreed that ontic vagueness is a Bad Thing, there hasn’t been much consensus for why we should think this is the case. More often than not, it’s simply taken for granted as obvious.

Assuming, however, that denial of ontic vagueness is not among the class of things that are essential to our ability to reason and thus in some sense cannot be argued for, it looks as though a universal rejection of ontic vagueness, if it is to be principled, needs to have compelling argumentation in its favor. In this paper, I will examine the predominant arguments against the existence of ontic vagueness – divided into three general categories (and respective sections) of logical arguments, semantic arguments, and metaphysical/epistemological arguments –
and attempt to evaluate their efficacy, sketching potential responses. In doing so, I will by no means attempt to argue for the possibility of ontic vagueness. I simply wish to survey complaints against it, and theorize how the proponent of ontic vagueness might best respond. This paper will, in short, address the question “what’s so bad about ontic vagueness?”

I. Logical Arguments

1. Excluded Middle

First things first, a straightforward objection to the existence of ontic vagueness is that it violates the law of excluded middle. Suppose we consider three molecules – \( a, b, \) and \( c \) – in the vicinity of a vague object.\(^{60}\) \( A \) is determinately a part of the object and \( c \) is determinately not a part of the object, but \( b \)’s status is indeterminate. According to classical logic, each of the following propositions should be logical truths:

(1) Either \( a \) is a part of the object, or it isn’t.

(2) Either \( b \) is a part of the object, or it isn’t.

(3) Either \( c \) is a part of the object, or it isn’t.

(1) and (3) are both true, the argument from excluded middle contends, but if the object is an instance of genuine ontic vagueness then (2) is not. So we have a violation of excluded middle.

It’s of course open to the ontic theorist to reject classical logic an instead adopt a logic that does not endorse LEM (as many philosophers working on vagueness have found good reason to do). But this is hardly a convincing response to the objector to ontic vagueness who takes a denial of LEM as clear-cut evidence against it, so it’s

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\(^{60}\) I set this up in terms of an object with vague boundaries, but it could easily be reformulated in terms of vague property instantiation, vague temporal extension, etc.
worth exploring how the ontic theorist who wants to keep classical logic might respond.

It’s not at all clear, such a response might run, why the proponent of ontic vagueness should think that propositions like (2) really are violations of excluded middle. It seems perfectly open for the ontic vagueness theorist to claim that examples like (2) are true, just as much as propositions like (1) and (3) are true. That is, there doesn’t seem to be any reason why the defender of ontic vagueness can’t accept that for (ontically) indeterminate cases, excluded middle still holds.

To illustrate, let’s return to the molecules case. If b is a borderline case for being part of the object, then the ontic vagueness theorist can contend that excluded middle holds for the claim ‘b is a part of the object, or it isn’t’; that is, she can claim that it’s fully determinate that either b belongs in the object or out of it. It’s just indeterminate which. The basic idea then, is that for any proposition, p, that expresses an ontic indeterminacy of the kind in question, she can happily accept \( \Delta(p \text{ or } \neg p) \) while still maintaining \( \forall p \) and \( \forall \neg p \). One of disjuncts has to be the case – the indeterminacy simply lies in which one does in fact obtain.\(^{61}\)

2. Bivalence

This, of course, brings us to the issue of bivalence. Even if she can hang on to excluded middle, an objector could argue, it does seem that the ontic vagueness theorist will have to deny bivalence for propositions about states of affairs which are ontically vague. Thus commitment to ontic vagueness is in tension with classical logic.

There are two main points that the ontic vagueness theorist can make in her defense at this juncture. The first is that, although bivalence is a presupposition in

\(^{61}\)For a far more in depth discussion of these issues, see especially Barnett (in draft)
classical meta-theory, it is far from uncontroversial. Many non-standard logics reject it, and – particularly relevant here – most logics dealing with vagueness are among them. If we find it not wholly implausible that revisionary (non-bivalent) logic can be taken on board in treatments of semantic vagueness, then it at least should not appear as a completely devastating argument against ontic vagueness that it needs a similar treatment. After all, if vagueness of any sort is a broadly uniform phenomenon – and we seem to have no reason to think otherwise – then we should allow for, and expect, uniformity in its analysis. And an analysis of vagueness which denied bivalence would not exactly be headline news.

Secondly, however, it does not seem at all clear – just as in the case of excluded middle – that the ontic theorist is, after all, committed to denying bivalence. The same move she employed to preserve excluded middle looks equally applicable here.\(^\text{62}\) She could simply maintain that bivalence holds, and thus that each proposition has a determinate truth value, but for some it’s simply indeterminate which truth value they have (i.e., there are only two options, true and false; the proposition in question has one or the other, it’s just indeterminate which).\(^\text{63}\) Thus she can happily accept \(\Delta(T(P) \lor F(P))\) while still maintaining \(\forall T(P)\) and \(\forall F(P)\).\(^\text{64}\)

\(^{62}\) Again, see Barnett (in draft) for helpful discussion. The position that follows also seems to be suggested in Horwich (1990), McGee and McLaughlin (1995), and Field (2000).

\(^{63}\) It might be helpful to cash this out in terms of truthmakers – there are in this situation two possible states of affairs, \(x\) and \(y\). \(x\) is the truthmaker for \(T(P)\) and \(y\) is the truthmaker for \(F(P)\) (alternatively, the falsemaker for \(P\); or the truthmaker for some other thing which is sufficient for the falsity of \(P\)). But, due to ontic vagueness, the world is undecided between the two states of affairs; it’s indeterminate which one obtains. That’s not at all to say, though, that there’s a third possibility – the state of affairs \(x’\) of \(P\) being neither true nor false.

\(^{64}\) This will, of course, require formulation of a semantics which allows for a gap between truth and determinacy – i.e., something can be true without being determinately true. One way of doing this might be to argue that ‘determinately’ means ‘true in all precisifications’ (understanding precisifications as something similar to ersatz worlds, representing certain precise ways the world might be) – something could thus conceivably be true in the actual world but false in certain admissible precisifications, making it true but not determinately true. A semantics of this form for determinacy is defended in Barnes (in draft). Another semantics that allows for a similar treatment of bivalence would be that of so-called ‘non-standard supervaluationism’, as defended by, e.g. McGee and McLaughlin (2000).
Furthermore, it’s not at all clear that the philosopher who rejects this move (and the analogous one for LEM) and maintains classical logic has, even from her own perspective, a knock-down argument against ontic vagueness. Even if we think that classical logic is the ‘correct’ logic, at least for the philosophy seminar, we still may not be able to rule out ontic vagueness. The central idea of ontic vagueness is that the world itself – independently of how we think about it – can be indeterminate (and not just indeterminate, but that special species of indeterminacy we know as vagueness). It is a thesis about the mind-independent world, and some will argue that it does indeed violate classical logic, the above defense notwithstanding. But what makes us think that logic, even the ‘correct’ logic, maps on to the world in any special way? Why suppose that logic tells us about anything other than our own system of reasoning – that is, about logic? It seems at least an open position to maintain that, for the philosophy seminar, classical logic is the system we ought to use, but that logical principles like bivalence can’t be used to draw substantial conclusions about the world, because we don’t have any particular reason to think that the world matches up to our logical system.\(^{65}\)

Or, taking a Quinean stance on logic, you might think that classical logic is our default logic – the logic we have the best reason to use at the moment – but that it’s empirically defeasible. Suppose ontic vagueness, which (assuming you reject the moves outlined above) implies the rejection of classical logic, is an empirical matter – i.e., ontic vagueness is a special sub-species of ontic indeterminacy.\(^{66}\) and whether there is any ontic indeterminacy is a question for physicists to decide. If eventually

\(^{65}\) Recent quantum theory, which I don’t pretend to know anything about, seems sometimes to point in the direction of the world not quite matching up to logic (especially bivalence) – see, e.g., French and Krause (2003). Thus if you think that ontic vagueness is an empirical matter, something for the physicists to decide, then this route seems perfectly open.

\(^{66}\) Understanding vagueness as a special type of indeterminacy which, characteristically, is Sorites-susceptible (see Greenough (2003)).
our best theory of physics told us that there is ontic vagueness, then we would have reason to give up classical logic. So even if we now use classical logic and ontic vagueness is in tension with that logic, that needn’t entail that ontic vagueness is automatically and forever ruled out.

It seems clear, then, that arguments from bivalence (and likewise from LEM) do not suffice to disprove ontic vagueness. There is conceptual room for the ontic theorist to maintain a fully classical logic while still thinking that the world itself is vague; but even if this is denied (or if the ontic theorist prefers a non-classical approach, as many philosophers working on vagueness do) it does not look to be a knock-down objection to a theory of ontic vagueness.

3. Vagueness and Logical Terms

Ted Sider, in his book *Four Dimensionalism* and, in more detail, in his paper ‘Against Vague Existence’ gives an argument against a certain construal of vagueness that also hinges the principles of first-order logic. In *Four-Dimensionalism* and (though to a slightly lesser degree) the ‘Against Vague Existence Paper’ Sider is clear that the argument is aimed only against the vagueness of ‘everything’ – i.e., vagueness in the universal quantifier. He explicitly assumes ‘the linguistic theory of vagueness’. Regardless of his intent, however, many people have, in conversation, presented the argument to me as one threatening the tenability of a theory of ontic vagueness, so I shall here address it as such (letting Sider* be the version of Sider who runs the ontological version of the argument, with vagueness in things rather than in ‘everything’).
If ontic vagueness is metaphysically possible, Sider* argues, then it must be possible in a world containing only a finite number of objects.\(^{67}\) So imagine a world containing – at its most basic level – only two mereological simples. Now suppose that it is vague whether or not these simples compose a composite object. The question “how many objects are there?” will thus have an indeterminate answer – either two or three. The proponent of ontic vagueness, Sider* claims, must allow that this is a metaphysical possibility according to her view. Sider*, however, contends that this cannot plausibly be maintained.

Sider* argues that in a world with only finitely many objects and ontic vagueness, you can construct sentences of indeterminate truth value using only first-order logic with identity. Taking the previous example of the world with two simples indeterminately composing a composite object, the sentence \(\exists x \exists y((Cx \land Cy) \land \forall z(z \neq x \rightarrow z=y))\) – with “C” being read as “is a concrete object” – comes out as having an indeterminate truth value. But Sider writes that “Numerical sentences have no syntactic ambiguity. . . [and] the concreteness predicate ‘C’ presumably has precise application conditions since it was defined by a list of fundamental predicates for ontological kinds that do not admit of borderline cases. . . So if any numerical sentence [of the kind in question] is to be of indeterminate truth value, it must be because one of the logical notions is vague.”\(^{68}\) Yet this conflicts with the intuitively plausible assumption that “logical words are never a source of vagueness.”\(^{69}\) Sider* thus concludes that, because logical terms alone can never be a source of vagueness, ontic vagueness is impossible.

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\(^{67}\) I’ll grant this as an assumption to discuss Sider*’s argument, but it looks false. Suppose that you think ontic vagueness only arises from composition (only complex objects are vague – point-sized simples are precise), and moreover you think that the doctrine of arbitrary undetached parts (DAUP) is true. In that case, the only worlds in which ontic vagueness occurs are worlds in which there are extended things, but (DAUP) entails that in all these worlds there are infinitely many things.

\(^{68}\) Sider (2001), 125

\(^{69}\) Sider (2001), 126
But here it seems that Sider* is missing the key thrust of the ontic vagueness position. The defender of vague objects can readily agree that logical words are never the source of vagueness. True, in this case a sentence containing only logical terms is vague. But that does not mean that the source of that vagueness is from the logical terms themselves. The source, rather, is the ontic indeterminacy. The vagueness of the sentence in question arises because perfectly precise logical operators have been applied to an inherently vague state of affairs. We know exactly what we mean by each of the logical terms in question; there is no source of indeterminacy there. It is simply that the world has left it underdetermined how these terms ought to apply in the given situation. Just because the proponent ontic vagueness commits to indeterminate sentences involving only logical terms does not mean she must in turn commit to logical words as a source of indeterminacy. She has a perfectly reasonable alternative for the source of that indeterminacy – ontic vagueness.

4. Evans and the Indeterminacy of Identity

Gareth Evans (1978) developed an (in)famous argument against the existence of vague objects based on the apparent need for indeterminate identity statements.\(^7^0\) Suppose we have two objects a and b. Let a be Tibbles the cat and b be the conglomeration of molecules that includes the hair on the verge of being shed. According to the vague objects theorist, it is indeterminate whether the hair is a part of Tibbles. Thus, according to Evans, it is indeterminate whether \(a = b\) (\(\forall a = b\)). So Evans makes a property abstraction step, claiming that b has the property of being indeterminately identical to a. Yet we know that everything is identical to itself, so

\(^7^0\)Pinillos (2003) presents a modified version of the argument, which he claims is not open to many of the original’s weaknesses. Pinillos’ argument, however, relies on the assumption that the ontic theorist is working in a truth-functional logic, which of course ontic theorists are by no means committed to doing. For the would-be defender of ontic vagueness who does accept a truth-functional logic, though, both Heck (in draft) and Hyde (in draft) have written substantial responses to Pinillos which counter his claims.
we know that it is not indeterminate that \( a = a \), and thus that a does not have the
property of being indeterminately identical to a. But by an application of Leibniz’s
Law we can thus conclude that \( \neg(a = b) \). Assuming he has a system as strong as S5,
Evans concludes from here that \( \Delta \neg(a=b) \), which is inconsistent with the initial
assumption that \( \forall a = b \).

Formally, then:

(1) \( \forall(a=b) \)

(2) \( \lambda[\forall(x=a)]b \)

(3) \( \neg\forall(a=a) \)

(4) \( \neg\lambda[\forall(x=a)]a \)

(5) \( \neg(a=b) \) [from (2) and (4), by Leibniz’s Law]

This is not a straightforward contradiction, but Evans then reasons that “if
‘Indefinitely’ and its dual ‘Definitely’ (‘\( \Delta \)’) generate a modal logic as strong as
S5,\(^{71}\) then (1)-(4) and presumably Leibniz’s Law can each be strengthened
with a ‘Definitely’ prefix, enabling us to derive

(5') \( \Delta \neg(a=b) \)

Moreover, because we are dealing with genuine ontic vagueness – the proof was
never meant to be a reduction of vague identity statements, as the names a and b
rigidly denote objects – we cannot explain away the apparent indeterminacy we began
with as semantic indecision. Thus we cannot give an explanation of the contradiction
and so are left with a brute inconsistency.

For the proponent of ontic vagueness, however, a great deal can be said to
address Evans’ argument. For starters, it doesn’t seem at all clear (contra Evans’

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\(^{71}\) This assumption is far from uncontroversial, since it amounts to a denial of higher-order vagueness
(since S5 would dictate that each proposition has its determinacy status determinately – so it could
never be the case that, e.g., \( \forall \forall \forall P \)).
assertion) that ontic vagueness entails vague identity.\footnote{See Williamson (1998)} But for those who either think it always does or want the particular forms of it which do, Richard Heck (1998), Dorothy Edgington (2000), and Terrence Parsons and Peter Woodruff (1995) have all written substantial and well-received papers arguing that the argument is unsound or invalid. While I do not have the space here to address their various criticisms of the argument, suffice it to say that there are many options for the philosopher who doesn’t want to accept Evans’ conclusion.

Some such responses, though, will only work against the construal of de re indeterminacy – for example, that which arises between a vague object and one of its precisifications.\footnote{This seems to be a characteristic of the response favored in, for example, Noonan (2004).} Yet vague identity can take many other forms as well – e.g., vagueness in persistence: whether this current thing is identical to that past thing, etc – and Katherine Hawley (2001) has noted that we seem to be able to extract vague identities of various forms from different cases of ontic vagueness. What response the ontic theorist favors to Evans’ argument will thus depend on what type of vague identity she is committed to. Again, however, though there is not space to address them here, the responses to Evans are many and varied; it will simply be incumbent upon the would-be defender of ontic vagueness to choose one which is applicable to the sort of vague identity which her theoretical commitments incur.

II. Semantic Arguments

1. Representation and Reality: Russell’s Objection

Bertrand Russell (1923) first formulated an oft-repeated objection to accounts of ontic vagueness which claims that such theories rely on a conflation between representation and reality – what he termed the ‘fallacy of verbalism’. Vagueness, Russell argues, is
an inherently representational feature. Thus to argue that vagueness exists in the mind-independent world is to confuse reality with our representation of it. According to Russell:

> Vagueness and precision alike are characteristics which can only belong to a representation, of which language is an example. . . Apart from representation, whether cognitive or mechanical, there can be no such thing as vagueness or precision; things are what they are, and there’s and end of it.

So, for Russell, ontic vagueness is a category mistake.

It seems, however, that Russell’s argument simply begs the question against the advocate of ontic vagueness. His basic strategy is this:

1. Ontic vagueness requires vagueness to exist non-representationally.
2. Vagueness does not exist non-representationally
3. Therefore, there is no ontic vagueness.

Obviously, though, ontic vagueness theorists aren’t going to be particularly happy with premise (2), since it is tantamount to the denial of their position. There is, however, a related argument that gives a more robust account of why we ought to think that vagueness deals only with representation, not with reality. We shall examine this argument in the next section.

There is, though, a more charitable reading of the Russell objection which – though it has rather doubtful claims as the objection Russell actually intended – deserves further attention. Russell seems to view vagueness as inherently a type of mismatch between propositions and the world. Vague propositions are so because they don’t latch on to the world in any exact way. Such a word/world disparity is constitutive of (or at least fundamental to) vagueness, so talk of the world on its own
being vague is a fundamental mistake – when there’s just the world by itself, we lose an element of mismatch.

Importantly, however, if you find such a theory of vagueness plausible, it still doesn’t rule out ontic vagueness. The ontic theorist can allow that vagueness consists in a word/world mismatch, but argue that whether a case of vagueness is semantic or ontic will depend on the direction of explanation of the mismatch in question. For semantic vagueness, the world is a certain way, determinately, and vagueness arises because it’s not clear whether the proposition is truly describing the way the world is. For ontic vagueness, in contrast, the proposition describes the world as being a certain precise way, and the vagueness arises because it’s not clear whether the world in fact is that way.\(^\text{74}\) So in both ontic and semantic cases, vagueness can be understood as a world/word discrepancy, but the distinction between the two is whether the indeterminacy in fit between words and world arises because of the way the words are, or because of the way the world is.

2. Semantic Indecision: Vagueness as a Purely Semantic Phenomenon

Many (if not most) philosophers contend that the phenomenon of vagueness is exhaustively characterized as semantic indeterminacy. Using motivations from this basic view, they then give what is, in effect, a strengthened version of Russell’s argument – telling us not only that we ought not think of vagueness as non-representational, but also giving us reasons why.

When we encounter a classic Sorites series like the heap of sand with individual grains being removed, we should not run out and conclude that there are objectively existing objects – heaps – which are vague. Rather, we should draw

\(^{74}\) This isn’t to say that the ontic theorist is committed to all vagueness being strictly ontic. It’s just that, for a certain set of cases (the ontic ones), you could precisify all the representational content such that you’ve single out a unique, (semantically) precise proposition, but it could still be indeterminate as to whether the truth conditions for that proposition obtain. And that indeterminacy would be due to how the world is, not to how our words are.
inferences about our own language – that our use of terms such as “heap” is not precise enough, for example, to successfully accommodate fine-grained (sorry!) specifications.

And the case is similar with examples of so-called ontic vagueness. As David Lewis famously argues, we can face a Problem of the Many scenario in the case of the Outback.\(^\text{75}\) There are many possible precisifications of the central region of Australia and no apparent fact of the matter about which specific region the term “the Outback” refers to. But this doesn’t mean that the world has left it underdetermined, that there is a vague object – the Outback – that objectively exists but has fuzzy boundaries. Rather, we simply coined a phrase – “the Outback” – for the central region of Australia and never quite made up our minds as to what precise area we wanted our usage of that term to include. Thus there are many different precisifications of ‘Outback’, and each equally (but none uniquely) deserves the appellation. Mystery solved. In cases such as these, says Lewis, there’s nothing metaphysically deep going on at all. Moreover, if it were possible to eradicate the indeterminacy from our language, we would find that the phenomenon of vagueness had been purged right along with it. In the case of vagueness, once we’ve told the semantic story, we’ve told the whole story.

Yet the proponent of ontic vagueness might still argue that their adversary is guilty of question-begging. The Lewis-style arguments seem to run as follows:

1. Ontic vagueness requires the existence of vagueness that is not purely semantic.
2. All vagueness is purely semantic.
3. Therefore, there is no ontic vagueness.

\(^\text{75}\) See Lewis (1986) for his discussion of the issue.
Such a characterization of the argument, however, isn’t really fair. The opponent of ontic vagueness doesn’t simply stipulate that all vagueness is semantic. Instead she gives reason to suppose that this might be the case. It certainly seems that most vagueness is purely semantic. And we can give natural and straightforward explanations of why that vagueness exists. Why assume, then, that vagueness is not a uniform phenomenon? Why conclude that there is a small subset of vagueness cases that represents genuine ontic vagueness, rather than basic semantic vagueness?

Many logical as well as metaphysical puzzles arise from taking this extra step, so the semantic theorist argues that we must have good reason to conclude that there is any actual vagueness de re. But we have no such reason, argues the semantic theorist – nothing that would be compelling enough to make us think that we were dealing with an entirely different form of vagueness than that we typically encounter – and so we ought to conclude that all vagueness arises from semantic indeterminacy. Thus there is no ontic vagueness.

It seems, then, that if the defender of ontic vagueness can successfully respond to the challenge outlined above, she will have to do so by explaining why we ought to think there is vagueness in the world. The characterization of vagueness as semantic indeterminacy appears plausible as a default position in debates on vagueness. Thus, if we are asked to believe in an entirely different and in many ways more mysterious and problematic form of vagueness, we will have to be given good reason to do so.

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76 Unless you are tempted to posit a very elaborate ontology, in which there really are objectively existing entities like heaps and objective properties like baldness – in that case you could simply argue that the source of all the vagueness we encounter is the world itself; i.e., that our words are vague because the objectively existing things they describe are themselves vague.

77 The ontic theorist, if she’s feeling cantankerous, can of course here respond that given the current state of debate in the vagueness literature it’s far from obvious that we do, in fact, have straightforward explanations for semantic vagueness; theories of semantic vagueness are, quite simply, a mess, and nearly all are riddled with problems and potential counterexamples. Why should we be so quick to assume, then, that the semantic story is the better and more natural one?
Whether or not proponents of ontic vagueness can succeed in providing reasons such as these remains, of course, controversial. For the “state of the debate” purposes here, I simply wish to contend that they have a fighting chance.

It’s certainly reasonable to assume that semantic indeterminacy is responsible for most of the vagueness that often cited as being “in the world”. For famous cases like the Outback and Kilimanjaro, it would be foolhardy to conclude that these represent genuinely vague objects. Rather, what seems most likely is that terms like “Outback” and “Kilimanjaro” are simply artifacts of language, and thus that their vagueness is an artifact of language as well. The world itself simply contains geological features that we’ve sorted into regions; the underdetermination in those regions, though, has to do with us, not the world.

What sorts of arguments, then, might ever lead us to locate vagueness in the non-representational world, rather than in our language, as we more generally do? The answer to this question will depend largely (if not entirely) on your metaphysical commitments elsewhere. Mark Heller (1996) argues against ontic vagueness because it does not take into account the inherent ‘context dependency’ of vagueness. But indeed it is precisely the notion that some Sorites-susceptible cases, because of the nature of their subject matter, simply do not have the context sensitivity or indeterminacy of reference that semantic vagueness involves, which leads ontic theorists to think the semantic story is inadequate. What follows, however, is an example of the kind of motivation that might lead you to think the semantic story inadequate. Suppose that you adopt a broadly ‘natural kinds’ theory of the world. Divisions that fall along these lines will be objective – whether something falls into a specific natural kind is determined by the world, not by our descriptions of the world. And suppose, moreover, that you think that cats are natural kinds. Tibbles is
shedding, and as he lies asleep on the mat there is a hair that is in the process becoming dislodged from Tibbles’ skin.\textsuperscript{78} Is the hair a part of Tibbles?

There doesn’t seem to be much room, many have argued, for semantic vagueness in “is a part of”. Parthood is, at least arguably, a precise relation. Moreover, it is a relation that appears to be a natural one (that is, not simply a construct of language; our word ‘part’ refers to a genuine, objective relation).

Yet, whereas we had good reason to suppose that constructions like “the Outback” are simply artifacts of language – that the world itself does not determine what the Outback is – the case differs when we consider cats (assuming the metaphysical commitment that cats are natural kinds). When we point to the Outback, there are many possible regions we could mean, and no particular fact of the matter about which one is the “correct” Outback. But this doesn’t seem particularly problematic – regions aren’t natural kinds, and so there can be many precisifications of Outback and vagueness as to what we mean by “Outback” without giving rise to any puzzle.

Not so with Tibbles the cat. Cats – according to the metaphysician entertaining this argument – \textit{are} natural kinds. Thus we can’t simply say that there are many possible precisifications of Tibbles – many cats – and no particular fact of the matter about which is correct.\textsuperscript{79} It seems that, though the world doesn’t individuate things like geographical regions, it \textit{does} individuate living beings, and so when we refer to Tibbles we don’t point to some nebulous cat-like region that we haven’t quite made up our minds how we want to precisify. Rather, we pick out \textit{that living organism} – a creature that nature seems to have demarcated whether or not we

\textsuperscript{78} And of course you can keep going like this – at the end of the hair is a protein molecule that is loosing its bond to the rest of the hair, and at the edge of the protein molecule is a carbon atom, and at the edge of the carbon atom is an electron in hyper-position. . .

\textsuperscript{79} The solution offered by Lewis in his (1993)
choose to refer to it. So when Tibbles the cat appears to have vague boundaries, it’s not that we haven’t made up our minds what we want “Tibbles” to refer to. We know exactly what we mean by our usage of “Tibbles” – *that cat*. It’s just that the world seems to have left it underdetermined where the cat ends and the non-cat world begins.

If, as the metaphysician in question maintains, it’s implausible to suppose that either parthood or cats are constructs of language, then when there is vagueness in whether or not something is a part of a particular cat, it’s likewise implausible suppose that this vagueness is a construct of language. If being a part is semantically determinant and being a cat is semantically determinant, then semantic indeterminacy doesn’t appear to play much of a role in the scenarios like the Tibbles the cat puzzle. Thus cases like that of Tibbles, for the metaphysician that holds the aforementioned commitments, may well give good reason to think that semantic indeterminacy alone does not exhaustively characterize vagueness.

And there are many other metaphysical theories that give rise to potential vagueness. Natural kinds or, similarly, ‘sparse properties’ are an excellent example, as are certain ‘abundant’ theories of properties. It can be argued that restricted (but not Markosian-style ‘brutal’) composition leads to vagueness in what composite entities there are, that three-dimensionalism leads to vagueness in persistence, and even that moral realism leads to vagueness in the rightness or permissibility of certain actions. All these arguments deserve papers to themselves, and each can certainly be resisted. Moreover, there are viable (and often less vagueness-prone) alternatives available to each theory in question. How much our metaphysical views ought to be shaped by the threat of ontic vagueness is a tricky methodological question, but it’s

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80 See Barnes (2005).
sufficient for the purposes here that metaphysical commitments which can arguably lead to vagueness are definitely still on the table. Suffice it to say that which arguments for the inadequacy of a purely semantic treatment of vagueness you might find compelling will depend on your metaphysical commitments elsewhere, but that it does at least seem to be an open possibility that such an argument be provided. If this is the case, then the semantic indecision argument does not conclusively tell against a belief in ontic vagueness (though it does, it seems, show that the burden of proof, as it were, is on the shoulders of the ontic theorist, rather than the semantic one).

3. The Uniformity of Vagueness

In a closely related argument to that outlined above, it has been argued that we ought to reject ontic vagueness on grounds of parsimony. We need semantic vagueness to give an adequate story of the world. Moreover, it’s quite obvious (to most) that semantic (or at least representational) vagueness exists. So once we are committed to semantic vagueness, it seems much better to conclude that vagueness is a uniform phenomenon – couching all puzzles of vagueness in the framework we are already committed to. Positing a further, ontic realm of vagueness would seem superfluous, since we already have theoretical commitments – i.e., semantic vagueness of some sort – adequate to deal with whatever puzzles of vagueness we may encounter.

There are a few points to be made in response to such an argument. The first is that, depending on how we understand ‘uniformity’, allowing that there are both semantic and ontic forms of vagueness needn’t entail that vagueness is not uniform. If by uniform we simply mean that vagueness should have a single, unified treatment – e.g., supervaluationistic, multi-valued, etc. – no matter what form it takes, then ontic

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81 I don’t know of anywhere in the literature where this is explicitly written up, but it was offered to me as an argument by Daniel Nolan.
vagueness would be perfectly compatible with vagueness being uniform as such. We would simply need to allow that vagueness is a single phenomenon with multiple realizers.

Moreover, we are already committed to multiple realizers for vagueness. There can be vagueness in language, vagueness in concepts, vagueness in context, etc. Allowing ontic vagueness would simply be adding another category of realizer to the list. Admittedly, however, all the forms of vagueness we routinely accept are representational. You might think that there’s a very big jump from allowing various forms of representational vagueness to allowing non-representational (i.e., ontic) vagueness.

This is where the second half of the uniformity objection presses hard. Semantic vagueness, the proponent of the uniformity argument claims, is a fully adequate explanation of the puzzles of vagueness we encounter, and thus we have no good reason to go in for ontic vagueness. Thus we should remain as purely semantic theorists unless convinced otherwise.

Here I would certainly agree that the burden of proof in the matter lies solely on the shoulders of the ontic theorist. Our default should be to remain semantic theorists unless we are somehow talked out of it. But precisely what the ontic theorist would disagree with is the uniformity objection’s claim that semantic vagueness is fully adequate to characterize all the vagueness we encounter. For some puzzles of vagueness, she will claim, a semantic diagnosis is either implausible, inapplicable, or both. As outlined in the response to the semantic indecision argument, which puzzles of vagueness she might find compelling as ontic and which arguments that motivate

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82 Again, if you had a very elaborate ontology you might argue that all vagueness is ontic in its source, but this is quite an extreme view. Importantly, though, such a view would deny that ontic vagueness faces a “burden of proof” against a default semantic diagnosis of a case of vagueness, because you would argue that in fact ontic vagueness should be our default position.
her to abandon a purely semantic theory will depend largely (if not entirely) on her metaphysical commitments elsewhere. But, though the burden of proof is on her to provide such arguments, it certainly does not seem like an open and shut case that she will not be able to do so (particularly if she maintains some of the viable, but rather more vagueness-prone metaphysical theories). Thus, while the uniformity objection might well convince us to remain semantic theorists for the moment – and shows that our default theory ought to be a purely semantic one – it does not seem to be a knock-down argument against the possibility of ontic vagueness.

4. The ‘Bump in the Carpet’ Objection

Another way of attempting to situate vagueness irrevocably in semantics, favored by Mark Sainsbury (1994), is to claim that whenever we have precisified one semantic component in a situation of vagueness there will always be another semantic component ready to serve as a new locus of the vagueness in question. In this way, we will never, as it were, ‘get at the world’. Vagueness will always just shift about from one semantic component to the next.

Suppose that Daniel is a borderline case of baldness. The statement ‘Daniel is bald’ will thus be vague. But suppose that we were to fully precisify ‘bald’ – having it mean, perhaps, ‘has less than or equal to 476 hairs’. Daniel, however, has 476 hairs which are firmly attached to his scalp, and one which is teetering on the edge, about to be dropped. It would seem then, that it’s indeterminate whether that last hair is a part of Daniel, and thus indeterminate how many hairs Daniel in fact has. So Daniel is still a borderline case of baldness, even though we’ve fully precisified ‘bald’. Such indeterminacy still has a ready semantic diagnosis, however, because we can now situate the vagueness in ‘is a part of’ or in ‘Daniel’. And we can, so the thought

Sainsbury is not one of the philosophers who buy the idea that parthood is precise.
goes, go on like this ad infinitum. Like the proverbial ‘bump in the carpet’, the vagueness will simply move about our words – we will never get back to the world.

Yet if we think of ontic vagueness as vagueness which would be present were all the semantic content fully precisified, then the prima facie reading of this objection doesn’t hold water. We don’t need to argue that for any case of purported ontic vagueness the semantic content is fully precisified; we’re simply interested in the counterfactual situation of what would happen if it were fully precisified. As long as it would be the case that if the semantic content was fully precise, then there would still be vagueness, then we can characterize ontic vagueness while sidestepping the above worry.

A common response here is that, were all the representational content precisified, there would simply be no vagueness left (because if there were, you haven’t precisified enough). But that is just to beg the question against the ontic theorist. Think of a proposition that is semantically indeterminate as one that is indeterminate in what its truthmaker is – there are a range of precise truthmakers, each of which admissibly could serve to make the proposition true. To precisify the semantic content is to single out a one among this range as the unique truthmaker for that proposition. But the proposition could still be vague (still lack a determinate truth value) because it could be indeterminate whether or not that truthmaker in fact obtains. But this would be a fact about the non-representational content – i.e., the mind-independent world.

There is, however, a more substantial reading of this objection, in which it is a diagnosis of why we might be (wrongly) tempted to think there is any ontic vagueness in the first place. According to this reading of the objection, the worry is that theorists of ontic vagueness have failed to see what amounts to the ‘bump in the carpet’.
Having eliminated vagueness from a particular semantic component, but noticing that the situation in question is still vague, the ontic theorist concludes that it must be the world, rather than language, that is the source of this vagueness. But this is simply to miss the fact that a purely semantic vagueness has merely been relocated elsewhere, to a different semantic component. The ontic theorist thus effectively fails to see the bump in the carpet, and concludes instead that there’s something wrong with the floor.

While such an objection is certainly something to take to heart for the would-be defender of ontic vagueness, I don’t find it particularly plausible as a characterization of the type of metaphysical inferences such a theorist is making. If we are metaphysical realists, then we believe that we can think about the mind-independent world, and the entities it contains. Some, though not all, of our words succeed in having genuine reference to the world. So, if some type of property theory is true, a realist of this stripe (as most metaphysicians are) will contend that when she uses the word ‘properties’ in a philosophical discussion she is saying something about properties, not about ‘properties’. And though she will of course allow that her ability to describe and reason about such things will inherently be couched in linguistic terms, she will nevertheless maintain that she really can think about such non-representational entities, rather than simply about the words she uses to describe them. Thus, in positing ontic vagueness, she is reporting the intuition that some of these very non-representational things – properties, objects, etc – might be indeterminate.

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84 And even if the argument worked, it would at best be a methodological argument against positing ontic vagueness, rather than an argument against the possibility or coherence of ontic vagueness itself.
And this, no matter what else you might think about it, does not seem to be a confusion about language.\footnote{Indeed, it is a confusion about language no more than it is a confusion about language when her opponent claims, of that very same thing, that it must be precise – they are each knowingly speaking about mind-independent entities.}

Insisting that it is – that we can only really have intuitions about words being vague, rather than the world being vague – amounts to a rejection of metaphysical realism. And that is something few metaphysicians – even the ones dead-set against ontic vagueness – will be happy with.

III. Metaphysical and Epistemological Arguments

1. The A Priori Claim

It’s been argued (by Frank Jackson (2001) and Brian Weatherson (2003), among others) that it’s a priori that there is no ontic vagueness. Of course, as arguments go, this isn’t much of one. It’s simply supposed to be obvious (a priori) that there can’t be vague objects, so we can conclude that there aren’t any vague objects. QED.

But it’s important here to distinguish between two claims: the first is that we do in fact know, a priori, that there is no ontic vagueness; the second is that, if we know that there is no ontic vagueness, we know it a priori. The second, weaker claim is simply a point about the epistemology of the metaphysical issues at hand. The defender of ontic vagueness could easily agree that the presence or absence of ontic vagueness is an a priori matter, though she by no means needs to. She might think, for instance, that whether or not there is ontic vagueness is an empirical matter largely for the physicists to decide – we ought to believe in ontic vagueness simply if our best physical theory of the world requires it. But many philosophers tend toward the more a priori route, so they could agree that if we are to know that there is no ontic vagueness, then we will know it a priori. ‘There is no ontic vagueness’ will be the
conclusion of an argument with premises which themselves require no empirical justification. And, in reflection, most of the arguments in this paper take precisely this form. They attempt to show, simply by appeals to reason and concepts, that there cannot be ontic vagueness. And so, if their arguments work, it is a priori that there is no ontic vagueness. Thus the philosopher who finds herself convinced by such an argument would naturally claim that it’s a priori that there is no ontic vagueness. But this is not in any sense an argument against ontic vagueness. It’s simply a statement of the epistemological position of the issue. So you might well find yourself convinced by one or more of the purportedly a priori arguments against ontic vagueness rehearsed in this paper. But an attempt to convince you by saying ‘it’s a priori that there is no ontic vagueness’ certainly ought not to be among them.

Moreover, it seems that, without the aid of substantial background argument, we ought not say that it’s a priori that there’s no ontic vagueness. If we take ontic vagueness to be just a sub-species of ontic indeterminacy, then there doesn’t appear to be anything more problematic about ontic vagueness, per se, than ontic indeterminacy in general – it’s just a special type of ontic indeterminacy that is Sorites-susceptible, gives rise to borderline cases, etc. Thus to rule out ontic vagueness a priori we would need to rule out general ontic indeterminacy a priori (to avoid an ad hoc distinction). Yet making such a blanket ban on a priori grounds looks dubious since much of our most recent theories of physics seem to indicate that there might well be at least ontic indeterminacy of some sort. Of course, those theories might well be false, but ruling them out a priori looks like gratuitous armchair physics.

2. Vague Existence

Of course, many philosophers do indeed think that the existence of ontic vagueness is a priori impossible. I contend that, for at least some of them, however,
the intuitions in question might well hinge on a misunderstanding of what admittance of vague objects into our ontology commits us to. In claiming that ontic vagueness is a priori impossible, it may be that philosophers are conflating existing vagueness and vague existence.

Here is a claim that might well be a priori true: either something exists, or it doesn’t. Existence – if it is a property at all – cannot be a vague one. If it is vague whether an object has the property of existence, then the object might not have the property, i.e., that object might not in fact exist. But if it is possible that the object does not have the property of existence, then there is a possible non-existent object. But since non-existent objects are (by the lights of most philosophers, at least) absurd, existence cannot be vague.

Yet the proponent of ontic vagueness can easily agree with the previous claims. For example, characterizations of ontic vagueness as an object vaguely instantiating a property, an indeterminacy as to which state of affairs obtains, or a vagueness in objective relations between object – all rely on an underlying existence which is not itself vague. There must first be something which definitely exists before we can wonder whether that something is vague.86

It might be argued, however, that though the commitment is not universal, at least some prominent theories of ontic vagueness entail vagueness in existence. What are we to make of them? Peter van Inwagen, for example, argues that no collection of simples compose a composite object unless they meet the criterion of participating in a life.87 But participating in a life is vague; things do not pass instantaneously from life to death, so it seems reasonable to suppose that there will be a brief instant where it is vague whether or not a certain collection of simples compose an object. Suppose

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86 I.e., whether it has vague properties, relations, etc.
that Tibbles the cat, at the end of an illustrious philosophical career, is about to shuffle off this mortal coil. There is a moment, $t(1)$, when he is definitely alive, and thus when the simples arranged Tibbles-wise compose an object. Then there is a moment, $t(2)$, when it is indeterminate whether he is alive or dead. At this moment it is thus indeterminate whether there is a composite object Tibbles, or simply the collection of simples arranged Tibbles-wise. Finally, at $t(3)$, Tibbles is definitely dead and the simples arranged Tibbles-wise definitely do not compose an object. At $t(2)$, doesn’t it seem like we have a case of vague existence?

It’s at least arguable that we don’t. Vague existence would be the following claim:

1. There is an object, and it is vague whether or not it exists.

Whereas the proponent of a Van Inwagen-esque theory of metaphysics can contend that they are only committed to the following:

2. It is vague whether or not there is an object.

Admittedly, (2) does skirt uncomfortably close to vague existence, but perhaps not quite close enough to generate the strong intuitions of its falsity that many have to (1), particularly if you accept the proffered treatment of LEM, which would allow the ontic theorist to endorse the claim that (determinately) either the x exists or it doesn’t. Regardless of these worries, however, one can certainly believe in vague objects without characterizing them as Van Inwagen does, and thus I argue that, for ontic vagueness in general, the claim that it is a priori untenable doesn’t succeed.

3. The Limits of Indeterminacy

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88 Though Van Inwagen bites a bullet here and says that this is a case of vague existence. For further discussion see Hawley (2002)

89 The distinction here is between propositions involving x where x is predicated upon – (1) – and propositions involving x where x is not predicated upon – (2).
Mark Heller (1996) and Terrence Horgan (1994, 1995, in draft) have both argued that ontic vagueness is untenable because, in some crucial sense, there is a limit to just how indeterminate the world can be. Ontic vagueness would require the absence of any sharp cut-off points, first-order or otherwise in a metaphysical version of the Sorites series. But this, it seems, is something the ontic theorist simply can’t account for. No matter how many operators she has at her disposal, and no matter how many times she iterates them, a sharp cut-off will emerge somewhere.

For a ‘metaphysical’ Sorites over property F, the ontic theorist says that we cannot have a sharp cut-off between the Fs and the not-Fs. So she posits ontic indeterminacy – there will be a few cases in the series which are indeterminately F. But the complaint against sharp cut-offs will reiterate. Just as we cannot have them between the Fs and the not-Fs, we also cannot have them between the determinately Fs and the indeterminately Fs. And simply iterating ‘indeterminately’ will not help – it will only push the problem back a bit. Sooner or later, you will run up against a sharp cut-off between, say, the $\bigvee \bigvee \bigvee \bigvee F$s and the $\bigvee \bigvee \bigvee F$s. There is, in short, a limit to the indeterminacy of the world – a limit which Heller and Horgan claim is not shared by semantic vagueness, which can appeal to the inherent context-sensitivity and judgment-dependence – and this limit makes ontic vagueness impossible.

Suppose we agree with Horgan and Heller that the ontic theorist, in order to have a coherent picture of vagueness, would need the full-fledged indeterminacy in question. Can the ontic theorist really not accommodate this? It seems that, in order to avoid the charge of reintroducing sharp cut-offs at a higher-level, the ontic theorist simply needs to employ the notion that her underlying subject matter is, in fact, vague. Truth, as well as the logical operators of determinacy and indeterminacy are...
precise notions.\textsuperscript{90} If, however, the world itself is vague then there will be no precise fact of the matter, for a given metaphysical Sorites series, what the correct assignment of values to items in that series is. Because the subject of the series is itself vague, we should not expect a perfect correlation between the items in the series and our semantic characterization. So, for some arbitrary item in the series, there may simply be no fact of the matter as to whether it is better described as $\neg \neg F$ or $\neg F$ – the world itself could leave such a case underdetermined. But if this is the case – if there is no uniquely correct assignment of values to the items in the series – then the ontic theorist can easily claim to avoid sharp cut-offs. True, there may always be a sharp cut-off in a given modeling of a metaphysical Sorites series, where specific values are assigned to each member of the series. But if there is indeterminacy in whether the assignment of values is correct, then there is indeterminacy in whether the sharp cut-off, as it appears in the model, is placed correctly – because the logical operators simply don’t match up to the vague world, there will be no fact of the matter about where, in a model of the series, the cut-off ought to be placed. And that certainly looks to be enough avoidance of sharp cut-offs to dispel Heller and Horgan’s worries.

4. Argument from Continuousness

In his (2003) paper, Brian Weatherson gives an argument against ontic vagueness (or at least the existence of vague objects) based on material continuousness. His argument runs, roughly, as follows. Suppose that we take Mt. Everest to be a vague object, and that there are two possible precisifications of Everest, Everest(+) and Everest(-). The only difference between Everest(+) and Everest(-) is a single electron, Sparky – Everest(+) has Sparky as a part and Everest(-)

\textsuperscript{90} This is, of course, controversial; but as an assumption in the response it is not essential. All that is needed is that if both they and the world are vague, their vagueness does not exactly match the vagueness of the world – a plausible assumption.
does not. The vague object, Everest, is meant to be indeterminate between the two. But assuming excluded middle, we know that Sparky is either a part of Everest or not a part of Everest. However, if Sparky is a part of Everest, then Everest is materially continuous (at all times) with Everest(+); likewise, if Sparky is not a part of Everest then Everest is materially continuous with Everest(-). Assuming that objects which are materially continuous at all times are identical, we can thus conclude that Everest is identical to Everest(+) or Everest(-). But since both Everest(+) and Everest(-) are precise objects, this leads us to the conclusion that Everest is not vague after all.

The ontic theorist has several possible avenues of response here. The first and most important is that, contrary to Weatherson’s claims, this argument doesn’t seem to be an argument against ontic vagueness per se, but rather a specific type of ontic vagueness – the theory of ‘vague objects’ which have indeterminate material extension. Extensionally vague objects, however, are by no means the only type of ontic vagueness you could be committed to, and there seem to be various other forms of ontic vagueness that wouldn’t be troubled in the slightest by Weatherson’s complaints. For example, if you are a trope theorist who thinks that the (objective) relation of similarity between tropes can be vague, that seems to be a sort of ontic vagueness that wouldn’t face a threat of collapse into precision based on material continuance (since the tropes are all perfectly distinct, but the relations they bear to one another are vague).

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91 Weatherson then gives a much more detailed version of the argument for those who want to reject this principle, which he calls the strong composition principle, in favor of the so-called weak composition principle. I will not go into those details here, however, since my response to both cases is the same. See Weatherson (2003) for the full version.

92 I.e., for tropes x, y, and z, you might think that it’s indeterminate whether y is more similar to x than z; the relevant Sorites would be of the form (if a is more similar to x than c, then b is more similar to x than c. . .).
But suppose you’re inclined to accept objects with a vague material extension into your ontology – is Weatherson’s argument compelling reason to forgo them? For multiple reasons, I think it is not. First of all, Weatherson admits that his argument relies on classical logic. As outlined in the logic section of this paper, however, it seems perfectly acceptable for the ontic theorist to give up classical logic – it wouldn’t make her an anomaly as far as vagueness theorists go, and it might well seem like good methodology if she thinks that ontic vagueness is an empirical matter.

However, should the ontic theorist want to maintain classical logic (and meta-theory), Weatherson’s argument still needn’t convince her. She can simply maintain that, yes, Sparky is either a part of Everest or not a part of Everest and, moreover, that it’s either true or false that Sparky is a part of Everest and either true of false that Sparky is not a part of Everest, but for both cases claim that it’s simply indeterminate which. There are only two options here: either it’s true that Sparky is a part of Everest or it’s false that Sparky is a part of Everest – it’s just that the world has left it underdetermined which option obtains. And that just constitutes what it is for an object to have one of its parts indeterminately. On this interpretation, however, Everest is clearly distinct from both Everest(+) and Everest(-), because it has the property (which both precise objects lack) of having an indeterminate part. This is to echo the previous response to the Evans argument – no vague object is ever identical to any precise object.

Now, whether or not you find that particular notion of an object having a part indeterminately to be at all plausible is of course a separate issue. The point here is

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93 He claims the essential premise is excluded middle, but it seems to need bivalence as well. As rehearsed earlier, the ontic theorist could commit to excluded middle without thinking that either disjunct is determinately true, something Weatherson misses out. So, in fact, he needs classical logic and classical meta-theory. This is particularly notable because he claims dropping the assumptions his argument needs would be worrying ‘especially for the supervaluationist’ – but the supervaluationist does not have bivalence to begin with!

94 Again, see Barnett (in draft) for a particularly insightful discussion of these issues.
simply that you cannot find it implausible for the reasons suggested by Weatherson’s argument without already assuming that it’s false – and that is to beg the question against the ontic theorist.

4. Confusing Vagueness and Arbitrariness

Some opponents of ontic vagueness have argued that supposed evidence for ontic vagueness – at least in cases of composition – comes from mistaking arbitrariness for genuine vagueness. For example, when we consider Tibbles the and the cloud of particles that compose his body, we have the intuition that any sharp cut-off point for where Tibbles ends and the non-Tibbles world begins would have to be completely arbitrary. But metaphysical arbitrariness is thought to be objectionable, so the thought goes that if we want to maintain a restricted notion of composition, then there is no such cut-off and Tibbles’ boundaries are blurry, making him a vague object.

But this, according to some, is clearly a mistake. Ned Markosian, for example, argues in his (1998) that our notion of composition, though restricted, should be ‘brute’. The intuition that any sharp boundary for Tibbles would have to be arbitrary simply means that Tibbles has sharp but arbitrary boundaries, not that his boundaries are vague. The most straightforward thing to do in cases such as these is to bite the bullet and say that objects have arbitrarily drawn sharp boundaries. But it is a fundamental mistake to confuse this arbitrariness with genuine vagueness.

This is certainly one possible way out of committing to vague objects, but it’s by no means a knock-down argument against ontic vagueness. Whether your

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95 See, e.g., Hawley (2001) and Sider (2001).
96 In contrast to Sider, who uses reasons such as these to motivate the adoption of unrestricted mereology.
97 Nor does Markosian present it as such; what follows is simply a response to someone who says that positing ontic vagueness relies on a confusion between genuine vagueness and sharp but unknowable cut-offs (the latter being the position Markosian espouses).
intuitions guide you towards metaphysical vagueness in order to avoid arbitrary boundaries of composition or whether they conversely steer you towards arbitrary boundaries of composition in order to avoid metaphysical vagueness will be a matter of philosophical preference. But one thing for sure, though arbitrary cut-off points will get you out of the metaphysical puzzles of vague objects, they carry a host of difficulties all their own.

Moreover, there does seem to be a clear sense in which it’s quite counter-intuitive to suppose that nature simply draws such brute compositional facts. Molecule $a$ is a part of Tibbles. Molecule $b$, directly proximate to molecule $a$ and almost indistinguishable in relation to the rest of the molecules that compose Tibbles’ body, is not a part of Tibbles. Why? The brute facts of metaphysical composition make it so. Nothing more can be said. The case here is markedly analogous to the debate over epistemicist theories of representational vagueness. They solve some worrying puzzles and preserve classical logic, but they lead to highly counter-intuitive results. With this in mind, most philosophers working in semantic vagueness treat epistemicism as an interesting alternative, but not as a knock-down objection to those theories that evaluate vagueness as a genuine phenomenon. Thus, though the option of arbitrary composition is certainly a live possibility as a rival theory to ontic vagueness, it’s not, in and of itself, a particularly damning argument against the existence of vague objects.

It’s also very important to note here that a philosopher cannot at this point claim to have warrant for positing sharp and arbitrary cut-offs in metaphysical Sorites series unless she can show that she has an independent argument against ontic vagueness.

4. Lewis’ Argument from Imagination
David Lewis presents a simple but intuitively quite compelling argument against vague objects based on the inability to imagine them coherently. Lewis (1993) writes:

I doubt that I have any correct conception of a vague object. How, for instance, shall I think of an object that is vague in its spatial extent? The closest I can come is to superimpose three pictures. There is the multiplicity picture, in which the vague object gives way to its many precisifications. There is the ignorance picture, in which the object has some definite but secret extent. And there is the fadeaway picture, in which the presence of the object admits of degree, and the degree diminishes as a function of the distance from the region where the object is most intensely present. None of the three pictures is right. Each one in its own way replaces the alleged vagueness of the object by precision. But if I cannot think of a vague object except by juggling these mistaken pictures, I have no correct conception.

It seems to me, however, that Lewis has just described a rather nice way of thinking about vague objects (though admittedly only an approximation), and as such it doesn’t seem like an argument against their existence. Lewis worries that his representation isn’t accurate, that he’s only “juggling these mistaken pictures” in a way that’s hopelessly off the mark. Yet it seems that the problem Lewis has hit upon, rather than concerning vagueness in particular, has to do with our general inability to picture things at their most basic level. We see the world macroscopically, but we’re told that the microscopic picture is actually far, far different. Yet we have a very hard time getting to grips with what that microscopic picture is supposed to look like, because we inevitably couch it in our customary macroscopic framework. Physicists tell me that material objects are mostly empty space. So when I try to imagine Tibbles the cat
as mostly empty space, I think of a Tibbles-shaped cloud of particles, stretched out and blurry and bouncing around, with empty space between them. But that’s absurd, of course. Tibbles the cat made up mostly of empty space just looks like Tibbles the cat. And the case is analogous for Tibbles the vague cat. If Tibbles were in fact a vague object, we can imagine exactly what he would look like – a cat! The difficulty Lewis highlights has nothing in particular to do with vagueness, but rather with our general difficulty imagining things as they are at their most basic level.

There is, however, a deeper reading of the Lewis’ argument, according to which he is trying to get at a more fundamental problem with ontic vagueness. Though he’s couched his argument in terms of mental representation, Lewis’ root worry may well be that we simply have no clear understanding of what it would be for the world (rather than language) to actually be vague. And if we have no clear conception of ontic vagueness, then we have no right to postulate it.

Lewis can thus respond to ontic vagueness with his ‘blank stare’. Until we have given him a decent conceptual picture of what ontic vagueness is meant to be, it’s not really something that can be meaningfully engaged with.

I would contend, however, that the picture is not quite so bleak as Lewis would paint it. All we need to formulate a workable theory of ontic vagueness is ‘conceptual room’ – that is, we needn’t show that ontic vagueness is possible, only that it’s in some sense conceivable. And there’s been substantial work of late to do precisely that. Ken Akiba (2004), Gideon Rosen and Nick Smith (2004), and J.R.G. Williams (forthcoming) have written substantial (though very different) accounts of what a workable theory of ontic vagueness might look like. And though you might disagree with some or all of them, it certainly doesn’t seem that their work is
fundamentally inconceivable. Again, all we need show is that there is ‘conceptual room’.

How vivid a ‘picture’ we’re meant to have in order for a theory to be workable is a very tricky methodological point indeed. Many metaphysical theories, including those endorsed by Lewis himself (four-dimensionalism is a prime example) seem perfectly workable despite the fact that, for my part at least, I’m not sure how clear of a mental image I have of them (e.g., I’m not sure how clear a ‘mental picture’ I have of myself as a four-dimensional space-time worm, but I still find four-dimensionalism a perfectly plausible option in temporal metaphysics). Conceptual room, it seems, is something weaker, and I would contend that it’s certainly within the ontic theorist’s grasp.

5. The Lack of a Theory Objection

Closely related to the second reading of Lewis’ objection is the argument, most famously offered by Mark Sainsbury (1994), that we cannot give any plausible theory of ontic vagueness, and therefore ought to reject it. Again, while I think Sainsbury is perfectly correct to demand that a worked-out theory be given before we can possibly talk of endorsing ontic vagueness, it seems a mistake to argue that no such theory is (or even can be) on offer. Recent work in the field seems to show the contrary. And though for the semantic indecision and uniformity arguments the burden of proof lay with the ontic theorist, here it seems that it falls on the shoulders of her opponent. If the semantic theorist wants to object to ontic vagueness based on a lack of any workable theory of it, then she will have to show why those theories which are available are inadequate.

But suppose that someone who – due to metaphysical commitments elsewhere – had reason to suspect that the world might be vague systematically examined the
available theories of ontic vagueness and found each untenable. Should that lead her
to conclude, despite her reasons in its favor, that there is no ontic vagueness? It
seems, at least to me, that it should not. It should lead her, rather, to agnosticism
about ontic vagueness. If she has motivating reasons to believe in ontic vagueness but
finds no available theory that gives a satisfactory account of the phenomenon, then the
most straightforward thing to do would be the remain undecided as to whether or not
ontic vagueness would be an acceptable theoretical cost to incur. It’s a certainly a big
jump from the conclusion that no good theory has been offered to the conclusion that
no good theory can be offered, and one that, without further support, doesn’t seem
warranted. So agnosticism towards, rather than flat out rejection of, ontic vagueness
seems the most appropriate attitude in such a situation. And if that’s the case than
even on its most pessimistic reading (i.e., none of the theories on ontic vagueness
currently on offer are any good) the above considerations don’t serve as an argument
against the possibility of ontic vagueness. In order to be a true objection, the
argument in question would need the further motivation that a workable theory of
ontic vagueness simply cannot be provided. And such a motivation, it seems, have
not been given.

6. The Incoherency Objection

An objection that follows on the heels of the last two, and perhaps is the root
intuition behind them, is that ontic vagueness is ultimately incoherent.98 There is just
no sense to be made of the idea that, for some state of affairs, the world could
somehow leave things undecided as to whether or not that state of affairs obtains.
Such an idea, this objection goes, is simply unintelligible.

98 That is, perhaps, why many will insist on the ‘blank stare’ and persist in the thought that no workable
theory of ontic vagueness can be given.
While this may well be a compelling philosophical intuition for many (and, I suspect, is the main reason why most philosophers find ontic vagueness so unappealing), it's not much in the way of an argument. The incoherency objector has the brute intuition that the notion of ontic vagueness is, at its core, nonsense. Little more can be said here. Nor is there much that the defender of ontic vagueness can engage with. Her opponent has the intuition that ontic vagueness is fundamentally impossible, while she does not share it. At this point, it comes down to a basic clash of root intuitions. So while the intuition of incoherency, for the philosopher who feels it strongly, might well be reason not to adopt a theory of ontic vagueness, it is no reason for the philosopher who does not share it to reject her belief that ontic vagueness might well be possible. Again, such intuitions might well be prime motivators, but they aren’t really arguments.

Brian Weatherson, however, has argued that something along the lines of the incoherency intuition plays a role in what kind of arguments against ontic vagueness are acceptable.\(^{99}\) Weatherson claims that when it comes to arguments against ontic vagueness, ‘many...may seem question-begging to the determined defender of vague objects’, and yet he maintains that they are perfectly good arguments. He draws an analogy here to arguments against dialetheism – the best of which, he claims, rely on non-contradiction. In that sense, they beg the question against the dialetheist, but – by their own lights – they are perfectly warranted in doing so. Mightn’t this be the case for ontic vagueness as well?

Surely, however, in order to license a question-begging argument, our intuitions about the case in question must be utterly forceful. Moreover, they must be central to our patterns of reason and thought (e.g., we might be licensed in appealing

\(^{99}\) See Weatherson (2003)
to non-contradiction when arguing against the dialetheist because we just can’t argue without it). I find it very dubious to suppose that the average philosopher’s intuition that the world cannot be vague is one of such a magnitude. Do we really believe to the same degree that ontic vagueness cannot obtain as we do that non-contradiction holds? But if we do not, if intuitions against ontic vagueness are of the more germane, defeasible sort that most of our metaphysical intuitions are, then a question-begging argument is not justified. And thus we are left with the basic clash of intuitions outlined above.

It may be helpful for the ontic theorist, however, to attempt to diagnose why so many of her peers share the intuition that her view is, in the end, nonsense. Otherwise she might will run the risk or incurring a ‘good company’-type charge – perhaps one person’s intuition is no reason for her to abandon her view, but if so many excellent philosophers share it, oughtn’t this give her pause?\textsuperscript{100}

I seriously doubt many people have pre-theoretical intuitions about vagueness, and even if we did, we as philosophers are all entirely too corrupted to reason about what ours might have been before we started doing philosophy. Perhaps, then, one key reason why so many might (post-theoretically, as it were) share the intuition that vagueness is a purely semantic phenomenon is that the vagueness debate is couched almost entirely in a semantic framework, and from our very first encounters with it in a philosophical context we learn about it as a semantic phenomenon – not to mention the fact that the ‘paradigm’ examples of vagueness usually used in discussions appear to be unequivocally semantic, and it’s these ‘paradigm’ cases that we take as essentially representative of the phenomenon. Becoming so accustomed, then, to thinking of vagueness as a semantic entity, we might naturally balk at the idea that it

\textsuperscript{100} It is, of course, a very tricky point, methodologically, as to how much someone else’s intuitions ought to count as reasons for you.
could be present in the non-representational world. It seems a category mistake. But mightn’t that just be an anthropological feature of how we in fact learn about vagueness, rather than a genuine feature of the phenomenon in question?

Another possible reason for the ‘incoherence’ intuition is the idea that ontic vagueness violates ‘common sense’. Again, I’m entirely suspect of the notion that we have pre-theoretic intuitions about vagueness, but we might still hold that it’s in some way common sense to think, in a broadly Russellian sense, that the world just is what it is, and that’s the end of the story. Talk of the world have genuine indeterminacies is then seen in some way as abandoning such a common sense notion. Notably, however, just the Russellian intuition that ‘the world is how it is’ doesn’t in any way rule out ontic vagueness. The ontic theorist can happily agree – of course the world ‘is how it is’, it’s just that how it is happens to be vague. The claim needs strengthening in order to make it untenable for the ontic theorist – we would need the intuition that the world is how it is and that how it is does not include vagueness; or, alternatively, that the world is some particular way determinately. This of course just amounts to a denial of ontic vagueness, so the claim boils down to it being somehow ‘common sense’ that there is no ontic vagueness. Why think this is the case?

Yet suppose, for the sake of argument, however, that we grant this position. Nevertheless, the methodological role of common sense in philosophy is notoriously tricky, just as it is tricky to figure out just what, exactly, the common sense view is meant to be.101 Moreover, metaphysicians are forever abandoning ‘common sense’ if they have enough theoretical motivation to do so. Why couldn’t ontic vagueness, if it does indeed violate common sense, simply be one of those cases in which we claim common sense is trumped? Alternatively, if we think that the existence of ontic

101 See Rosen and Dorr (2004) for an excellent discussion of such issues.
vagueness is an empirical matter, then the common sense intuition has little merit. Arguably, many findings of recent physics do indeed violate our common sense notions of the world, but that doesn’t lead us to reject them. It just forces us to accept that our best theory of the world turns out not be particularly commonsensical.

Another motivation which might be driving the incoherency intuition is something the along the lines of what Lewis presents in his previously-discussed ‘picture argument’. Leaving aside deeper worries of an inability to formulate a tenable theory of ontic vagueness, Lewis appears to expound, in his three contrasting pictures, the notion shared by many that he simply can’t imagine what it would be like for the world itself to be vague. But again, this worry seems to have far less to do with the particular phenomenon of vagueness than with our general inability to visualize at a macro level what things are like at their micro level. Confusions of this kind – though they may be quite compelling – would thus be no more valid a support for the intuition that ontic vagueness is incoherent than the intuition that modern physics is incoherent.

There is obviously a great deal more that can be said here, but the above has simply been a brief attempt at a few possible diagnoses of why so many philosophers might (mistakenly) hold the intuition that ontic vagueness is, as Terrence Horgan puts it, ‘at bottom incoherent.’

IV. Conclusion

In the evaluations of the proceeding sections I hope to have shown, for the main arguments against the existence of ontic vagueness, that many are really quite ineffective and none are conclusive. The ontic theorist appears to have available responses to each which can sidestep the difficulties raised for her position. In making such a claim, I am not, of course, taking it as an endorsement for ontic
vagueness. As mentioned previously, whether or not you are motivated to posit ontic
vagueness will depend largely, if not entirely, on metaphysical commitments
elsewhere. The point here is that, for those who want ontic vagueness in their
ontology, there doesn’t seem to be any convincing argument on the table for why they
can’t have it. And the lack of more conclusive arguments might indeed lead you to
wonder: after all, what’s so bad about ontic vagueness?
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Chapter 3

Indeterminacy, Identity and Counterparts: Evans Reconsidered

Abstract: In this chapter I argue that Gareth Evans’ famous proof of the impossibility of de re indeterminate identity fails on a very plausible interpretation of the determinacy operators. I attempt to motivate a counterpart-theoretic interpretation of the determinacy operators and then show that, understood counterpart-theoretically, Evans’ argument is straightforwardly invalid.

Gareth Evans’ famous (1978) argument against the possibility of ontic vagueness is one of those philosophical problems that just won’t die. Weatherson (2003) claims it’s a lynchpin in the case against de re vagueness, whereas Noonan (2004) remarks that everyone knows that all the argument shows is that every vague object is determinately distinct from every precise one. Obviously, it’s the sort of thing that philosophers tend not to agree about. The Evans argument is thus still very much a ‘live’ issue in the ontic vagueness debate, one which anyone who wants to go in for ontic vagueness must have something to say about.

With that in mind, I’d like to propose a solution to the Evans argument for the would-be defender of ontic vagueness. I certainly don’t intend this to be read as a knock-down objection to Evans’ argument – far from it. But I put this solution forward because it’s a simple and straightforward solution to Evans’ puzzle that, as far as I know, has been largely unexplored. My contention will be that, should you be tempted by an ontology which commits you to vague identities, there is a reading of that determinacy operators available to you according to which the Evans argument fails for quite basic reasons.

My proposal, which I’ll outline below, is that the most natural reading of the determinacy operators is on the model provided for us by David Lewis’ (1983)
counterpart theory. Yet on a counterpart-theoretic interpretation of determinacy, the Evans argument fails, for quite straightforward reasons.

I. The Evans Argument

Gareth Evans, in his seminal paper “Can There Be Vague Objects?” offers a purported proof against the existence of de re vagueness. The proof hinges on the idea that whenever there are vague objects, there will be vague identity. But vague identity (as in genuine vague identity between entities, rather than merely vague identity statements), the argument attempts to show, is incoherent. Thus, Evans concludes, there cannot be vague objects.

The proof, as Evans presents it, runs as follows:

(6) \( \forall (a=b) \)

(7) \( \lambda [\neg (x=a)]b \)

(8) \( \neg \forall (a=a) \)

(9) \( \neg \lambda [\neg (x=a)]a \)

(10) \( \neg (a=b) \) [from (2) and (4), by Leibniz’s Law]

This is not a straightforward contradiction, but Evans then reasons that “if ‘Indefinitely’ and its dual ‘Definitely’ (‘\( \Delta \)’) generate a modal logic as strong as S5, then (1)-(4) and presumably Leibniz’s Law can each be strengthened with a ‘Definitely’ prefix, enabling us to derive

(5’) \( \Delta \neg (a=b) \)

which is straightforwardly inconsistent with (1).”

Thus, if Evans’ reasoning is correct, we have a logical proof that there cannot be vague objects.

102 Many philosophers have disputed this claim (see, for example, Williamson (1998)), but I will grant Evans his assumption for the sake of argument.

103 See Lewis (1988)
be vague objects.

II. The Logic Of Determinacy

It seems clear, though, that to assess whether or not Evans’ argument is valid, we must first provide an adequate analysis of ‘determinately’ and its converse ‘indeterminately’. Evans’ proof hinges on the use of these operators, and thus any judgment of its validity will depend on how we interpret them. In the subsequent sections I will attempt to motivate an interpretation of the determinately/indeterminately operators – one which I’ll argue is very natural – on which the Evans argument does not go through.

1. Precisifications

It’s a common assumption in the literature that the determinacy operators have a semantics that mimics that of the modal operators. For example, many notable figures in debates on vagueness have argued that the determinacy operators should be read as a type of pseudo-modal operator that ranges over precisifications rather than (as the modal operators do) worlds.

According to this model, it’s quite easy to provide for the analogy between modal semantics and determinacy semantics. ‘Necessary’, familiarly, on a possible worlds semantics simply means true in all (accessible) possible worlds (□P iff: P obtains at every accessible world). Its dual, ‘possibly’, just means not necessarily not; i.e., true in at least one possible world (◊P iff: P obtains at some accessible world).

A similar understanding of the determinacy operators is then readily available if we read them as ranging over precisifications. Instead of (accessible) possible

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104 Which Evans seems to share, given that he thinks that the operators ‘generate a modal logical at least as strong as S5.’
105 See Fine (1975) for where it all started and Williamson (1998) for a good introduction to (and discussion of) the idea
worlds, the operators will be concerned with admissible precisifications (inadmissible 
precisifications being analogous to impossible worlds). ‘Determinate’ will, on this 
model, simply mean true on every admissible precisification (ΔP iff: P obtains in 
ev ery admissible precisification). The key disanalogy with the modal operators, 
however, will be that, while something can obviously be both necessary and possible, 
something cannot likewise be both determinate and indeterminate.106 So it doesn’t 
suffice to characterize ‘indeterminate’ as true in at least one admissible precisification 
(since this would leave open the possibility of truth in every precisification, which 
would amount to determinacy). Instead, ‘indeterminate’ needs to be characterized as 
true in at least one but not all admissible precisifications (∀P iff: P obtains at some 
admissible precisification and does not obtain at some other admissible 
precisification).

2. Counterpart theory

But that’s all review, and none of it is going to help us out of the Evans 
argument. Here’s the original bit: I propose that, given the above interpretation of the 
determinacy operators (i.e., as pseudo-modal operators ranging over precisifications), 
we should read them counterpart-theoretically. And if we construe the determinacy 
operators according to the counterpart theory model, the Evans argument will fail.

A. Motivations

First things first, why on earth would you be tempted to go counterpart-
theoretic at this stage (and the answer better not be ‘because it solves the Evans 
argument!’)? In what follows I’ll lay out the motivations, which I actually think are

106 The closest modal analogy for ‘indeterminate’ thus seems to be ‘contingent’ – something cannot be 
both contingent and necessary, contingency being a middle-ground, as it were, between necessarily and 
necessarily not. See Parsons and Woodruff (1995).
very strong, whether or not you’re remotely tempted by counterpart theory for the modal case.

Counterpart theory lends itself particularly well to the semantic framework in question because of its unique treatment of transworld identity. According to counterpart theory, individuals are world-bound; an object, strictly speaking, does not exist at any worlds other than the actual world, but at certain other possible worlds it does have *counterparts*. These counterparts are world-bound objects in other possible worlds which are similar in relevant respects to the object in question. Modal claims are true of an object in the actual world in virtue of what is true of their counterparts. So it’s true that I might have had red hair (rather than brown) if and only if I have a counterpart who has red hair. But my red-haired counterpart and I are not, strictly speaking, identical to one another.

Thus, in counterpart theoretic terms we don’t have identity across precisifications (so you, strictly speaking, don’t exist at any precisification of your current situation, but you do have a counterpart that does). For any x, x is F at a given precisification if and only if x’s counterpart at that precisification is F. To extend to the case of determinacy operators, $\Delta Fx$ iff: all of x’s counterparts are F; $\forall Fx$ iff: some of x’s counterpart’s are F and some aren’t.

To use a paradigm case of vagueness as an example, if it is indeterminate that Simon is bald, then Simon will have some bald counterparts and some non-bald counterparts (with ‘counterparts’ understood as ways Simon might be presented under various precisifications; but each ‘counterpart’, as in traditional counterpart theory, is distinct from Simon himself)\(^{107}\). Conversely, if it is determinate that Garfunkel is

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\(^{107}\) What is in fact being precisified in these cases will depend on what you think the source of vagueness is: if you think vagueness is semantic, then our term ‘bald’ will be precisified, if you think it is ontic, then something like the extension of the property of baldness will be precisified, if you think vagueness is a mixture of both, then precisifications will likewise be a mixture of both. Counterpart
bald, then – for all admissible precisifications – all Garfunkel’s counterparts will be bald.

Intuitively, this denial of transworld (or, in this case, trans-precisification) identity fits neatly with the semantics for determinacy in question. If we take vagueness as a real (and perhaps even necessary/inevitable) feature of the world, then it’s natural to suppose that, for any vague term or object, the precisified versions of it will be similar in relevant respects, but they will not quite be that (or object). ‘Bald’ taken to mean ‘less than 537 hairs on the scalp’ rather than our loose, common-usage term has certainly lost something in translation.\textsuperscript{108} Better than adopting strict identity then – identity across precisifications, which would entail that our loose, vague word and the precisified word are identical – seems to be claiming that the extension of ‘less than 537 hairs on the scalp’ is not identical to the extension of our word ‘bald’, but rather is a precisified counterpart of ‘bald’. In a certain precisification, that is, ‘less than 537 hairs on the scalp’ has the relevant similarity and does the semantic work that ‘bald’ does in the actual world, and so claims of determinacy such as, e.g. ‘x is determinately bald’, are made true, in part, by the truth (simpliciter) of ‘x has less than 537 hairs on the scalp’\textsuperscript{109}

The general picture here is similar to notions of verisimilitude in the sciences – the idea that our theories make an approximation at truth, a best representation of the situation, but that they don’t quite paint the picture as things really are.\textsuperscript{110}
Analogously, precisifications give us a helpful model for distinguishing determinacy
and indeterminacy, but they are not the way things really are – in reality, things
(words, objects, properties, etc. – depends on your theory of vagueness) are vague.
With this in mind, then, it’s best not to speak of strict identity across precisifications.
Rather, we have actual (vague) things and then we have their precisified counterparts.
We can thus latch on to truth claims about actual things based on the way things are in
precisifications, while at the same time maintaining that nothing here in the vague
world is identical with anything in the precisifications.

As a further point in its favour, counterpart theory allows that the truth of
modal claims can be context sensitive. Sentences uttered in different contexts will
invoke different counterpart relations, and thus who your counterparts are will depend
in part on the context of utterance. This feature is particularly appealing when its
determinacy analogue is applied to vagueness, an area which often seems to be highly
context-sensitive. ‘x is determinately F’ can be true in some contexts – because in
those contexts, all the precisified versions of F invoked as counterparts apply to x –
but false in others – because a different context will invoke counterparts at different
precisifications, some of which might not apply truly to x. So, for example, for a man
who is 6’2, ‘He is determinately tall’ is true when uttered at the APA, but false when
uttered at an NBA convention. Counterpart theory provides a useful framework for
showing exactly why this is the case.\footnote{Think of the analogy with the statue and the clay puzzle. In the context of referring to the (single)
object qua statue, we say truly that it could not survive being smashed, but when we switch contexts to
refer to the object qua clay, we say truly that it could. Thus the same object can have different modal
properties (by having different counterparts) depending on what context we refer to it in.}

It’s important to point out here, however, exactly how counterpart theory
realizes this context-dependence of modal properties, and thus to demonstrate how the
analogous treatment of determinacy might work. There’s a common temptation to
think that a counterpart-theoretic analysis makes it the case that which modal properties a thing has is in some sense mind-dependent (after all, modal properties vary from context to context and we’re the ones picking out the contexts). Anyone who thought this was the type of solution to be offered for indeterminacy of identity de re would be forgiven for not giving it the time of day; but in fact I think it’s a misreading of counterpart theory. Yes, counterpart theory does say that when we refer to, e.g., the single clay/statue entity as the clay, it has the property of being squishable, yet when we refer to the same entity qua statue it does not have the property of being squishable. So prima facie it does seem that by the very act of referring to a single object in different ways (and thus changing the context) we’re changing what modal properties that object has.

In fact, counterpart theory claims only that a change in context can change how we single out properties. For the case of the statue/clay, when we refer to it qua clay we say truly that it could be squashed, whereas when we refer to it qua statue we say truly that it could not. But all that has happened, when we switch to the statue context, is that we have made it the case that the very same property from the clay context no longer deserves the name ‘squashability’.¹¹²

Likewise for determinacy. If it’s determinate that you’re tall at the APA but determinate that you’re not tall at the NBA, it’s not that you’ve changed any of your properties. It’s just that the different contexts single out different precisifications for the word ‘tall’; ‘tall’ refers to different properties in different contexts.

**B. Counterpart Theory and Evans’ Argument**

¹¹² In the clay context, the property would’ve been the set of all individuals with squashed counterparts; the property is still the very same set (it has the same members), but by changing the context we’ve made it the case that not all it’s members have squashed counterparts (because referring to the statue/clay qua statue invokes a counterpart relation according to which the object has no squashed counterparts); so the very same property (since counterpart theory identifies properties as sets of individuals) no longer deserves to be called the property ‘squashability’.
And now, at long last, we come to it: the proposed solution to Evans’ famous argument. Assuming that we’re reading the determinacy operators counterpart theoretically, Evans’ argument straightforwardly fails because the property abstraction step is invalid in counterpart theory.

Familiarly, in counterpart theory it can be the case that:

(a=b)
but:
◊(a≠b)
yet:
¬◊(a≠a) (that is, □(a=a)).

Thus, from the fact that ◊(a≠b) but ¬◊(a≠a), you cannot infer that a and b have different properties. In the actual world, they are identical (@ a=b), and thus they share all their properties (via the indiscernibility of identicals). Yet the different names can invoke different counterpart relations, so in some worlds they are not identical. But we can’t conclude from this that a and b are actually distinct; they are actually identical, but could have been distinct. a and b can in fact have different properties – different modal properties (i.e., a has some counterpart which is qualitatively unlike any of b’s counterparts) – in the actual world, but never in the same context. When we refer to a qua identical to b, then necessarily all its counterparts are counterparts of b. When we refer to the one thing a/b as ‘a’, the counterpart relation invoked is such that it has different counterparts from the counterparts it would have would have were we to refer to it as ‘b’. But from this we cannot, of course, conclude that a and b are distinct; they are one and the same thing.

113 Again, think of the counterpart-theoretic treatment of the statue and the clay. They are identical, the very same thing. But they could’ve been different – the statue could’ve been made out of bronze. Referring to the (single) object qua statue invokes a different counterpart relation than referring to it qua clay, so the same object can have different modal properties, but – crucially – never in the same context.
simply with different counterpart relations singled out depending on which terms of reference we choose.

If we are to understand the determinacy operators in a pseudo-modal semantics, then we can straightforwardly apply a similar treatment in the indeterminacy of identity case.

We have:
$$\nabla (a=b)$$
But, of course,
$$\neg\nabla a = a.$$ 
From there, Evans infers that a has a property (being determinately identical to a), which b lacks. Yet, if we interpret the indeterminacy operator using counterpart theory, this inference doesn’t go through. Saying that it’s indeterminate that a=b is (structurally) equivalent to saying that it’s possible that a\(\neq\)b – a is identical to b at some precisifications, but not at others. But, as aforementioned, in counterpart theory you cannot infer from this that a and b have different properties. You can simply reason that the names ‘a’ and ‘b’ invoke different counterpart relations.

Thus, in a counterpart-theoretic framework, the Evans argument will fail to go through. The property abstraction step will be invalid. If it is indeterminate that a=b, that means that some of a’s counterparts are counterparts of b and some are not. This is perfectly compatible with it being determinate that a=a. The determinacy of a=a simply means that all of a’s counterparts are counterparts of a, which is trivially true. Yet we cannot infer from this that a has some property that b lacks, because the counterpart relation invoked in the a=b case is different; we’ve simply changed the context. The indeterminacy of identity between a and b simply tells us that not all a’s counterparts are b’s counterparts; that is, at some precisifications a and b are distinct.
But this tells us nothing about how things are with a and b in the actual, non-precisified, world. Notably, it doesn’t license a property abstraction in the actual world, to the effect that a and b have different properties, and thus are non-identical, which is the move Evans attempts to make. Evans’ arguments is thus invalid, counterpart-theoretically.

3. An Objection

One worry about going counterpart-theoretic in a treatment of the Evans’ argument, however, is that the entrenched context-dependence of counterpart theory might point toward a strictly semantic, rather than ontic, interpretation of vagueness. Thus using counterpart theory to undermine Evans’ proof of the impossibility of de re vagueness turns out to be self-defeating, because it shows that the vagueness in question is a semantic matter after all.

However, though context sensitivity is a key feature of counterpart theory (indeed, the key feature in the analysis of Evans), I don’t think this pushes in the direction of a ‘semantic only’ view of vagueness. It looks perfectly plausible for the defender of ontic vagueness to maintain that context determines what an object’s counterparts are – and thus, what counts as an admissible precisification of that object – while still maintaining that the vagueness in question is ontic. This position would maintain that what we take as an acceptable precisification of an object will be a fact about us – our context, our language, our minds – but the bare fact that the object itself admits of precisification is a fact about the world, independent of what we think about it. So, in short, how we precisify is context dependent, but that precisification is applicable in the first place is not.

III. Conclusion
In summary, then, I’ve attempted to motivate the idea that given the popular construal of the determinacy operators as pseudo-modal operators ranging over precisifications, we ought to interpret them counterpart-theoretically. On the counterpart theory model, however, the Evans argument against vague objects is straightforwardly invalid. This obviously isn’t meant as a knock down objection to the Evans argument, as there is clearly much of the above that can be resisted. But for those who like the idea of ontic vagueness independently or are tempted by the type of ontological commitments that tend to lead to it (three-dimensionalism, restricted composition, etc) it’s something to keep in mind. Evans’ argument is formidable enough that anyone who goes in for ontic vagueness has to have something to say about it; I hope to add counterpart theory to the list of options.
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Chapter 4

Arguing for Ontic Vagueness

Abstract: In this chapter I examine some of the major arguments for ontic vagueness and evaluate their efficacy in light of the stated goal of the thesis and the definition of ontic vagueness already in play. I consider objections to each argument and try to narrow down to a dialectical strategy that would be most suited for establishing conceptual room for ontic vagueness (as I understand it).

We’ve been warned all too often that the notion of ontic vagueness lies somewhere between obvious falsity and utter incoherence (remember: ‘realism about vagueness is anti-realism about the world’!114). So the would-be defender of ontic vagueness has an uphill road ahead of her. It certainly seems that our default notion of vagueness is a representational one115 – after all, it seems obvious that language is vague, that we haven’t decided on fully precise meanings for our words; but the idea that an analogous indeterminacy could obtain in the non-representational world (the way things are in and of themselves, independently of how we describe them) is a far more provocative and substantial thesis.

So if the project at hand is to establish conceptual room for ontic vagueness, then we’ve got some significant work to do. Hopefully, if you’re on board so far, chapter 1 will have convinced you that the basic notion of ontic vagueness can be coherently explicated and chapters 2 & 3 will have shown that there aren’t any knockdown arguments against the idea. But that’s still a long way from establishing ontic vagueness as ‘an option on the table’ in metaphysical debate. After all, just because we can say what it is without talking gibberish and there isn’t a hard-and-fast case against it certainly doesn’t mean we’re free to endorse it. If a ‘semantic only’ theory

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114 Lewis (1983)
115 That is, if we can be said to have a ‘default notion’ about something so deeply imbued in theoretical trappings as the vagueness debate.
of vagueness is indeed our default position, then it seems as though it’s the position that the would-be ontic theorist will have to argue us out of. That is, it’s up to the ontic theorist to provide substantial argumentation in support of her position.

But how to go about doing this? What’s the best way for a philosopher tempted by the idea of vagueness de re to support her position? The literature has many examples of arguments in favour of ontic vagueness, and they cover an incredibly wide spectrum, methodologically. In what follows, I shall examine some of the primary examples and evaluate their efficacy with respect to the standards of establishing ontic vagueness as I understand it. This is by no means meant to be an exhaustive survey, but rather a representative sampling – highlighting the main styles of pro-ontic vagueness arguments that tend to crop up in the literature and evaluating which, if any, will be promising strategies for the project at hand (that is, establishing conceptual room for ontic vagueness).

I should also note that in evaluating these arguments I’m judging their efficacy solely on a ‘for the purposes here’ basis. That is, the arguments will be measured according to how they fare at establishing ontic vagueness given the characterization of ontic vagueness on offer and presupposing the things I’d like to presuppose (e.g., metaphysical realism, the possibility of a ‘sparse’ ontology, resistance to the idea that we can read ontology off of language, etc). Thus none of what I say, subsequently, in criticism of these arguments should be understood as my attempt to provide knock-down counter-arguments to them; I’m simply evaluating whether they get the job done according to the framework within which I’d like to explore the possibility and/or conceptual coherence of ontic vagueness.

I. Colyvan on Indispensibility
Mark Colyvan (2001) attempts to motivate ontic vagueness via an indispensability argument. All of our current best scientific theories are vague, he argues, and thus we have warrant to think that the world itself is vague. We have good reason to believe that that the world is as science tells us it is (and, indeed, as language tells us it is), and the fact that we seem to be unable to do science without vague terminology therefore gives us good reason to conclude that the subject matter of science (i.e., the mind-independent world) is vague.

But Colyvan’s argument gives us little reason for why we should conclude that the vagueness in question is at the level of reality rather than at the level of theory. For example, we could consider Quinean worries about under-determination of scientific theories – i.e., that there are always several different competing theories available which could explain the same scientific data. It seems plausible that, for any vague theory, there might also be a precise theory that describes the same data (but which we might not employ because it lacks certain theoretical virtues – e.g., simplicity). If we can’t rule out the presence of such a theory (i.e., an alternative theory which also gives a complete description, but is precise rather than vague), then it seems that we cannot make the inference, just on the basis that the theories we in fact use are vague, that the world itself is vague.

More importantly, Colyvan seems to be ignoring the crucial notion, in the construction of any scientific theory, of verisimilitude. Our theories are not intended to be exact representations of the world, but rather approximations. As we progress scientifically, we (hopefully) get closer and closer to the truth, but it’s a mistake to think that our theoretical interpretations are intended as exact characterizations rather than predictive models.
Now since we know that verisimilitude is a feature of scientific representation, and we also know that our linguistic representations tend to be vague (this is something I assume Colyvan doesn’t want to deny), why not just assume that the vagueness we encounter in scientific theory is part of the ‘approximation’ bit of science, rather than a feature of the world itself? This seems like an especially salient response when we consider that verisimilitude claims, with scientific optimism, that we continue to get closer to the truth (even if we approach it asymptotically). Now it certainly seems fair to say that, even though our current best theories are vague, they are decidedly less vague than then ones we had a century ago, and worlds apart in terms of vagueness when compared to the ones we had during, say, the scientific revolution. Might this not suggest, then, that vagueness is one of the things we weed out as our theories become more advanced?

Regardless of this claim, however, the key point with respect to verisimilitude is that an indispensability argument does not seem able to license a commitment to ontic vagueness, precisely because our theories are not meant to be taken as an exact representation of the way things are. Yes, we might well not be able to do science without vague terminology. But there’s no reason to think that isn’t just a fact about us – our representational capacities, our limitations – rather than a fact about the world.

II. Hyde on Complete Descriptions

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116. This at least seems to hold for the ‘higher’ sciences – chemistry, biology, etc. It’s far less obvious for fundamental physics. Colyvan runs his argument for the sciences is general, but if he were to restrict it to the fundamental sciences, the point about verisimilitude would still hold; even if our theories haven’t gotten less vague, it still seems reasonable to assume that vagueness is part of their representational aspect, especially when you consider how often we encounter vagueness in other representational contexts.
Dominic Hyde (1998) argues for ontic vagueness (or at least argues that ontic vagueness hasn’t been ruled out) based on the apparent inability of the ‘semantic-only’ theorist to motivate the plausibility of a complete description of the world in fully precise terms. Such a description is necessary, Hyde argues, if ontic vagueness is to be eliminated as a possibility (and perhaps the stronger claim – if such a description isn’t possible, ontic vagueness is actual). But how to go about securing such a description? Hyde argues that we can’t simply eliminate vague terms from our language and replace them with new, precise ones in order to effect the desired description. That, he claims, would cost us far too much descriptive adequacy. Nor can we simply reduce vague terms to precise terms, because vagueness, he contends, is irreducible to precision. We could, however, be assured of the requisite precise description if we could show that our vague language supervenes on some precise language, but he argues that no such supervenience relation appears forthcoming. Given this current state of affairs, Hyde contends, we can conclude that ontic vagueness is at least an option on the table.

I’m not sure, however, that these considerations are apt in establishing conceptual room for ontic vagueness. For starters, we need to know a great deal more about the ontological commitments being assumed before we can accept Hyde’s comments about expressive power (i.e., that we can’t effect the precise description of the world by simply eliminating all our essentially vague terms, as this will too greatly diminish the descriptive power of our language). This can only be true if we assume that the things which can only be described vaguely really exist. ¹¹⁷ Hyde claims that a language which cannot describe being ‘happy’ or being ‘blue’ surely is not expressively rich enough – and that is certainly true in the sense that such a

¹¹⁷ And you might think this is to grant too much to the ontic theorist to begin with, but I’ll leave that to the side for the moment.
language is not rich enough to handle our ordinary requirements for linguistic expression. But whether or not such a language can give sufficient *ontological characterization* is another question entirely. Those of us tempted by sparse ontologies are happy with the idea that many of the things we commonly discuss and refer to are not included in our ontological commitments. Those with sparse ontologies thus would have no problem with the idea that a language which seeks to give only a complete *ontological* description would be unable to describe much of what we commonly use language discuss – it simply wouldn’t need to.

As for our vague language being irreducible to a precise language – this, it seems, is perfectly compatible with there being a perfectly precise description of the world, with or without the addition of a supervenience claim. Even if we assume both that vagueness is irreducible to precision and that there is no relevant supervenience relation between our vague language and some other precise language, this entails *nothing* about whether or not a perfectly precise description of the world is possible. There could be a perfectly precise language which fully describes the ontology of the world and yet which is completely independent of the natural language we in fact speak. After all, the nihilist could be right about vagueness. It could be that we just need to give up on natural language entirely and, taking what we now know about vagueness, construct a new language (one completely distinct from natural language) in order to obtain any fully precise description of, well, anything, really. Just because vagueness is ineliminable in the language we in fact speak doesn’t mean that a precise description of the facts is unavailable.

Now whether or not the construction of such a language would be possible is another question entirely, but it is, at least, an open question. After all, for the

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118 I tend, in general, to be very suspicious of claims of ‘non-reductive’ supervenience
question at hand such a language need only be constructible *in theory*, not constructible *by us*. Thus such linguistic considerations seem insufficient to motivate conceptual room for ontic vagueness. I119

### III. Merricks on Reifying Words

Another linguistic consideration that has recently been put forward as a push toward ontic vagueness comes from Merricks (2001). Merricks argues that everyone agrees sentences of the following type can be vague:

(1) Daniel is bald

But if (1) is vague, then it straightforwardly follows that:

(2) ‘Bald’ describes Daniel

is also vague. Yet sentences like (2), Merricks argues, can only be vague metaphysically or epistemically. (2) essentially says that it’s vague whether ‘bald’ has the property of describing Daniel. So there is some object x (the word ‘bald’), such that it’s indeterminate whether it has property Φ (describing Daniel). But this cannot be a fact about language, according to Merricks (it can’t be simply due to the vagueness of ‘bald’ because ‘bald’ is mentioned, not used). It’s either that we don’t know whether x has Φ, or that it’s genuinely indeterminate whether x has Φ (a fact about x itself, rather than how we describe it). So if we want to avoid epistemicism about vagueness, the argument goes, we should accept ontic vagueness.

The intuitive response by many (myself included) to such an argument is that surely it cannot be this easy. We’re attempting to explore conceptual room for a serious, and indeed rather mysterious, ontological category (ontic vagueness), and I rather doubt doing so will be as simple as Merricks’ argument, which in essence boils

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I119 Very similar points hold against Peacocke (1981), who argues that there is ontic vagueness if and only if semantic vagueness is not *superficial*, which he takes to mean that every semantically vague language does not supervene on some precise language.
Something’s gone wrong here.

A few comments, then. For starters, Merricks seems to be a bit quick in denying that the vagueness in question could be semantic. If it’s vague whether sentences like (2) are true, why couldn’t this be due to vagueness in surrounding semantic components – e.g., vagueness in ‘describes’ and ‘Daniel’. Merricks doesn’t think the vagueness of sentences like (2) can plausibly be situated in, e.g., the semantic vagueness of ‘describes’, but I don’t think he’s justified in dismissing such a diagnosis. Intuitively, (2) is vague because of the (semantic) vagueness of ‘bald’ – that is, it’s vague whether ‘bald’ describes Daniel because we just haven’t decided exactly how to use our natural language term ‘bald’. But, as Merricks points out, in (2) we only mention, rather than use, ‘bald’. But that alone doesn’t license a move away from semantic vagueness. The most natural reading of (2), it seems, is that its vagueness is due to the vagueness of ‘describes’ – ‘bald’ is a borderline case for describing Daniel because it’s vague whether <‘bald’, Daniel> is in the extension of ‘describes’. But this vagueness arises because of the vagueness of ‘bald’. That is, (2) is a borderline case for ‘describes’ at least partly in virtue of the fact that it mentions a vague word. Such an explanation both salvages a semantic diagnosis for sentences like (2) and supports our intuition that (2) is vague because of the vagueness of ‘bald’.

Alternatively, on some interpretations of semantic vagueness it’s reasonable to question whether ‘bald’ picks out a unique word. Perhaps, as Weatherson (2003) has suggested, ‘bald’ only singles out a word with respect to a specific language; but if each language is understood as being itself precise (with vagueness arising because of indeterminacy in which language we speak), then sentences of the form (2), once they
have been properly indexed to a specific language, will not be vague. But of course Merricks rests his case on the idea that sentences like (2) are obviously vague, and thus that semantic objects like ‘bald’ not determinately have nor determinately lack properties such as describing Daniel.

Moreover, the vagueness Merricks calls ontic looks to be vagueness in the reference relation – it’s vague whether ‘bald’ has the property of referring to/describing Daniel. But as noted in chapter 2, according to the conception of ontic vagueness on offer here, vagueness in the reference relation does not count as ontic vagueness. Once you have such vagueness the distinction between semantic and ontic vagueness simply breaks down – you just have vagueness, full stop.

Along the same lines, it’s difficult to see how Merricks’ argument could provide us with the type of robust, mind-independent account of ontic vagueness that we’re looking for – the sort of thing that philosophers are concerned with when they ask whether the world in and of itself could really be vague, rather than just being vaguely described. Words, even were we to reify them as Merricks suggests, would be fundamentally representational entities. Thus whatever vagueness they had would be inherited from their representational features. If it’s vague whether ‘bald’ describes Daniel, it’s because we as language users haven’t yet determined the extension of ‘bald’ (i.e., whether Daniel is included in it). We create words to represent objects/properties/concepts, but then we’re just not that precise with how we use them. So whatever vagueness the reified entity ‘bald’ had would be in virtue of

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120 The idea is this – ‘bald’ on it’s own does not have the property indeterminately describing Daniel. ‘Bald’ on it’s own doesn’t describe anything, because only words in the context of languages describe things. So we need a word/language pair to get the argument going – these are the only types of things which, if we reify them, will have the type of properties Merricks is looking for. But, trouble is, on the construal of language that philosophers like Weatherson employ, each specific language is fully precise, so the argument doesn’t go through.
our representational capacities and tendencies as language-users. It would thus be in some sense an anti-realist form of ontic vagueness – i.e., it would be a form of vagueness that was mind-dependent.

But this, as already mentioned, is not the type of ontic vagueness I’m concerned with here in exploring the conceptual coherence of ontic vagueness. The heart of the issue, I think, is that when we ask whether or not the world itself might be vague, we want to know whether it could be vague independently of how we describe it. Merricks’ argument, however, gives us no hope of establishing such a conclusion, since his ‘ontic vagueness’ hinges on entities which are fundamentally representational, which inherit their vagueness from the way in which we describe the world. Merricks’ argument thus has little bearing on the question at hand – i.e., whether or not it’s coherent to suppose that the world could be vague independently of how we represent it.

IV. Zemach on carving out objects

While on the subject of anti-realist treatments of ontic vagueness, Eddie Zemach (1992) gives an argument for ontic vagueness that falls victim to similar objections. Zemach contends that there are all sorts of objects – objects to fit every concept you can imagine. This is because what objects exist is determined by us (we carve the world into objects). There are plenty of precise objects, Zemach claims, but nearly all the objects we refer to in everyday discourse are vague, simply because the concepts we use to carve them out are vague. Thus our ordinary conception of object should be a vague object, not a precise one.

121 Very similar considerations would apply to Schiffer’s (2003) conception of ‘pleonastic properties’, which he takes to be created by our language use but also, in some sense, ‘ontically vague’

122 Unless, that is, Merricks wants to be startlingly platonistic about his reified words.
Unsurprisingly, Zemach’s notion of ‘ontic vagueness’ doesn’t meet the criteria laid out in chapter 1 (though it’s not quite fair to apply these to his theory, since they presuppose metaphysical realism, whereas he’s clearly a metaphysical anti-realist). On the definition on offer, something is ontically vague only if (simplified) it would remain vague were all the representational content precisified. But if we include our concepts in our representational content, then we clearly lose all of Zemach’s vagueness when we precisify the representational content. Precise concepts yield precise objects.

The root worry again, though, is that what seems to be of key concern when we discuss the conceptual coherence of ontic vagueness is whether we can make sense of the idea that the world could really be vague independently of how we represent it. And Zemach’s theory, ardently anti-realist about it’s ‘vague objects’, gets us no foothold here.

V. Tye on vague objects and vague sets

Michael Tye (1990) takes a step in the direction of non-representational entities with his discussion of vague objects. He claims to find it very perplexing that philosophical orthodoxy locates all vagueness in language, since the world seems to contain a vast number of objects (the state of California, mountains, etc) which lack precise boundaries. The most straightforward interpretation of this phenomenon, Tye argues, is that these are all simply vague objects – that vagueness occurs in the world as well as in language.

Though some of Tye’s examples (California) are clear instances of our carving up the world – that is, of our representations of how things are – others (mountains, maybe) at least stand a better chance than Zemach-style objects for being the sort of
ontic vagueness contenders we’re after. So what to make of his position? First off, why not just think the vagueness in question is all representational? What prevents us from telling a simple story about vague names, kind terms, etc, that would adequately explain the phenomena Tye highlights?

Tye’s main objection here is that even if we could give such a semantic treatment, we would still have ontic vagueness. So long as we consider sets as entities, he argues, semantic vagueness will straightforwardly yield ontic vagueness, because it will give us vague sets (and a vague set, on his definition, is a vague object). Suppose that ‘bald’ is semantically vague; if this is the case then ‘bald’ will have an indeterminate extension. But if ‘bald’ has an indeterminate extension, then there will be some man, call him Daniel, such that it is indeterminate whether Daniel is included in the extension of ‘bald’. Yet this will straightforwardly yield the conclusion, according to Tye, that the set of bald men is a vague set – it’s vague because it’s indeterminate whether it has Daniel as a member.

I see little reason, however, to follow Tye to this conclusion. Why not just conclude, instead, that there are several fully precise sets (some which include Daniel, some which don’t), and it’s simply indeterminate which of these sets is the set of bald men? Analyzing the indeterminacy in this manner avoids all worries of ontic vagueness, because we can locate the indeterminacy in question squarely in our usage of the term ‘bald’ (i.e., it’s indeterminate which set ‘bald’ refers to because we haven’t quite made up our minds how we want to use the word). It also avoids having to jettison key set-theory principles like Extensionality, which Tye must explicitly reject.

Tye thus seems to have given little motivation for ontic vagueness. He relies on a highly unparsimonious ontology which he then assumes to be vague, and his
principle argument for this ontic rather than linguistic treatment of vagueness
(basically: you’re going to have ontic vagueness anyway, so why not?) looks untenable.

VI. Lowe on electrons

Quite a different sort of motivation for ontic vagueness, eschewing any discussion of our macroscopic ontological commitments and operating solely at the level of fundamental physics, has been put forward by EJ Lowe (1994). Lowe highlights an example from quantum mechanics, wherein an electron is taken into the orbit of an atom. Sometime later, an electron is emitted from the orbit of that same atom. According to Lowe, quantum theory tells us that it’s simply indeterminate whether the electron taken into the atom is identical to the electron emitted by the atom. And this is not merely indeterminacy in our description of the case – it’s not that we could settle the question if we found out more information, but rather that there is simply no more information to be found out. Thus Lowe concludes that this type of case represents an example of genuine ontic vagueness.

In setting up his case, Lowe certainly avoids worries about ontological commitment levelled at Tye. He specifies that the vocabulary of fundamental science ought to be ontologically committing and then moves on from this assumption. He does, however, encounter worries that come attached to any theory which seeks to draw robust metaphysical conclusions from scientific theories which are still in a great deal of flux. Though some philosophers think that quantum indeterminacy can readily be interpreted as vagueness\textsuperscript{123}, I am sympathetic to the idea that we as yet

\textsuperscript{123} See French and Krauss (2003)
know far too little about the phenomena (particularly as metaphysicians) to be
drawing substantial metaphysical conclusions, at least with respect to vagueness.

A more specific worry for Lowe’s argument, though, is that it only works on a
three-dimensionalist theory of temporal persistence. Four dimensionalists will simply
argue that there are multiple space-time worms in the vicinity and mere semantic
vagueness as to what the definite description ‘the original electron’ refers to. This
isn’t obviously problematic for Lowe, as whether or not you have motivation to
believe in ontic vagueness will be largely if not entirely determined by metaphysical
commitments (like three-dimensionalism) elsewhere. Lowe, however, doesn’t appear
to construe his example as an endurance-specific problem – he seems to think it’s a
new kind of puzzle that will be generally convincing. Thus it’s worth making explicit
that this is just another ‘vagueness in persistence’ example, familiar from the
literature, which can be troublesome for three-dimesionalists but which four-
dimensionalists claim not have a problem with.

These worries aside, however, the most telling objection to Lowe’s argument
is that even if we accept his interpretation of the science and think it sustainable
enough to draw metaphysical conclusions from, his example does not in any way
seem to support the existence of ontic vagueness. At most his case looks to establish
an ontic indeterminacy, but indeterminacy and vagueness are not the same thing, and
we should be careful not to confuse them. Lowe’s example seems to show none of
the paradigm features we generally associate with vagueness – e.g., Sorites-
susceptibility, borderline cases, ‘fuzzy’ boundaries. As such, it seems to have little
connection with the phenomenon of vagueness we are familiar with from natural
language (the vagueness of ‘heap’, ‘bald’, etc). But the project being engaged in here
is to explore whether *that very phenomenon* might be present non-representationally. Lowe’s example thus has little relevance.

It is worth noting, however, that it would be a very substantial thing to show that the world itself could be indeterminate between two states of affairs (in Lowe’s case, between the state of affairs of the original electron being identical to the emitted one, and the state of affairs of their being distinct). Many of the objections to ontic vagueness hinge, it seems, not on the particular features of *vagueness* being present non-representationally, but rather on the basic idea of their being *unsettledness* about the way the world is in and of itself. That is, (assuming vagueness to be a species of indeterminacy) what seems most mysterious and objectionable is the ontic indeterminacy, not the idea that the indeterminacy is of the special kind which is, e.g., soritical. So if you’ve demonstrated the conceptual coherence of ontic indeterminacy, it looks as though you’ve gone a long way toward undermining some of the key reasons why people object to ontic vagueness. Still, for my own part, I’m not sure the kinds of reasons which Lowe offers in support of ontic indeterminacy are the sort we should be appealing to. At least, not yet.

**VII. Van Inwagen on hamsters**

Peter van Inwagen (1990) gives an argument for ontic vagueness based on metaphysical commitments he assumes as part of his overarching ontological picture. According to van Inwagen’s theory, mereological simples compose a complex object if and only if they are involved in a life. That is, the only things which exist are simples and living beings – there aren’t any, e.g., tables (unless you think ‘table’ is a functional concept and you eat off your dog). Since macroscopic things (van Inwagen

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124 You might still not want ontic vagueness, e.g., for parsimony, but more on this later.
proposes a paraphrase for ‘table’ as ‘simples-arranged-tablewise’) only count as composite objects when they take part in a life, it follows that something will cease to be a composite (and become a mere collection of simples-arranged-corpsewise) the moment that a living being dies.\textsuperscript{125} But, van Inwagen argues, this gets us into murky waters very quickly, because we don’t have fully specified criteria spelling out what it is to be alive – intuitively, it can be vague whether or not something is alive.

Van Inwagen sets up his case using the illustration of a dying hamster.\textsuperscript{126} The hamster, lying on a veterinarian’s table, is about to engage in some mortal coil shuffling – and so the simples that compose him are about to cease to be part of a composite and become just some simples-arranged-dead-hamsterwise. But things aren’t quite this cut-and-dry. There are moments, when the hamster is still breathing and moving around, when he’s determinately still alive (and thus when the composite determinately still exists). Several minutes later, after all the hamster’s brain and nervous system functioning have ceased entirely, there are moments when the hamster is determinately dead (and thus where there is no composite object). But consider a series of instants from the ‘determinately alive’ ones to the ‘determinately dead’ ones. It looks utterly arbitrary, van Inwagen argues, to suppose that there’s a first instant in this series when the hamster is dead, and thus a first instant when there is not a composite object lying on the table.\textsuperscript{127} But if there is no first instant in the series at which the hamster is dead – that is, if we cannot pinpoint the exact when of the hamster’s death – then it looks as though for some instants it will be indeterminate whether the hamster is dead. If that is the case, however, then from van Inwagen’s ontological commitments it follows that at those instants where it’s indeterminate

\textsuperscript{125} Assuming, that is, that there are no living simples.

\textsuperscript{126} I’ve tightened up van Inwagen’s example a bit to make it explicitly soritical (and thus to push the indeterminacy intuition), but the basic thrust remains the same.

\textsuperscript{127} This intuition might partly hinge on some classic philosophical puzzles, dating back to Zeno, such as ‘are you alive at the moment of your death?’
whether the hamster is alive, it’s indeterminate whether there is a composite object on the vet’s table. And this, van Inwagen argues, is a paradigm example of ontic vagueness.

van Inwagen’s argument is, I think, exactly the way we should be approaching the ontic vagueness debate. He clearly delineates his ontological commitments, and then develops arguments to show that those commitments can be soritical (in a way that he does not think is explainable in terms of representational vagueness). Since whether or not you are motivated to believe in ontic vagueness will depend largely if not entirely on metaphysical commitment elsewhere (after all, you have to decide what kinds of things there are before you can decide if those things are vague), it’s important that van Inwagen explicitly settles his ontological commitment first. He then motivates (implicitly, in his version) a metaphysical version of the Sorites paradox – the classic puzzle of vagueness – ranging over the persistence conditions of certain entities he includes in his ontology. His conclusion is that the soriticality in question motivates the existence of ontic vagueness.

This conclusion does seem to be a bit quick – we need to be given reason why we can’t simply adopt a semantic diagnosis of the vagueness in question. Why not, for example, think that vagueness in our term ‘alive’ is the cause of the problem? There are answers to be had to such questions, but the burden is on the ontic theorist, it seems, to supply them.

van Inwagen’s methodology, though, seems to me to be on the right track with respect to the ontic vagueness debate – pick an ontology, lay out a case involving that ontology, see where it goes. Of course, many philosophers (myself included) will find van Inwagen’s particular ontology quite implausible – the idea that there is no

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128 Van Inwagen seems to think it follows from this that he’s committed to the claim ‘there is an x, and it’s vague whether x exists’, whereas Katherine Hawley (2002) has pointed out that he is only committed to the more mild ‘it’s vague whether there’s an x’.
longer a composite object on the table as soon as their ceases to be a living being there is one which few will be willing to go along with. But van Inwagen’s strategy with respect to the ontic vagueness debate, I think, is a move in the right direction.
Works Cited


Chapter 5

Vague Properties

Abstract: In this chapter I will attempt to show that worries of ontic vagueness can extend beyond those areas of metaphysics where we are accustomed to encountering them. Discussion of ontic vagueness has centered largely on a few specific metaphysical issues, which have come to be thought of as especially vagueness-prone. But metaphysical discussions external to these issues – especially those that involve ‘sparser’ ontologies – have generally ignored the problem of vagueness. By using properties as an illustrative case, I will argue that this ought not to be so – that the threat of ontic vagueness permeates deeply into a wide range of metaphysical issues. And if this is the case, then ontic vagueness is something that all metaphysicians – not just those working in the ‘vagueness area’ – must take into account.

I. Preliminaries

1. Metaphysicians and the ‘Vagueness Area’

In modern metaphysics, it seems, there are certain points of discussion that have been labelled ‘vagueness areas’. Persistence through time, boundaries of objects, multiple candidates of reference in ‘problem of the many’-style cases – these are the familiar places in metaphysics where vagueness is known to crop up. Steer clear of those paradigm cases though, and the assumption often seems to be that you really needn’t bother with worries of vagueness.

The subsequent arguments, however, will attempt to show that such a dismissal of (or, perhaps, inattention to) vagueness in general metaphysics simply isn’t warranted. Interaction of metaphysical theories with worries of potential ontic vagueness is quite a general phenomenon – extending far beyond the paradigm ‘vagueness area’. As such, it seems that metaphysicians – including those that don’t work on vagueness or any topics in the ‘vagueness area’ – should have something

129 See, for example, Hawley (2001), Tye (1995), and Lewis (1993).
130 This, of course, is a generalization, and like nearly all generalizations it certainly doesn’t hold true across the board. But I do think it holds in many, if not most, instances.
informative to say about their theories’ interaction with puzzles of vagueness – i.e., how they can solve these puzzles, why they can ignore them, or how they can accept ontic vagueness into their ontology without much worry. The answers can take highly varied forms, of course, but the point here is that some answer to puzzles of seeming ontic vagueness must be provided.

2. The Lure of Epistemicism

Perhaps one key reason why philosophers often ignore vagueness in metaphysical scenarios such as the ones that will subsequently be described is that, when working in the ontic case, precision\textsuperscript{131} is generally taken for granted. It’s assumed that there will be determinate facts of the matter about the way the world is, though we may well not be able to know what those precise facts are. So it’s tempting, in proposed puzzles of ontic vagueness, to simply adopt the strategy familiar from epistemicist treatments of semantic vagueness – consign the vagueness to our ignorance of the precise facts, but maintain that the facts themselves are precise nonetheless.

If one is an epistemicist about semantic vagueness, then this is a perfectly reasonable move. But it seems unmotivated, for the theorist who holds some other view of semantic vagueness, to suddenly switch to a metaphysical analogue of epistemicism simply because the subject matter for the vagueness in question has become ontic. The phenomenon in question looks quite similar to paradigm cases of vagueness – susceptibility to the Sorites series, existence of borderline cases, etc – so suddenly adopting epistemicism (i.e., committing to sharp but unknown cut-offs for

\textsuperscript{131} Or, alternatively, lack of vagueness, if you think that vagueness and precision are contraries, both pertaining only to modes of representation. (As in, e.g., Russell’s (1923)).
Sorites series) just because the case is ontic, rather than semantic, doesn’t seem warranted.\textsuperscript{132}

What would be needed to motivate such a shift would be a compelling argument for why there can’t be ontic vagueness in the same ways there can be semantic vagueness. That is, the theorist who wants to make the move to epistemicism (but only in ontic cases) must provide an argument for why the existence of ontic vagueness in her ontology would be impossible, incoherent, etc. And fist-slamming intuitions of ‘There just isn’t any ontic vagueness!’ don’t count as such an argument. It’s incumbent on the metaphysician, then, who wants to shift to a form of epistemicism to provide warrant for why she can do so. The burden of proof, as it were, is on her.\textsuperscript{133} Otherwise, her proposed solution to the puzzles of ontic vagueness that follow cannot simply be the assumption that, since we are in the ontic case, there must be precise facts about the matter, which we are simply ignorant of.

3. Properties – An Illustrative Case

In the sections that follow, I will attempt to give an ‘illustrative case’ of how puzzles of ontic vagueness can extend far beyond the general framework in which they are usually countenanced. I will examine several prominent theories of properties – ‘plentiful’ properties, ‘sparse’ universals, tropes, and, finally, nominalism – and show how they interact with the problem of ontic vagueness. In doing show, I hope to show both how widespread the issue of ontic vagueness can be, and also how restrictive an ontology one would need to maintain in order to avoid the worry entirely.

None of the examples that follow are in any sense meant as compelling arguments in favour of ontic vagueness. They are simply meant as puzzles – puzzles

\textsuperscript{132} I’ll discuss this issue in more depth in chapter 9
\textsuperscript{133} For arguments to the effect that, at least thus far in the literature, this burden has been left unfulfilled see Barnes (in draft).
that I see no easy answer to, and which I think are too readily ignored by
metaphysicians who think vagueness is only an issue for those who work in the
aforementioned ‘vagueness area’.

II. Plentiful Properties

1. Properties for Predicates

According to some theories of properties, properties exist for nearly all the
correlating predicates in natural language. There are variations as to how plentiful
these conceptions of properties are, but as a rough and ready guide, if a predicate has
“common sense” usage in natural language – i.e., “is a horse”, “is green”, “is taller
than”, etc. – then a corresponding property exists.

But such a conception of properties will straightforwardly have difficulties
with vagueness, because along these lines properties exist for the classically vague
predicates like “is bald”, “is red”, and “is a heap”. These properties are meant to exist
objectively – they are bits of ontology that our words pick out. But if the world really
does contain redness, baldness, and heap-ness, then it looks prima facie plausible to
conclude that the world must be vague. Consider the classic Sorites series for heaps –
it looks utterly convincing that there is no sharp cut-off between the removal of grain
n and grain n+1 at which the collection of sand passes from heap to not heap. Rather,
the transition is vague. But a plentiful theory of properties would have us conclude
that there is an object in the non-representational world which instantiates the
property of being a heap. Surely the same principle will hold true for that object. A
sharp cut-off for the property doesn’t look any better than a sharp cut-off for the

134 Swoyer (2000)
135 Note the distinction here between ‘plentiful’ properties and Lewisian ‘abundant’ properties. For
Lewis, any set of individuals, no matter how arbitrary, counts as a property in the abundant sense.
Thus, for Lewis, there is, for example, a property of being either my wedding ring or Mt. Everest.
However, Lewis also admits a special category of ‘sparse’ or ‘natural’ properties into his ontology as
well; more on these later. See Lewis (1983) for his discussion of these issues.
predicate – one grain of sand shouldn’t make the difference between an object instantiating the heap property and not instantiating the heap property. So, unless the ‘plentiful’ properties theorist wants to opt for epistemicism, it seems her theory will have significant interplay with problems of vagueness. But again, unless she favours epistemicism as an analysis of vagueness no matter what its form or has a conclusive argument showing that there simply cannot be ontic vagueness, such a move is unwarranted.

2. Properties for Precisifications

The theorist who believes in plentiful properties might then opt for an account of those properties specific to a particular theory of vagueness. The supervaluationist, for example, could characterize properties as functions from precisifications to truth-values, or something along those lines. The property of redness would thus be the function that assigns truth values for the predicate ‘is red’ to every individual in all admissible precisifications.

Though this characterization might well provide an adequate treatment of vagueness, it’s not clear that strategies of this kind preserve the motivations many philosophers have for going in for talk of properties in the first place. It’s quite plausible to think that similar predicates in different languages will have slightly different sets of admissible precisifications, since which precisifications will be admissible will depend largely on the truth-conditions of a specific language. But if this is the case then we cannot single out properties across languages. Yet a key intuition behind properties is that when I use the word ‘red’ and a Spanish-speaker

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136 Note here that the same worry will apply even if you respond that there isn’t a unique heap property (i.e., that there is a set of properties, any of which are sufficient, if instantiated by x, for the truth of ‘x is a heap’). It seems just as implausible to suppose that there is a sharp cut-off in the above forced-march Sorites for the collection of grains of sand instantiating any of the heap-like properties as it is to suppose there’s such a cut-off for the instantiation of the heap property (this, I suppose, is a version of the worry from higher-order vagueness).

137 Thanks to Daniel Nolan for suggesting this theory of properties to me.
uses the word ‘rojo’, we are attempting, in a sense, to pick out the same thing – the property of redness. The property exists objectively, and different words in different languages (or even within the same language) seek, with varying degrees of success or specificity, to refer to it. Adopting a language-dependent characterization of properties loses this intuitive pull, and thus makes it unclear what further motivation we would then have for including properties in our ontology.

Moreover, this account might still lead to worries of ontic vagueness, due to the familiar difficulties supervaluationism encounters with higher-order vagueness. We have good reason to think that it will be vague which precisifications are admissible as candidates for redness, and thus vague which function (from a set of precisifications to truth values) is the realizer for the property of redness. Thus, for some function x, we can have a case where it is indeterminate whether x = the property of redness. And if, perhaps for reasons like those given by Gareth Evans in his (1978) you find vague identity problematic, such issues will be worrisome.

3. Special Sets

Alternatively, the plentiful theorist could characterize properties as ‘special sets’. That is, contra Lewis, she could claim that properties are indeed merely sets of individuals, but that only some, not all, sets count as genuine properties – only the ‘special’ sets, the sets in which the corresponding predicates apply to all the members, perhaps, count as properties. Worries of vagueness will straightforwardly arise here as well, though, for even though all the sets themselves are fully determinate in their extension, the inherent vagueness in terms like ‘baldness’ might well lead us to suppose that there is vagueness in which set is the realizer for the property of

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138 Nor does it seem likely that we can give a semantic diagnosis of such indeterminacy; the functions exist and are fully objective, as is, according to plentiful property theory, the property they are meant to realize; this seems to be a paradigm case of indeterminacy de re.

139 Swoyer (2000)
baldness. Some men have no hair, and are thus determinately bald. Others are completely hirsute – determinately not bald. But we can of course easily imagine a man, call him Daniel, who is ‘balding’; he has some hair, but not much. In vagueness talk, we say Daniel is ‘borderline bald’. We have sets for most anything and everything, so there will be a set containing all the determinately bald men, but not Daniel and a set containing all the determinately bald men and Daniel as well. Which set is the ‘special’ set of baldness? It seems indeterminate. Stipulating that properties will be realized by the set that contains all and only the things to which the corresponding predicate determinately applies won’t help allay the worry, due to familiar problems of higher-order vagueness. We can just as easily imagine a man who is borderline determinately bald. So, again, we will have a case of it being indeterminate whether set x = the property baldness.

It seems, then, that a ‘plentiful’ theory of properties will at least prima facie have significant commitments to ontic vagueness. Alternative, precisifying characterizations of what the properties are don’t manage to dispel the worries, as the vagueness always manages to re-enter at a higher level. Not surprising, since we are positing unique, objective entities to correspond to things like ‘heaps’ and ‘baldness’.

But is this ‘ontic vagueness’? Properties and sets are things we include in our ontology, and if they are vague, it certainly seems like ‘ontic vagueness’ – given a basic definition that a case of vagueness is ontic iff: the vagueness would remain were all the representational content precisified – is apt terminology. But the defender of a plentiful conception of properties might protest that the vagueness here is not the problematic sort of vagueness usually associated with so-called ‘ontic vagueness’ – that is, it is not vagueness ‘in the world’. Properties, though they exist, are abstract
objects; as such, their vagueness is less problematic than that of physical, kickable objects. The ontic vagueness philosophers have found so problematic is that associated with vagueness in the physical world, particularly vagueness of physical objects. But vagueness of properties and sets is nothing of the sort.

Admittedly, if a man is such than it is vague whether or not he instantiates the property of baldness it is a case of vagueness in ontology. But the man’s actual physical makeup – i.e., the number of hairs on his head – is fully determinate. The vagueness only arises at the abstract, non-physical level. Yet it’s often ontic vagueness of the former kind – vagueness in the physical makeup of objects, for example – that philosophers have found so objectionable.

It’s not at all clear, however, that such a response is drawing a principled distinction. Ontic vagueness – of any sort – is vagueness in existence, a non-linguistic indeterminacy in what there is. As such, any admission of ontic vagueness seems quite substantial, even at non-physical levels of ontology. Moreover, it’s not clear why we should think that certain forms of ontic vagueness are acceptable while others are not. If vagueness in abstract objects is admissible, while vagueness in physical objects isn’t, in virtue of what is this case? Both are cases of non-linguistic vagueness in existence. Both are examples of vagueness in objective ontology. Why is the physical case so much more problematic?

II. Sparse Properties

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140 Or, at least, so they are characterized by most plentiful properties theorists. Generally, those who particularize properties as tropes tend to adopt a much sparser property ontology (as shall be discussed subsequently).

141 For example, you can no longer hold a type of “semantic indecision” view as exhaustively descriptive of vagueness if you think that some objective, mind-independent vagueness exists in our ontology; nor can you maintain than vagueness – and the “logical glitches” it creates – are organic byproducts of the natural and continuing formation of everyday language. And whether or not the vagueness in question is physical, these seem like substantial results.
Plentiful property theories thus have clear issues with ontic vagueness. If the classically vague predicates like ‘red’ and ‘bald’ correspond to genuine properties, the thought goes, then those properties will likewise be vague. The non-specific application of the predicates, in fact, seems to come about in virtue of the fact that there are individuals of which it is indeterminate whether they instantiate a given property. Yet many philosophers – motivated at least in part by the worry that most of our common-usage predicates are too ‘loose’ or ‘rough and ready’ to correspond to genuine properties – have argued for a much sparser conception of properties than ordinarily invoked, wherein the only truly existing properties are certain basic elements of the natural world (which basic elements they are will be a question, ultimately, for physics to decide). Among the most prevalent of these theories are the conception of properties as Universals and the particularized properties of trope theory. In the subsequent sections I will discuss whether worries of vagueness might affect these more constrained property ontologies as well. Again, the examples I offer are not meant to be knock-down arguments or conclusive evidence that the theories in question are, in fact, committed to ontic vagueness, but simply puzzles – puzzles that I see no easy answer to and puzzles that, if persuasive, show that sparse property theories are not immune to the worries of vagueness levelled against their plentiful counterparts.

1. Universals

1.1 Basic vs. Structured Universals

David Armstrong distinguishes between two types of Universals: basic and structured. Basic Universals are simple properties, and are irreducible to anything else. Structured Universals, in contrast, are complex properties built up out of other

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142 As others (e.g., Schiffer (2001) and Merricks (2001) ) have noted as well.

143 There is, of course, conceptual room to deny this. But the burden of proof, it would seem, is on the defender of plentiful properties, rather than the charge of ontic vagueness.
Universals. However, Armstrong crucially denies that structured Universals are reducible to basic Universals, because he thinks it’s an open possibility that there might not be any basic Universals – that is, he thinks that every Universal might have proper parts. Moreover, he argues that the complex Universals must be taken with ontological seriousness, because it may prove impossible to give an exhaustive description of the world without them.

1.2 Vagueness and Universals?

So, of course, the natural question for the purposes here becomes: given the sparse conception of properties depicted in theories of Universals, do they have any problem with vagueness? Prima facie, of course, it seems that they’re better off. For the Universals theorist, the classically vague predicates like ‘bald’, ‘red’, and ‘heap’ don’t correspond to associated Universals. Instead, they’re a simple language grouping based on phenomenal resemblances. Objects that fall under such groupings will more than likely share some structured Universals (how many depending on how closely they resemble one another, resemblance being a matter of having parts (Universals) in common), but there needn’t be any fact of the matter about how many Universals a red object need have in common with a paradigm red object, for instance, to count as instantiating the Universal of redness, because there is no such Universal.

But let’s take a look at the predicates that theorists like Armstrong do want to take seriously, the ones for which they think there are corresponding properties. These are the predicates we often use in science, predicates which are somehow ‘sparse’ or ‘natural’. Take, for example, the property of being Einsteinium.

144 See especially Armstrong (1979), pg. 32-3
145 Armstrong (1989), pg. 84-7 and Lewis (1983), pg. 251
Armstrong (and those of similar philosophical persuasions) is inclined to treat being an instance of an element of the Periodic table with ontological seriousness, and thus to think of being Einsteinium as a genuine property. Thus, according to a theory of Universals, being Einsteinium will be a complex property, a structured Universal composed of a certain arrangement of simple Universals.

But herein lies the potential for vagueness. Atomic bonds don’t form instantaneously; electrons, protons, and neutrons don’t just automatically switch from being independent to being part of an atom. It takes several nanoseconds for the bonds to form, and so it seems that at some point along this process it will be indeterminate whether the particles in question instantiate the property of being Einsteinium. That is, for the particles in question, there will be a point at which it is vague whether they collectively instantiate the structured Universal of Einsteinium.

Moreover, since most philosophers who believe in Universals are Aristotelian about their existence – that is, they deny that any Universal exists uninstantiated – then it seems that they are lead to an even more worrying puzzle of vagueness when we consider that Einsteinium is one of the human-made elements of the Periodic table. Einsteinium was created in a controlled situation in a laboratory, and before that point it had never existed. But, since the initial formation of Einsteinium atoms seems subject to the previous worries of indeterminacy, there appears to be a time at which it is indeterminate whether there is, or ever has been, any Einsteinium.

Armstrong can avoid a charge of vague existence here, because he contends that Universals have a type of atemporal existence, such that ‘no uninstantiated Universals’ translates to ‘all and only the Universals exist which have, are, or will be

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146 For this thought experiment, as well as those that follow, I’ll be using the classical model for the sake of simplicity; I’m assuming that nothing much will be lost by this, as they are just illustrative examples, and could be adapted or reformulated for a more modern conception of physics – needless to say, it’s doubtful bringing in quantum mechanics would help to avoid worries of vagueness.
So the Einsteinium Universal, for Armstrong, would exist prior to its instantiation because, in the actual world, it will be instantiated. But the vagueness re-enters when you stretch the case out modally. Take a series of possible worlds where the production of Einsteinium in the laboratory stops at various points during the formation of the atomic bonds. Some worlds in the series will definitely contain the Universal Einsteinium, while others will definitely not. But it seems that there will be no determinate first world which contains no Universal Einsteinium. And thus, in some worlds it will be vague whether or not there is a Universal of Einsteinium.

It should be noted that this is not, straightforwardly, a commitment to vague existence. It’s important to distinguish between two claims:

1. There is an x, and it is vague whether it exists.
2. It is vague whether there is an x.

Vague existence – at least in its most robust form – would be the former, whereas the current characterization of Universals commits them only to the latter. Still, this may be skirting far too close to vague existence for many to be comfortable (and, indeed, some may feel that (2) is enough to generate a charge of vague existence, even if it’s not as robust as (1)).

Armstrong and his allies might here protest that the proffered examples of vagueness are only in complex properties – in structured Universals. The fundamental properties – and the simple universals to which they correspond – (whatever they may be) will not be vague, nor subject to any sort of vagueness. Yet so long as the simple Universals are precise, there needn’t be a problem.

It’s not clear, however, that the defenders of Universals can get off so quickly. Although they admit that structured Universals are composed of component simpler

\[147\] Armstrong (1989), pg. 75.
Universals, they still take them with ontological seriousness. The property – and its constituent structured Universal – of being Einsteinium, like other properties that will correspond to complex Universals (being H20, being carbon, etc), exist in a way that being red and being bald do not. They are not simply loose family resemblances that our language groups together, but rather are places where, as natural kinds fans are fond of saying, ‘the world is carved at its joints.’ But if these properties (Universals) exist in our ontology – and not in the ‘ontological free lunch’ manner Armstrong is so fond of employing – then it seems the vagueness to which they are subject must be included in our ontology as well.

2. Properties as Particulars – A Theory of Tropes

2.1 Particular Properties

In contrast to believers in Armstrong-style Universals, many philosophers now defend a conception of properties as particularized individuals – often referred to as tropes. According to trope theories, various objects do not ‘participate in’ or ‘instantiate’ the same property; rather, each property is an individual existent.148 Thus, my dog is brown not in virtue of its participation in or instantiation of the property of brownness (shared by many other brown things), but rather in virtue of having a particular, unique trope – the brownness of my dog.

2.2 Vagueness and the Similarity Relation

But how then am I to say that my dog resembles other brown things, if it does not share a property with them? The trope theorist explains this in terms of similarity. Two objects have the same colour, for instance, if their colour tropes are exactly

148 See Oliver (1996), pg. 34
similar. Exact similarity is the basic comparison relation for trope theories, and all other comparisons are couched in the degree to which they approach exact similarity (Oliver 1996: 35). So two objects are alike in colour if they have similar – though not exactly similar – colour tropes. And the similarity relation needn’t hold only for tropes of the same family kind; tropes of colour, for example, are more similar to tropes of shape than they are to tropes of, say, mass.

Yet, because the similarity of tropes is for the most part inexact and because the tropes are distinct existences bound by no shared properties, it seems the similarity relation will in many cases be vague. It will be indeterminate, for example, whether the trope of a molecule’s mass is more similar to the trope of its shape than it is to the trope of its size. Degree of similarity between distinct tropes will, in cases such as these, be a vague matter.\textsuperscript{149} And this, again, seems like a plausible candidate for a case of so-called ontic vagueness. It is vagueness in the world, vagueness that exists objectively in the relations among physical objects.\textsuperscript{150}

2.3 Vagueness in Trope-Transition

Trope theories, however, might face further, more significant difficulties with vagueness than simple vagueness in similarity. Certain properties of objects are continually changing, and a trope theorist will have to give an account of such changes in terms of tropes. Take, for example, an object whose mass is in flux and changing rapidly. The trope theorist has two available routes of explanation here: she can either argue that, for each change in mass a new trope comes into existence (the

\textsuperscript{149} The relevant Sorites series would be of the form: ‘x(1) is more similar to y than z’; ‘if x is more similar to y than z, then x(2). . .’

\textsuperscript{150} It’s not at all clear, however, that vagueness of this kind is particularly problematic. Admitting that tropes sometimes have vague similarity relations doesn’t seem to incur the classic objections against the possibility of ontic vagueness, such as Lewis’ and Sider’s arguments from vagueness in number or worries of potential vague existence (see Sider (2001)).
mass of the object at 31 grams, the mass of the object at 32 grams, at 33 grams, etc.
each being a distinct, non-repeatable trope), or she can claim that a single trope – the
object’s mass trope – exists throughout the changes and accounts for each of them
(the trope changes as the mass changes). The second alternative is likely to be
unpopular among trope theories, both because it would make tropes unsuitable
candidates for truthmakers\textsuperscript{151} and because it seems to be smuggling a notion of
properties in through the back door – it’s difficult to understand how the trope could
‘change’ to accommodate the change in mass without ascribing properties to the trope
itself, which of course is unsatisfactory since tropes are meant to be an exhaustive
characterization of properties. So trope theorists would likely opt instead for the
former option – that the object changes in its tropes as it changes in its mass.

But here we have another situation that looks likely to give rise to vagueness.
If the mass of the object is changing non-continuously, it might be vague when one
trope goes out of existence and a new one comes into being (since there might be no
determinate first instant of the change in mass). Again, unless we hold something
akin to epistemicism, the boundaries for ‘that particular mass’ will be blurry, making
it likewise blurry when the original trope (e.g. the 31 gram trope) ceases to exist and
the new one (32 grams) is generated.

The trope theorist might respond by saying that all tropes are instantaneous,
and thus that each individual mass trope exists only for an instant, and that the next
comes into being the following instant. This response, however, doesn’t seem to
wholly dispel the vagueness (or at least the suspicion thereof) in question. There
could be a precise number of tropes in a sequence, but it be vague which tropes are

\textsuperscript{151} The same trope would make true “the object’s mass is 31 grams” and “the objects mass is 32
grams”, which most truthmaker theories would find unsatisfactory.
change tropes\textsuperscript{152} and which tropes are not (again, because there might be no first instant when the mass begins to change). Or, given a precise amount of time, it might be vague how many tropes there are in that time unit. For it to be precise how many tropes there are, there would have to be a fully precise, sharply-bounded smallest unit of time that would exactly determine the extinction of one trope and the generation of the next. But do we have any reason to think such precision will be present in the temporal case when it appears so lacking in the material case?\textsuperscript{153}

2.4 Vagueness in Trope Existence

It might even be possible to construct a scenario similar to the Einsteinium case for Universals, where it is vague whether an object has a certain property at all. But, since trope theories particularize properties, in such a case it would not simply be vague whether they instantiate a shared concept; rather, it would be vague whether or not a trope exists to manifest that property in the object. Suppose you have an atom with an electron in its outer shell, about to leave the atom and be taken up into another, rendering the atom an ion with a positive charge. At the moment, the atom has no charge – it is neutral. But as soon as the electron has completely left the atom, the atom will have a positive charge. It will thus have a new trope – a charge trope – that it did not previously have, and which did not previously exist, since tropes are non-repeatable. But it may well be a vague matter as to when the electron has completely left the atom’s shell, as to when the atom can fully and officially be said to have charge. At the points in time (brief as they are), when the electron is in such a state, it will be indeterminate whether the atom has a charge. And as such, it will likewise be indeterminate whether the atom has a charge trope – indeterminate.

\textsuperscript{152} I.e., tropes that represent a change in mass compared to the previous trope.

\textsuperscript{153} It seems at least possible, for example, that time might be ‘gunky’ in a way analogous to the picture of matter given by theories of ‘atomless gunk’.
whether there is a charge trope for that particular atom. As with the Einsteinium case for Universals, there’s conceptual room to deny that such a scenario is sufficient for vague existence, but it’s certainly skirting rather close.

3. Conclusion

It seems, then, that adopting a sparse property ontology by no means avoids worries of ontic vagueness. Though they may dispense with classically vague properties like redness and baldness, trope-theory and Universals-theory still encounter ‘borderline region’ puzzles similar to those so familiar in the properties they eschewed. Unless a convincing rebuttal to such charges of ontic vagueness can be found, then a stark revision is needed in ontology: either accept the existence of ontic vagueness or side with the nominalist and give up on property ontology altogether.

IV. Nominalism

It seems, then, that even the more ‘sparse’ theories of properties cannot escape worries of ontic vagueness. But what about nominalism, that most austere treatment of properties? Does the nominalist avoid the costs of vagueness that those committed to properties incur?

1. Resemblance Nominalism

The answer to that question, of course, depends on what type of nominalism we consider. First, we’ll turn to resemblance nominalism – the view that eschews any addition of properties, be they universals, tropes, or otherwise, into its ontology, but admits the relation of resemblance.\textsuperscript{154} Attempting to maintain as parsimonious an

\textsuperscript{154} See Armstrong (1988)
ontology as possible, resemblance nominalists employ something they are already committed to – sets – to do the work traditionally laid out for properties. Like trope theorists, resemblance nominalists employ a single, basic relation – resemblance – which according to their theory is primitive and unanalyzable. They then reduce what we often think of as properties down to various resemblance classes, which are merely sets of particular objects. Take as an example the case of redness. The resemblance class of redness will include certain paradigm red objects and all and only those other objects which resemble each paradigm object at least as much as the paradigm objects resemble one another. These classes will come in varying sizes and degrees of specificity – the class of crimson will be smaller than the class of red, which will in turn be smaller than the class of colour – and nominalists claim that they are capable of doing any work we might have needed properties for, without the extra additions to our ontology.

Even utterly sparse resemblance nominalism, however, will incur certain costs with respect to ontic vagueness. Resemblance is, admittedly, an inexact matter (as was discussed previously in regard to tropes). Once the resemblance is no longer exact resemblance, then it seems that there is room for vagueness to enter the picture. For a classically “borderline” case of a red object, for example, it may be indeterminate whether it does in fact resemble the paradigm red objects as much as they resemble one another. As noted earlier, the relevant Sorites here will be ‘If x resembles a more than b then y resembles a more than b’. And if this is the case, it will in turn be vague whether or not the borderline object is a member of the class of red things, due to vagueness in the (very real and objective) resemblance relation.

So it looks as though the resemblance nominalists have a rather straightforward commitment to vagueness in the resemblance relation. And, on the
construal of resemblance as a completely objective, non-representational matter, that
certainly looks to be a case of ontic vagueness. The nominalists find some reward for
their parsimony, though, as vagueness in resemblance does seem to be their only
concern as far as ontic vagueness goes. They avoid worries of vague instantiation,
even vague existence that previous theories were plagued with. Still, it seems quite
surprising that even this most parsimonious theory of properties arguably contains at
least some apparent commitment to ontic vagueness.

2. Projective Nominalism

An alternative construal of nominalism, however, characterizes the
resemblance relation as in some sense projective. The world contains only things.
We find similarity amongst things and sort them into various classes and groupings,
but that, fundamentally, is a fact about us, not about the world. The world as it is in
and of itself contains only concrete objects.

At last, it seems, we’ve found a theory of properties that has no trouble with
ontic vagueness. If the nominalist rejects all property ontology in favour of sets and
then claims that resemblance holds in virtue of us, rather than the world, no charge of
ontic vagueness – at least with respect to the treatment of properties – looks
forthcoming.

It’s illuminating, however, to see just how far one has to go – just how
restrictive an ontology must be maintained – in order to avoid worries of ontic
vagueness. Needless to say, not many people are going to be happy with a projective
nominalist account of properties. Those that are not, then, should either find a tenable
solution to the proffered puzzles of ontic vagueness, or decide that commitment to
ontic vagueness is a bullet they can bite.

V. Conclusion
The previous sections have been an attempt to show – through the illustrative case of properties – just how far-reaching concerns of ontic vagueness really are. To avoid them, at least in this case (and I suspect in others) one must adopt an ontology so austere the few would be happy with it, and many would doubt its adequacy. For those who want to be less restrictive, then, I contend that greater attention must be paid to the issue of ontic vagueness. Whether it can be sidestepped, argued against, or simply taken on board as simply a theoretical cost, ontic vagueness deserves fully developed and careful treatment – because it’s quite likely that whenever you’re doing metaphysics you’re already in the ‘vagueness area’.
Works Cited


Chapter 6

Four-dimensionalism, Natural Properties, and Vagueness

Abstract: Four-dimensionalism is generally thought to have a marked advantage over three-dimensionalism with respect to the problem of vagueness in persistence. In this chapter, however, I argue that the standard four-dimensionalist treatment of vagueness cannot be applied to all apparent forms of such vagueness if, as most four-dimensionalists do, we accept some form of ‘natural’ or ‘sparse’ properties into our ontology. The dialectic is thus constructed as a dilemma for the defender of four-dimensionalism: either she rejects natural properties, leaving her with an unappealing ontology, or she admits that she is, in fact, at no advantage on the vagueness issue when compared to the three-dimensionalist, thus forgoing one of the prime motivations for her view. Both horns can be embraced, but neither are appealing.

Vagueness in persistence is a well-rehearsed and deep-set problem in the philosophy of time. General orthodoxy has it that three-dimensionalists have a (not unsolvable) problem with it, but that four-dimensionalists do not. In this paper, I will set out to challenge that orthodoxy by arguing that the four-dimensionalist who accepts natural properties (as most do) encounters vagueness in persistence which cannot be addressed by her general picture of semantic indecision. I will conclude that unless the four-dimensionalist rejects any sort of natural properties, which is quite an unpalatable move, she has little to no advantage over the three-dimensionalist with respect to vagueness.

The paper runs in five sections, as follows: in section (1), I set up the problem of vagueness in persistence; in (2), I outline the four-dimensionalist’s purported solution to the problem; in (3), I motivate reasons to suppose that natural properties might be vague, and if so that such vagueness yields vagueness in the extension and identity of space-time worms; in (4) I consider potential responses the four-dimensionalist might offer; and in (5) I offer some brief closing remarks.
1. Vagueness in Persistence

Most philosophers take it as a datum of the subject matter that things persist through time. Tibbles the cat existed yesterday, and, if all goes well for Tibbles today, he’ll also exist tomorrow. Persistence, though, is arguably the trickiest issue within philosophy of time, and the puzzle which gives rise to problem of temporal vagueness (and possible worries of ontic vagueness).

Tibbles existed as a kitten, when he was quite a bit smaller than he is now. To grow to his full cat-size, he’s gained quite a few parts, while still remaining the same thing – Tibbles – as he was when he was kitten. Moreover, Tibbles can also survive the loss of some of his parts. He does this every day, in fact – some of his hairs will be shed, some skin cells will flake off, etc. But Tibbles can also survive even more radical part-loss. If, tragically, Tibbles loses a limb, he’ll still remain the same cat – he’ll just be the same cat minus a leg.

Being only mortal, however, Tibbles’ ability to survive part loss can only go so far. He certainly can’t survive the loss of all of his parts; nor does it seem likely that he will be able to survive most of them. At some point, then, the particles that now compose Tibbles will cease to be that cat, and simply become a lump of matter (or a corpse, or particles arranged cat-wise – whatever your metaphysics is here). Alas, poor Tibbles, we knew him well!

But, as many philosophers have pointed out, there seems to be no fact of the matter as to when, in a constructed series of part-loss, the arranged mass of particles ceases to be Tibbles. Tibbles’ persistence through the change in his parts thus appears vague – there’s no clear cut-off point where we can say Tibbles stops persisting.

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And the problem generalizes from living things to objects in general. Suppose, to commemorate our beloved pet, we carve a statue of Tibbles. We drop the statue, and a leg breaks off. Arguably, it’s still the same statue – it’s just now missing a leg. But, being hopelessly clumsy, if we drop the statue again and it shatters, it seems we no longer have a statue. But rather than having an instantly-shattering statue, imagine a Sorites-style series where one molecule at a time is removed. At what point do we cease to have a statue, and instead just have a collection of particles? It looks like a classic example of vagueness.

The other familiar examples in the area come from ‘Ship of Theseus’-style scenarios. Suppose I start taking particles from the original statue and using them to build a new statue, all the while replacing the particles I’m taking away with different ones. Eventually I’ll have two complete statues – one with the historical claim to be the original, the other with all the particles from the original. Which (if either) of the two statues is the original statue of Tibbles? Many are inclined to say there’s simply no fact of the matter.157

It’s important, of course, to distinguish genuine vagueness from mere indeterminacy.158 However, if we take Patrick Greenough’s suggestion of Sorites-susceptibility as a sufficient (and perhaps necessary) condition for vagueness,159 then it seems that ‘Ship of Theseus’-type examples do generate vagueness. Construct a Sorites series from ‘is determinately the original’ to ‘is not determinately the original’, ranging over the removal and subsequent replacement of individual particles. From a series such as this, there certainly appears to be no sharp cut-off

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157 For interesting discussion of these issues see Stalnaker (2003).
158 As, e.g., Williamson’s ‘dommal’ example shows, not all cases of indeterminacy are cases of vagueness (see Williamson 1990). Many philosophers (see, for example, Akiba (2004)), are inclined to treat situations like the one outlined above as cases of indeterminacy, but not vagueness – with vagueness understood as being a certain subspecies of indeterminacy.
159 See Greenough (2003).
point, giving rise to borderline cases, indeterminacy, etc. – the classic features of vagueness.

There are many more complicated and far-fetched examples on offer in discussions of persistence, but I think the above suffices to show the (already well-iterated) point that persistence is a philosophically tricky issue which apparently gives rise to vagueness. As has been well-rehearsed in the literature, however, the various versions of four-dimensionalism claim to have a far better response to the problem of vagueness in persistence than their three-dimensional opponents.

2. The Four-Dimensionalist Solution

According to the four-dimensionalist picture, objects *perdure* rather than *endure*. That is, rather than being ‘wholly present’ at individual times, objects are temporally extended in much the same way they are spatially extended; they have ‘temporal parts’ present at each individual time, but the objects themselves are ‘temporal worms’ – four-dimensional sums of all their temporal parts (just as objects at times are sums of all their spatial parts).

Moreover, four-dimensionalists, as a general rule, commit to unrestricted mereology – the doctrine that for any collection of things (no matter how arbitrary) there will be a further object which composes those things. Unrestricted mereology, for the defender of four-dimensionalism, however, extends to temporal parts as well as spatial parts, so not only is there an object composed of the tofu in my

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160 E.g. Van Inwagen’s ‘fiendish cabinet’ that disrupts persistence conditions (Van Inwagen 1990), or the case of the patient with the bisected brain implanted in two different bodies.
161 See especially Hawley (2001), Heller (1990), and Sider (2001).
162 The three-dimensionalists, of course, have their responses to this charge; but more on this later. Some, however, simply accept vagueness as a cost of their view (see especially Van Inwagen 1990).
163 For an excellent exposition of these issues see Haslanger (2002). The ‘stage theory’ version of four-dimensionalism is slightly different, but I’ll leave that to the side for now; see Sider (2001) and Hawley (2001) for an explication of the stage view.
164 For an argument for unrestricted mereology see Sider (2001).
refrigerator and a rock on Venus, there’s also an object composed of all my temporal parts up to today, and all the tofu’s temporal parts from then on.\textsuperscript{165}

Odd as it may sound, this wealth of objects is essential to the four-dimensionalist response to vagueness.\textsuperscript{166} Ostensibly, few people will find it particularly worrying or problematic that identity statements can be vague. The worry, rather, would arise if the identity itself turned out vague.\textsuperscript{167} So it’s perfectly acceptable to have a sentence like ‘Tibbles is my favourite cat’ come out vague – despite the fact that it involves an identity claim – if, for example, I simply haven’t made up my mind which cat is my favourite. What would be objectionable, it seems, is the notion that both ‘Tibbles’ and ‘my favourite cat’ could both determinately refer, and yet there still remain vagueness in the identity claim.\textsuperscript{168}

The four-dimensionalist seeks to exploit the fairly innocuous nature of vagueness in identity statements (those where the vagueness arises simply because the referring terms are vague) in her treatment of vagueness in persistence. Though it may seem ontic on the face of it – is this thing really the same as that thing – when considered from a four-dimensionalist perspective, she argues, the vagueness clearly is semantic in nature. We simply haven’t decided what things we’re meaning to refer to.

Take the case of Tibbles. We want to know whether Tibbles now is the same thing as a collection of atoms at some point in the future (where Tibbles has lost many, but not all, of his parts) – call it Tibbles’. The question seems to be, simply:

\textsuperscript{165} For worries about results such as these, see Zimmerman (2004).
\textsuperscript{166} A common response to the four-dimensionalist picture, and to unrestricted mereology in general is that it’s simply too counter-intuitive. For some motivations that it might not be, see Rosen and Dorr (2004).
\textsuperscript{167} Indeed, many philosophers, following Gareth Evans (see Evans (1978)) think such vagueness is incoherent. I have my doubts, for independent reasons which I won’t go into here. For an interesting discussion of the issue, however, see Edgington (2000).
\textsuperscript{168} Again, this is problematic for those who find Evans-style motivations compelling. I don’t, but that’s an entirely separate issue.
does Tibbles = Tibbles? The four-dimensionalist can agree that there is no fact of the matter – that it is vague – whether Tibbles and Tibbles are identical, and yet can offer a semantic analysis of the vagueness in question. The identity is semantically vague, she claims, because it’s indeterminate what ‘Tibbles’ and ‘Tibbles’ actually refer to.

Because of her commitment to unrestricted mereology, the four-dimensionalist will believe that there are many, many things which share a temporal part at the point in time we are using ‘Tibbles’ as a referring expression. Some of them – like the space-time worm made up of alternating cat parts and tofu parts, for instance – will quite naturally be unsuitable as referents for ‘Tibbles’. Others, however, will be far more likely candidates, though as extended space-time worms they will all be distinct from one another.

Suppose we have an interval of time, $T_1$-$T_3$, which comprises, roughly, the instants from Tibbles’ kitten stages through the loss of parts $\{x\}$ ($\{x\}$ being some very large portion of cat-parts). On the four-dimensionalist picture, there will be an object Tib(1), that will be the sum of all the temporal parts of the relevant cat parts\footnote{There will, of course, be additional vagueness here, for Problem-of-the-Many-style reasons (see Lewis (1993)), which I will ignore for the sake of simplicity.} in $T_1$-$T_3$; but there will also be Tib(2), the sum of the temporal parts in $T_1$-$T_2$; and likewise Tib(3), the sum of the temporal parts at only $T_1$.

Though Tibs (1)-(3) are all distinct space-time worms – they are all different things – they each share temporal parts. In particular, at the time, $T_1$, when we use ‘Tibbles’ as a referring term, they are all coincident objects. But since they are all coincident at the point where we use ‘Tibbles’ as a referring term, it seems that they are all perfectly good candidates as the reference of ‘Tibbles’. Which – Tib(1), (2), or (3) – do we mean by ‘Tibbles’? Like the paradigm cases of semantic indecision, the four-dimensionalists argue, we simply haven’t made up our minds. There’s no unique
referent of ‘Tibbles’ – we haven’t decided how exactly we want to use it – and thus it’s a vague referring term. But since it’s a vague referring term, there should be no deep metaphysical mystery about vague statements involving it. Such vagueness isn’t rooted in the world, according to the four-dimensionalist picture, but simply in how our words latch on to the world.

3. Natural Properties, Natural Vagueness

Presented as such, four-dimensionalism does seem to undermine many of the worries about vagueness in persisting things. But does it do so for all persisting things? The four-dimensionalist’s model can easily handle standard problems like criteria of identity of over time for persons, because it simply suggests that we haven’t quite made up our mind how we want to use our term ‘person’. Any one temporal part of a human being will be part of numerous different space-time worms, some of which have bodily continuity but perhaps not psychological continuity, others of which have psychological continuity but perhaps not bodily continuity, etc. There is simply no further fact about which one(s) of these worms count as the persisting person, because ‘person’ is a vague term; sometimes we use it to mean ‘person qua bodily continuant’, other times to mean ‘person qua psychological continuant’, but neither usage is ‘correct’ in any deep sense.¹⁷⁰

Such nonfactivity seems at least plausible in the case of terms like ‘person’, but it’s not clear that it will be a tenable response – at least for someone who maintains the metaphysics of Lewis, Sider, and many others who espouse four-dimensionalism – in all cases where, prima facie, persistence seems vague.

Sider (building on Lewis¹⁷¹) thinks that ‘person’ has no unique metaphysical referent – and thus can be amenable to the nonfactive response – because it does not

¹⁷⁰ See Sider (2001b)
¹⁷¹ See Lewis (1983)
correspond to a natural property. There is no one feature of the world that is uniquely eligible, above all the others, to stand out as the meaning of our word ‘person’. In short, ‘person’ is not a place where ‘the world is carved at its joints’. But, though personhood may not be one of them, Sider certainly thinks that the world does indeed have such ‘joints’. These joints are the natural properties, the things which through their intrinsic eligibility single themselves out as the referents of our words (likely candidates being those terms which are indispensable to science, perhaps).

Things dependent on natural properties of this sort, it seems, would not have the multiple candidates of reference that other persisting things like persons have. Suppose that elements of the periodic table are natural properties. If so, then an instance of Einsteinium, for example, wouldn’t have the multiple space-time worms which all count as candidates for the referent of ‘that atom of Einsteinium’. Rather, the atom of Einsteinium would quite straightforwardly be the space-time worm that fuses all the temporal parts of the subatomic particles in question which (collectively) instantiate the property of being Einsteinium. None of the other space-time worms in the vicinity, it seems, have the same degree of fit – if Einsteinium is a natural property then there will simply be one space-time worm that comes out as uniquely eligible.

Yet, as argued in Barnes (2005), there are motivations suggesting that so-called ‘natural’ properties admit of vagueness just as much as more ‘abundant’ theories of properties (and that, since sparse property theories maintain that our terms for such properties refer directly to the properties themselves, the vagueness in question appears to be ontic, not semantic). Consider the case of Einsteinium.

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172 See the introduction to Sider’s (2001)
173 It seems to be a direct result of the nonfactivity of terms like ‘person’ that allows for multiple candidates in persisting persons; but there is no such nonfactivity in natural properties.
174 For ease, I’ll be assuming the classical model. I’m taking it for granted that this could be amended (or other examples of a similar kind put in its place) if necessary, but that nothing much hangs on it. After all, no one ever introduced quantum theory to avoid worries of indeterminacy.
Suppose that we have some distinct sub-atomic particles which come together to form an Einsteinium atom. They do so by a process – the atomic bonds don’t just switch from off to on. Assuming that continuous change in such instances is possible, then we can construct a continuum of cases where the arrangement of the subatomic particles in each case differs only marginally from the case before and after it. At one end of the continuum, the particles are determinately not an instance of Einsteinium; at the other, they are. Yet, given such a continuum, it would seem metaphysically arbitrary to suppose that there is a sharp cut-off point in this series where the subatomic particles suddenly begin to count as an instance of Einsteinium. And, indeed, by the Lewis/Sider model we cannot suppose that there is such a cut-off, on pain of ‘metaphysical arbitrariness’. It seems, then, that we should reject sharp cut-offs for such continua. But, of course, such continua appear to be simply metaphysical versions of the classic Sorites series, and by rejecting sharp cut-offs, we find ourselves stuck with vagueness. Thus, if the particles are changing their location and/or relations to one another continuously and the atomic bonds take several nanoseconds to form, then it looks like there will be some point in the process – no matter how brief – when it’s indeterminate whether they collectively form an Einsteinium atom, and thereby vague whether they instantiate an Einsteinium atom.

But if such vagueness is plausible, it serves to create the possibility of vagueness in persistence that cannot be characterized by standard four-dimensionalist methods. Returning to the case of the Einsteinium atom, suppose that it is in fact vague when the subatomic particles in question begin to collectively instantiate the property of being Einsteinium. If there is vagueness in that respect, then there will be vagueness in when the Einsteinium atom begins to exist. That is, there will be several
in instants where it is indeterminate whether or not, for this particular case, Einsteinium is being instantiated.

But recall that there is no semantic indecision as to which space-time worm is the Einsteinium atom – it is the sum of all the temporal parts of the relevant subatomic particles which collectively instantiate Einsteinium. So we have determinately picked out a specific space-time worm. This space-time worm, however, seems to be indeterminate in its extension. It is (determinately) the sum of all the relevantly located temporal parts which instantiate the property of being Einsteinium. Yet there are some temporal parts – a few instants – at its edges where it is indeterminate whether the relevant subatomic particles do in fact instantiate Einsteinium. And thus, for those temporal parts, it will be indeterminate whether they are a part of the space-time worm in question.

Moreover, such vagueness leads to what some believe to be an even more worrying form of worldly vagueness – vague identity. Again, as rehearsed above, commitment to natural properties entails that there will be a single unique referent of a term like ‘the Einsteinium atom’. But the space-time worm singled out by ‘the Einsteinium atom’ will have vague boundaries – for some temporal parts at its edges it will be indeterminate whether or not they are a part of its extension. So coin a term ‘the Einsteinium atom*’ that determinately includes one of these ‘borderline’ parts. It looks as though it will be indeterminate whether the Einsteinium atom is identical to the Einsteinium atom*.175

175 Significantly, this needs to be a claim about the objects denoted, not about the terms. No one, including Evans, should find it problematic that terms can be vaguely identical. There may well be good reason for rejecting the idea that the case in question is indeed a case of vague identity – perhaps, for example, because you think that every vague object is determinately non-identical to every precise one. But reasons such as these are more generally reasons for not finding the Evans argument compelling in the first place. So if you think vague identity is a problem, then you should probably think this is a problem.
Yet this vagueness seems to be wholly a matter of how the world is, rather than how language is. The four-dimensionalist, as rehearsed above, cannot simply offer a semantic indecision picture of the indeterminacy in question. According to the ‘natural properties’ model, at least, it’s fully precise what terms like ‘Einsteinium’ pick out. That is, it’s fully precise that the Einsteinium atom is the space-time worm composed of all the temporal parts of the relevant subatomic particles which collectively instantiate the property of being Einsteinium. It’s just that there’s no clear fact of the matter about which temporal parts those are. That nonfactivity, however, seems to be semantic, rather than ontic, in origin.

4. Four-Dimensionalist Responses

1. Naturalness does not imply uniqueness

The four-dimensionalist may here object that I’ve over-simplified her theory. I’ve used Einsteinium’s position as a natural property to assume that it’s a unique property (i.e., that there’s a single property, the property of being Einsteinium). But that’s not a valid inference in four-dimensionalist metaphysics. There could be a cluster of properties, all of them equally natural and the instantiation of any of them sufficient for the truth of the claim ‘there is some Einsteinium’. Thus Einsteinium could be fully natural (all of its realizers are natural properties) without there being a unique Einsteinium property. Yet if Einsteinium has no unique realizer, then there can again be multiple candidates for the reference of ‘the Einsteinium atom’, making available a semantic diagnosis for the vagueness in question.

Admittedly, the examples above are oversimplified as presented, but I don’t think much hangs on this. Suppose that Einsteinium has multiple realizers – that there’s a set of natural properties properties each of which are sufficient to ground the truth of ‘there is some Einsteinium’. In that case, it seems the single unique referent
for ‘the Einsteinium atom’ would be the space-time worm of the relevant particles which collectively instantiate any of the Einsteinium-related properties. But here the vagueness worries will re-enter – if it can be vague at what instant a natural property is first instantiated, then it could conceivably be vague when the particles collectively instantiate any of the set of natural properties sufficient for Einsteinium.

Suppose, however, that rather than referring to multiple natural properties, our word ‘Einsteinium’ is indeterminate over a range of natural properties. Einsteinium is thus still fully natural – it determinately refers to a natural property – but there’s no natural property that it determinately refers to. Would this suffice to make the vagueness in question purely semantic?

Short answer: no. Even if the four-dimensionalist claims that ‘Einsteinium’ has no determinate referent, she can still face a challenge of ontic vagueness. The word ‘Einsteinium’ would indeed be semantically vague. Allowing, however, that vagueness always admits of the possibility of precisification, we could admissibly precisify ‘Einsteinium’ to pick out one of the properties to which it indeterminately refers (indeed, such precisification might be necessary to avoid talking past each other). Once we’d done so, the semantic vagueness would be eliminated – ‘Einsteinium’ would determinately refer to a unique natural property. That scenario,

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176 It could be protested that there’s room to maneuver here for the defender of 4D; if properties a and b are both sufficient, then maybe the worm instantiating all and only a is as good a reference candidate as the worm instantiating all and only a or b. It seems to me, though, that the more maximal candidate is clearly the more natural referent.

177 The 4D theorist might here suggest we take advantage of the idea that naturalness can come in degrees. Perhaps the transition into and out of Einsteinium is a smooth one, because it proceeds via a transition of progressively more and then progressively less natural properties. The only way to work this solution, however, would be to adopt a degree-theoretic treatment of vagueness, which for the purposes here I’m not going to consider. For problems with degree theory, see Williamson (1998).

178 Maybe you think we can’t – i.e., it’s impossible for us to speak a precise language. All that’s necessary, however, is that an ideal user could.
though, is the case we started off with, and thus the same worries of ontic vagueness
will apply.

Having semantic vagueness in the area, as it were, isn’t sufficient to rule out
worries of ontic vagueness. What’s needed is the stronger claim that the semantic
vagueness is the sole explanation of all the vagueness phenomena the case engenders.
And that’s a claim which in a case like this looks unwarranted.

2. Multiple Reference Candidates

There might be another way, however, for the four-dimensionalist to situate
the vagueness in question firmly back in semantic content, one which follows closely
on the heels of the previous objection. Suppose, as is quite plausible, that our
common-usage scientific terms do not actually denote unique natural properties. The
natural properties themselves are something more specific, more fundamental, which
our science is not yet exact enough to discover. So ‘Einsteinium’ is not, in fact, a
natural property. It instead refers loosely to a group of natural properties –
Einsteinium*, Einsteinium**, etc which the collection of subatomic particles
instantiate at different times, depending on how they’re arranged. You might even
argue that these natural properties are as narrow as they can possibly be on the four-
dimensionalist framework – that they are instantaneous. So Einsteinium* lasts only
for an instant, and is then succeeded by Einsteinium**, which also lasts only for an
instant, and so on. The original vagueness puzzle has now disappeared, because no
property persists through the particles’ changing – there’s a property for every way
the particles are, and each property lasts only for an instant. Would such a picture
eliminate the worries of ontic vagueness?

It seems, at least to me, that it does not. Suppose we start our Sorites with the
subatomic particles that might compose Einsteinium scattered at the four corners of
the universe. Intuitively, they do not, in this state, collectively instantiate a natural property. Now progress the case forward over a series of possible worlds, each differing only marginally from its successor – which is the first world that instantiates an Einsteinium-related natural property?

The four-dimensionalist might here appeal to the notion that naturalness comes in degrees. The transition towards instantiation of fully natural properties can be smooth, because it can go via the instantiation of progressively more natural properties. A few comments about this. First, unless you want to allow that the first world in the series (where the particles are scattered) instantiates a property that’s to some degree natural, you’ll still countenance a sharp cut-off here – there will still be a first world where the particles collectively instantiate a property that’s in any way natural. If you’re happy with either horn of this dilemma, though, you’ll still face the worry that such a picture in effect commits you, not only to a degree-theoretic treatment of vagueness, but to a degree theory with ontological tie-ins. For every Einsteinium-way the world might be, there’s a unique Einsteinium-related property that corresponds to it, and, moreover, we can give those properties an ordinal ranking with respect to naturalness. That, to me, seems a highly implausible metaphysics.

3. A Mere Indeterminacy

Another clear objection to the problem levied above is that it’s not clear it’s a problem about vagueness. Even if the four-dimensionalist allowed that certain spacetime worms could be indeterminate in their extension, it certainly isn’t the case that all cases of indeterminacy can be classified as cases of vagueness. Perhaps the four-dimensionalist can accept a certain degree of ontic indeterminacy in objects’ extensions without being further committed to ontic vagueness.

179 Indeed, were it protested that they did, I’d start to lose my grip on what a ‘natural’ property is meant to be.
While it’s certainly true that not all cases of indeterminacy count as vagueness, those like the example given above certainly do. Not only do they admit of borderline cases (temporal parts which are indeterminately part of the object), but Sorites series can easily be constructed for them. Just take, as a starting point in the example case, the temporal parts of the same bits of matter (scattered at this point) from a year before the Einsteinium atom was formed. Those temporal parts are determinately not a part of the Einsteinium atom space-time worm. If those temporal parts are not a part of the space-time worm, then the temporal parts an instant later will also not be part of the space-time worm. And so on and so on, until you’ve reached the conclusion that temporal parts directly in the middle of the life of the Einsteinium atom are not a part of the space-time worm – clearly false, via classically Soritical reasoning. And if, as I think we should, we agree with Patrick Greenough that Sorites-susceptibility is a sufficient condition for vagueness, then it seems we do indeed have a case of apparent vagueness on our hands.

4. Going epistemicist

Another possible reply for the four-dimensionalist – one which many philosopher’s find quite plausible when presented with puzzles of putative ‘ontic vagueness’ – is to adopt the strategy made familiar by epistemicists in cases of semantic vagueness. That is, the four-dimensionalist can simply claim that there is a precise fact of the matter about when the subatomic particles collectively instantiate Einsteinium, and thus a precise fact of the matter about the extension of the atom’s space-time worm; it’s just that we’re ignorant of it.

Note that a similar Sorites series can be constructed for the case of the instantiation of Einsteinium. Just take a continuum of subatomic particles, each only marginally distinct from their neighbors in their arrangements, but those at the left determinately not forming an atom and those at the right serving as a paradigm case of atom formation. Simply run the Sorites along this continuum.

See Greenough (2003)
It seems methodologically suspect, however, and somewhat ad hoc to suddenly switch to what is basically the metaphysical analogue of the epistemicist approach (the vagueness is due to a sharp cut-off that we’re ignorant of) when presented with puzzles of ontic, rather than semantic, vagueness. The theorist who goes in for epistemicism across the board is by all means entitled to do so here as well. But for those who take a more standard approach to semantic vagueness, the sudden change to epistemicist-style reasoning in the ontic case simply because it is ontic looks unmotivated. Though they deal with different mediums, semantic and ontic vagueness at least prima facie seem to be instances of the same species – they both feature Sorites-susceptibility, they both have instances of borderline cases, etc. It would be nice, then, to give a uniform account of vagueness as a uniform phenomenon. Switching to something akin to epistemicism once we shift into ontic cases makes this impossible. To motivate such a change we would substantial arguments to show that, while the cases appear similar, there simply cannot be ontic vagueness, though semantic vagueness is acceptable. It is outside the scope of this paper to address the various arguments against ontic vagueness, but I shall put forward the suggestion that truly compelling ones are thin on the ground.¹⁸²

Philosophers tend to reject ontic vagueness based more on the ‘intuition’ that there’s no such thing. But, I contend, such an intuitions, in and of themselves, are not sufficient to motivate a default shift into epistemicism whenever puzzles of apparent ontic vagueness are raised.

5. Appealing to eligibility

The four dimensionalist might protest that she can, in fact, provide warrant for positing sharp cut-offs in the ontic case – the supposed cut-offs exist because of the

¹⁸² The famous Evans’ proof from vague identity is not conclusive (see Edgington (2000) and Heck (1998)). And, besides, as Williamson has pointed out there seems to be no good reason to think that ontic vagueness would automatically entail vague identity (Williamson 1994).
intrinsic eligibility of the properties in question, rather then as simple arbitrary
metaphysics. The continuum cases offered as examples are not plausible, precisely
because natural properties have features of intrinsic eligibility. If we think the
distinction between $\Phi$ and $\sim \Phi$ is a natural one, then we can assume that the distinction
is a sharp one, because the $\Phi/\sim \Phi$ boundary is one of the places where ‘nature is
carved at its joints’. Nature will give us a sharp – and wholly non-arbitrary – cut-off
in cases of purely natural properties, because the world clearly demarcates, for any
natural property $\Phi$, the $\Phi$s from the $\sim \Phi$s.\textsuperscript{183} Thus we simply cannot have a
continuum of the kind appealed to in motivating Soritical intuitions. Somewhere
along the line (though our scientific information may as yet be insufficient to point
out where or how) the world will give us a sharp cut-off. Moreover, such a cut-off
will by no means be arbitrary, because natural properties’ intrinsic eligibility is such
that there is a clear distinction between the $\Phi$s and the $\sim \Phi$s.

This objection, however, seems to hinge on a misunderstanding of eligibility.
If you claim that a property is intrinsically eligible, you make a distinctive meta-
ontological claim. You’re saying that the property in question is a distinction the
world draws by itself, rather than a distinction which we project on the world. But
that tells us \textit{nothing} about what kind of distinction it is. It might be brute, it might be
arbitrary, it might be downright weird. And, crucially, for all eligibility
considerations have told us, it might be vague. To say that a distinction is a natural
one – and, correspondingly, that its features are uniquely eligible – is to say
something about what it is \textit{in virtue of which the distinction holds}. That claim,
however, will be utterly silent as to \textit{what that distinction is like}.

\textsuperscript{183} Trenton Merricks makes this argument for the case of composition in his (2005)
You may, of course, have other motivations which dictate what kinds of distinctions you think can admissibly count as natural distinctions. But eligibility considerations alone can’t generate these.

6. Ruling out supervenience

As a final response, it could be argued that the reason we find the continuous change on which these vagueness intuitions hinge plausible (at least as a metaphysical possibility) is that the change in question supervenes on various subvening microphysical factors (e.g., in the Einsteinium case, the change from not being an instance of the atom to being an instance of the atom supervenes on the arrangement of the sub-atomic particles). But what if we were to rule out supervening properties as candidates for natural properties, claiming instead that only the base-level properties are the truly natural properties?

I have two responses to this objection. The first is that we ought not place a blanket ban on supervenient (i.e., non-base level) properties as candidates for natural properties. It might at least be metaphysically possible that there are no base-level properties – that is, that we have supervenience all the way down. Ruling out supervenient properties as natural properties might thus leave you with no natural properties at all. Moreover, even if we grant that there are a set of base-level properties, it might be impossible to tell a full, explanatorily adequate story of the world using those properties alone. We might need some supervenient properties included among the set of natural properties in order to do the work natural properties were brought in to accomplish in the first place. With these considerations in mind, then, it seems problematic to generally rule out any kind of supervenient property as a

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184 As in the ‘onion world’ described by Armstrong in his (1978). Although see Williams (forthcoming) for some doubts about the possibility of ‘onion worlds’.
185 See Armstrong (1978) and Lewis (1983).
natural property. And eschewing them simply to avoid worries of vagueness would be ad hoc at best.

Secondly, I’m unconvinced that the motivation for continuous change relies on having supervenient natural properties. Suppose you thought that the world was composed of atomic simples, and that ‘is an atomic simple’ was a (or even the) basic natural property. Furthermore, suppose that for the reasons set out in Hawley (2004) or McKinnon (2003), you think that atomic simples might be vague. If you had a theory according to which it is possible for two simples to fuse to form another simple, then it seems you could conceive of a case where two simples come together but, because simplicity can be a vague matter, it is indeterminate whether they become a composite or fuse to form another simple. Such a scenario would, apparently, be a case of ontic vagueness that does not rely on an underlying subvenience base. Of course, the example requires some very obscure metaphysical commitments, but the point is that motivations toward ontic vagueness don’t necessarily require supervenient properties.

5. Conclusion

But what, in the end, does all of this have to do with philosophy of time? In delving in to natural properties, we seem to have gotten quite far away from the original subject matter. In summary, then, though they are not committed to them by the nature of their temporal ontology, many (if not most) four-dimensionalists adopt a theory of natural properties – a certain subset of properties which are not subject to semantic indecision, for which the world offers up a single best candidate. These are the places where, as is often quoted, ‘the world is carved at its joints’. Without such properties, four-dimensionalists would be committed to a theory of semantic indecision ‘all the way down’, so to speak, with the world as a kind of uncarved goo
which we are free to divvy up as we please. The fear with such a picture is not only that such semantic indecision would infect our accounts of causation, laws, etc., but also that our generic notion of ‘property’ would not be explanatorily adequate for the world we find before us. Thus the commitment to the special set of ‘natural properties’. But, as I hope to have motivated, with natural properties comes the threat of vagueness – vagueness that infects the extension of space-time worms and de re identity claims.

It would seem, then, that contrary to her oft-repeated claim, the average four-dimensionalist is hardly better off with respect to vagueness than her three-dimensionalist opponent. Rejecting natural properties threatens to leave her lacking in explanatory adequacy and stuck with an unappealing picture of the world, formless and void, with things like electrons no more real or fundamental than things like cuteness. Yet accepting them lands her with worries of vagueness. And it was claiming she had no such worries – but that the three-dimensionalist did – that served as one of the primary motivations for her position to begin with. Four-dimensionalism is often thought of as a departure from ‘common sense’; but such departures can certainly be warranted if they manage to avoid looming pitfalls like, say, ontic vagueness and vague identity. If such departures are made, however, whilst incurring the same cost as the more garden variety alternatives, then their motivation may well be called into question.

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186 See especially Lewis (1983).
Works Cited


Chapter 7
Ontic Vagueness Without Supervenience

Abstract: In this chapter I argue that most of the standard examples intended to motivate the plausibility of ontic vagueness are undermined by the fact that they introduce proposed vagueness only at the supervenient level. I claim that such supervenience-dependent arguments are insufficient motivation for ontic vagueness and then attempt to sketch out an alternative argument for ontic vagueness that incorporates only fundamental entities. I conclude by addressing various potential worries with the given argument.

Most of the vagueness we encounter, both in ordinary usage and in philosophical examples, seems straightforwardly to be a kind of semantic indecision. Language is an organic, continually evolving tool, and we’re simply just not that specific about what our words mean. As a result, terms like ‘red’, ‘bald’ and ‘heap’ – the paradigm examples of vagueness – lack fully specified truth conditions. We just haven’t decided exactly what those terms mean. Some writers in the literature on vagueness, however, have defended the idea that not all the vagueness we encounter can successfully be diagnosed as semantic indecision.\(^\text{187}\) In defending ontic vagueness – vagueness in the world, rather than merely in representation – they argue that for a certain special set of cases, usually ones that carry greater ontological commitment than the standard examples of vagueness, semantic indecision seems an inadequate description of the phenomenon; the vagueness in question rather seems to be originating from how the world is in and of itself, rather than how we describe it. In this paper I will attempt to show that these arguments are, in general, all of a kind, and that as such they all face a central problem – the reliance on supervenient entities. I will explain why apparent ontic vagueness only at the supervenient level looks insufficient to motivate the idea that the world really is vague (as opposed to just

\(^{187}\) See Rosen and Smith (2004), Hawley (2002), and Colyvan (2001) for some recent examples.
being vaguely described), and thus why the would-be defender of ontic vagueness needs to show that vagueness can be present in the ‘fundamental’ level of reality as well. I will then argue that such base-level vagueness can be demonstrated.

I. The Problem of Supervenience

1. A Sample Argument

Most thought experiments meant to support the plausibility of ontic vagueness run along the lines of the following: base level things are thus-and-so, but it’s indeterminate whether base-level things being thus-and-so is a sufficient condition for some higher-level, supervenient thing to be thus-and-such. It’s vague when certain simples compose a composite object (but the existence and spatio-temporal arrangement of the simples is perfectly determinate). It’s vague whether a particular molecule is part of Mount Everest (but again, there’s nothing vague about what the arrangement of the molecules is). It’s vague at what stage a foetus becomes a person (though, at every instant, it’s determinate exactly what the basic physical make-up of the foetus is). And so on.

Even if they are convincing, such arguments therefore give us a picture of ontic vagueness where things are precise at their fundamental level, with the supposed vagueness arising from indeterminacy as to whether the state of affairs at the fundamental level suffices for a specific state of affairs at a higher level.

What follows is a typical argument for the plausibility of ontic vagueness, taken from Barnes (2005). Consider the case of the atomic element Einsteinium. Einsteinium is something many want to treat with more ontological seriousness than paradigm cases of vagueness like heaps or baldness; elements of the periodic table are

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188 There are, of course, exceptions to this model. E.g., Colyvan (2001) formulates an indispensability argument for ontic vagueness, and Lowe (1994) argues that quantum indeterminacy might be a case of ontic vagueness.

189 If you dislike ‘level’ talk when it comes to ontology, just replace it with talk of ‘fundamentals’.
often classed as natural kinds, places where, as David Lewis would put it, ‘the world is carved at its joints’.\textsuperscript{190} And yet upon examination it seems we can run a Sorites series for Einsteinium in much the same way we can for those more familiar examples of vagueness. Take a continuum of possible worlds containing the subatomic particles which might compose Einsteinium, each differing only trivially from the one that precedes it. At the start of this continuum, these subatomic particles are scattered at the four corners of the universe – they determinately do not form an Einsteinium atom. At the end of the continuum, they are bonded together in the clearest case of an atom you could wish for – they determinately do form an Einsteinium atom. And every possibility in between is represented. But since the worlds differ only marginally from one another, the thought goes, it would look metaphysically arbitrary to select a first world where Einsteinium begins to exist (or a last world where it doesn’t). Atomic bonds form via a process, so ostensibly in some worlds it will simply be indeterminate whether there is any Einsteinium. But if that is the case, then Einsteinium is vague in much the same way baldness and heaps are. Yet that vagueness, due to the ontological commitments we have regarding Einsteinium, doesn’t look satisfactory described as simple semantic indecision. Rather, our intuitions are meant to be directed here toward the world itself as a source of vagueness.

And though they differ in subject matter, most of the other arguments for ontic vagueness put forward in the literature are of a kind – there is no last particle that’s a part of the cloud, no last point where you’re on Everest, no last instant when a thing exists, no single collection of molecules that uniquely composes a living creature,

\textsuperscript{190} The idea, found plausible by those who endorse a ‘sparse’ ontology, is that the world as it is in and of itself doesn’t come ready-made with heaps and baldness, but it does come ready-made with Einsteinium. We carve out the distinction between the bald and the non-bald, whereas the distinction between the Einsteinium and the non-Einsteinium is determined by the mind-independent world.
etc.\textsuperscript{191} The specific content differs, depending on the ontological commitments and particular concerns of the arguer, but the basic form of the argument remains much the same.

2. The Problem

A major objection, however, to all such proposed arguments is that they hinge on the interplay between base-level and supervenient entities. For the typical ontic vagueness argument, the world is perfectly determinate at its fundamental level, and the proposed vagueness only enters in, as it were, ‘one step up’. That is, the purported vagueness arises in whether things being determinately thus-and-so at their base level suffices to make them determinately thus-and-such at a higher, supervenient level. Recall the case of Einsteinium. In that example, the spatio-temporal dispersion of the subatomic particles is perfectly determinate; what is meant to seem vague is whether or not certain determinate spatio-temporal arrangements of subatomic particles are sufficient for an instance of Einsteinium.

The objection, in most cases at least, isn’t to the existence of the supervenient entities in play – those are in good ontological standing. The worry, rather, is the basic thought that as long as the world is fully determinate at every moment in all of its fundamentals (whatever those may be), then there’s no sense in which the world can really be vague, as opposed to just being vaguely described. As long as the base-level facts are determinate, then we needn’t worry about ontic vagueness.

Why? Well, there are several ways of cashing out such an intuition. First, you might be tempted by the idea that in order to truly motivate the idea of ontic vagueness you would need ‘vagueness all the way down’ – vagueness descending to the fundamental level of ontology. Ontic vagueness, if there is such a thing, is a

\textsuperscript{191} See especially Van Inwagen (1990), Tye (1990), Hawley (2001), Lowe (1995)
unique and indeed rather mysterious ontological feature, one which seems irreducible to other, precise features.\textsuperscript{192} As such, it isn’t the sort of thing that should be introduced at the supervenient level. Doing so would give you non-reductive supervenience, which many philosophers find to be nothing more than philosophical smoke and mirrors.\textsuperscript{193} Thus those that find non-reductive supervenience methodologically unacceptable will be highly tempted by the thought that if you want vagueness in your ontology as well as your language, you had better have it extending down to fundamentals.

Secondly, even if you allow for non-reductive supervenience,\textsuperscript{194} you might be persuaded by the idea that a guarantee of determinacy at the fundamental level makes arguments for ontic vagueness which hinge on supervenient entities much easier to resist. As long as the subvenience base is fully determinate, the thought goes, then it becomes more palatable to simply bite the bullet and accept sharp cut-offs for proposed metaphysical versions of the Sorites. So, to go back to the original example, as long as we know that the spatio-temporal dispersion of subatomic particles is perfectly determinate, then we can simply accept that there is, in fact, a first Einsteinium world (or last non-Einsteinium world) in the proposed continuum. Such a cut-off would not be arbitrary, according to this line of reasoning, but rather ‘brute’ – caused by the determinate facts at the subvenience base.

Thirdly, the determinacy of the subvenience base might make it easier to argue that the cases in question are genuine examples of vagueness, but only of semantic

\textsuperscript{192} There is a notable analogy here with the case of semantic vagueness. Some, notably Rolf (1981), have argued that vague terms are irreducible to precise ones. Likewise, though Peacocke (1981) claims that vague terms supervene on precise ones, it is a ‘strong’, non-reductive supervenience which he has in mind. For an interesting discussion of issues pertaining to vagueness and supervenience, see Hyde (1998).

\textsuperscript{193} See, e.g., Lynch and Glasgow (2003)

\textsuperscript{194} As some, e.g., Hyde (1998) seem to think the ontic theorist not remiss in doing. You might here be tempted by the line of thought given in Armstrong (1978) that we cannot provide an adequate (as distinct, perhaps, from complete) description of the world without such entities, but we have no guarantee that they are reducible.
vagueness. The defender of the semantic indecision view can simply say that there are various determinate states of affairs, properties, etc. (depending on what type of ontology she wants to adopt), and it’s just indeterminate which of these our term ‘Einsteinium’ refers to. The philosopher tempted by this tactic can still maintain that Einsteinium is, for example, a natural property; she’ll just claim it’s indeterminate which natural property it is. As long as everything is fundamentally precise, such a response will always be open to the defender of a strictly semantic view of vagueness.

Finally, you might simply be the sort of philosopher who wants to restrict her ontology solely to non-supervenient entities. We can speak about macro-level entities like clouds, cats, and periodic elements, those of this persuasion argue, but the only things which truly exist are the base-level entities, whatever they may be. Of course, if you’re tempted by this sort of restricted ontology then you’ll have no patience whatsoever with arguments for ontic vagueness that require supervenient entities, since you don’t think there are any.

So for various reasons, it looks as though relying solely on supervenient entities to motivate ontic vagueness is insufficient. As long as the world is fully determinate in fundamentals, then arguments for ontic vagueness can straightforwardly be resisted. There seems to be a good deal of intuitive force – cashed out in various ways – behind the idea that as long as everything is perfectly determinate at its base level, then there’s no sense in which the world could really be vague.

The challenge to the ontic theorist thus seems to be this: if she wants to convincingly argue that ontic vagueness is possible (or, at least, that there is

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This response will work better for some ontological commitments than for others; it’s difficult to run it for an analysis of natural properties in terms of, e.g., universals (unless you want a lot more universals kicking around than most theories have). Ontic theorists have responses to it, as well – but the point here is that it only exists (and will always be a tempting option) insofar as a precise subvenience base underlies supervenient ontic vagueness.
conceptual room for the notion), she needs to provide an example of ontic vagueness without involving supervenience. That is, she needs to outline a case that we intuitively want to describe as a case of ontic vagueness that features only base-level ontology. What follows is an attempt to meet this challenge.

I will attempt to do so by describing a possible and/or conceptually coherent scenario that features only non-supervenient (i.e., base-level) entities, and yet, without begging any questions, looks most plausibly described as ontically vague. As an important caveat: unsurprisingly, this will involve some rather heavyweight metaphysics, and thus depending on how much you want to restrict the space of possibilities you may not think it’s possible. I should note, therefore, that I am far more concerned with arguing for the conceptual coherence of ontic vagueness than for the possibility of it. I want to contend that ontic vagueness is an ‘option on the table’, and must be taken seriously in metaphysical debates. Establishing this requires that ontic vagueness be conceptually coherent; but conceptual coherence, importantly, is weaker than possibility.196

It’s important to mention here that the attempt to situate vagueness in non-supervenient or ‘simple’ ontology is by no means novel. Neil McKinnon (2003) and Katherine Hawley (2004) have both argued for the coherence of vagueness at the level of mereological simples. McKinnon gives an argument that, if simples are extended, then we have no reason to assume that their boundaries cannot be vague. Hawley elegantly draws analogy between issues of vagueness in composition and issues of vagueness in simplicity, arguing that the coherence of borderline instances

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196 Metaphysics is replete with examples of positions which take their alternatives to be, strictly speaking, impossible, and yet engage seriously with them and regard them as live options for debate, because they are in some sense or other ‘conceptually coherent’. Consider, e.g., the person who holds a bundle-theory ontology, and thinks such metaphysical facts are necessary – she would think that the defender of substance-attribute espouses an impossible position, but would still engage seriously with it.
of either stand or fall together. She argues that we should think it possible (due, perhaps, to the indeterminacy in location pointed to by quantum mechanics) that something be a borderline case of a simple.

The distinction between the arguments presented in this paper and those of both McKinnon and Hawley, however, is that those given here do not presuppose the vocabulary of vagueness within the examples themselves. That is, in none of the descriptions given is it stated ‘and it could be indeterminate whether...’, etc. The scenario is merely described, and then motivations are given that the most plausible way of characterizing such a scenario would be as one of ontic indeterminacy.

I think such topic-neutrality within the examples themselves is crucial, methodologically, in order to avoid begging questions against the opponent of ontic vagueness. In order to establish non-supervenient ontic vagueness, we must be able to set up examples that do not themselves require vagueness vocabulary; only after the examples have been offered should we argue that the scenarios are best described as being ontically vague. Ontic vagueness is controversial that it can’t simply be asserted as part of an example – it must be (topic-neutrally) motivated.

II. The Case

1. Preliminary Stipluations

Suppose we have a world containing two fundamental ontological kinds: atomic simples and stuff. Simples are in some sense ‘ontologically prior’ to stuff, in that stuff is created when simples stand in causal relations to one another. Importantly,

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197 Not that the defender of ontic vagueness couldn’t equally level a question-begging charge at her opponent who straightforwardly denies her claims of indeterminacy. It’s just that, if she’s going to convince anyone but the already convinced, the ontic theorist needs to invoke neutral examples that motivate without presupposing.

198 The first example given will be one strikingly similar to examples like the Einsteinium case, except with the supervenience ‘surgically removed’ as a colleague put it – this is a dialectical ladder I’m employing in order to make salient the ideas in question by keeping close to a more familiar argument form. Once the ideas are in place then, hopefully, that ladder can be kicked away, as I’ll argue later.
however, stuff is in no way reducible to simples, or to simples and their respective causal relations; nor does it supervene on them. It is in some sense ‘emergent’.199

So stuff does not supervene on simples – it is caused by simples standing in causal relations to one another, but once stuff exists the facts about it don’t depend on simple-facts (i.e., there could be two worlds, or two regions within the same world alike in simple-facts but differing in stuff-facts; both inter and intra-world supervenience fail). Despite the failure of supervenience, however, we know that we get stuff if and only if simples stand in causal relations to one another.200

And, finally, in this world, time is gunky. That is, there are no smallest, indivisible units of time (no ‘instants’). There are only temporal intervals.201 For every interval of time you select, no matter how small, it can be divided into infinitely many sub-intervals, which can themselves be divided into infinitely many sub-intervals, and so on – division of a region of time will never ‘bottom out’ at a basic unit of time. Thus all time is in some sense extended (‘intervals all the way down’).

So, in summary, the key stipulations about this world are as follows:

(ES) Stuff is emergent

(GT) Time is gunky

2. The Problem

a. A Contention

In the subsequent discussion, I will attempt to motivate a puzzle of ontic indeterminacy that hinges on the following contention:

199 I set the subsequent case up using emergence because I think it’s a particularly vivid example, but it’s not at all essential to my argument, as I’ll explain later. So if you don’t like emergence, that’s fine, the argument can run just as well without it.
200 For a good discussion of the metaphysics of emergence (though slanted toward its philosophy of mind applications) see O’Connor and Wong (2005).
201 If you are suspicious of talk of ‘intervals’ in relation to gunky time, just replace all mention of intervals with talk of temporal ‘regions’. Nothing much should be lost in translation.
(DE) In order for emergence to be determinate, it must be instantaneous. Why think (DE) is plausible? Well, it seems that if emergence takes place at an instant, then we needn’t worry about the ontological status of the emerging thing as it ‘comes to be’. If a thing’s emergence is instantaneous, then there simply is no as it comes to be, because its coming to be is not temporally extended. Emergence can be an ‘all or nothing’ phenomenon.\textsuperscript{202}

Let me briefly explain this rather broad-brush notion of coming to be. I understand coming to be as an event in temporal ontology which underlies a change in existence facts. A change from the non-existence of F to the existence of F is not brute; there is an event – a coming to be – in virtue of which the change occurs.\textsuperscript{203} Alternative glosses for an event of coming to be might be a genesis or an event of beginning. Hopefully, it’s a notion that’s intuitive enough in its own right; it will be taken as a metaphysical primitive in the discussion that follows.

Now consider how the case of coming to be is disanalogous to that presented above if emergence is temporally extended. If, rather than occurring at an instant, emergence takes place over an interval, then the process of emergence is extended in time, and thus there is a temporally extended process of coming to be. But if a thing’s coming to be is extended in time, then we do face the question of what its ontological status is as it comes to be. My claim is that the best answer to this question – the most plausible way to characterize a thing’s temporally extended coming to be – is ontological indeterminacy.

Ontological indeterminacy seems an apt description because either determinate status – that the thing determinately does not exist as it comes to be or

\textsuperscript{202} There may, of course, be issues as to whether to model the change using closed or open intervals, where to situate the point of emergence, etc; but none of these seem likely to generate any puzzles of indeterminacy.

\textsuperscript{203} That’s not to conflate the coming to be of F with the cause of F, however.
that it determinately does exist as it comes to be – appears incorrect. As a thing comes to be, we cannot say that it determinately exists, for this would imply that it has already come to be. But nor can we say that it determinately does not exist, since it seems that the world is different, ontologically, as a thing comes to be than it was before it was coming to be, when that thing simply did not exist. This difference is highlighted by the fact that we can truly and meaningfully make non-trivial predications of the thing as it comes to be in a way that we could not when it was straightforwardly non-existent.204

But if we cannot say that a thing (determinately) doesn’t exist as it comes to be nor that it (determinately) does, then the clear option seems to be that it is simply indeterminate whether that thing exists. Things are not, as it were, ‘metaphysically settled’ one way or the other with respect to the thing’s existence – as it comes to be it is in a state of indeterminacy between two poles (existence and non-existence).

Nor is such an indeterminacy simply a fact about how we use our language. It’s not that we haven’t fully described the scenario, or that the terms involved don’t have fully specified meanings. It is, rather, that in such a case there can be no way of correctly filling in the details that would eliminate the indeterminacy.

b. The Example

Now return to the world described previously. Suppose that two simples not standing in causal relations to one another change such that they do stand in causal relations to one another. For the sake of simplicity, call it not-C when they don’t causally interact and C when they do. We can then select a closed interval of time such that things are not-C at the start of the interval and C at the end. And if we select

204 E.g., ‘x is coming to be’, ‘x is undergoing a process’, ‘x is changing’, etc. It’s important to note that this is not an attempt to ‘read ontology off language’ (see Heil (2004) for a good rant about this practice); it is, rather, pointing out that linguistic practice seems to support a pre-existing, prima facie ontological intuition (that things are different as something is coming into being than they were when it simply didn’t exist).
an interval meeting these criteria, then we know that the change from not-C to C has occurred during the course of that interval.

Thus, from the stipulations about this world we know that stuff will have emerged during the course of this interval (as stuff emerges if and only if things are C, and the change from not-C to C occurs in the interval). But we also know that, since in this world time is gunky, emergence cannot have taken place at an instant (since, quite simply, in gunky time there are no instants). Thus we know that emergence is, in some sense, temporally extended.

Indeed, it should be noted that this is how advocates of gunky time claim an advantage over pointy time in solving paradoxes of motion and change (e.g., Zeno’s Arrow) – everything is temporally extended, so time really is a ‘motion picture’ rather than simply a series of stills (see Arntzenius 2004). Everything that occurs in gunky time is dynamic, a temporally extended process. So if emergence occurs in gunky time, there will be a temporally extended process of coming to be.

Yet, as argued above, if emergence is extended in time, then emergence cannot be determinate. If a thing’s coming to be is temporally extended, then its ontological status will be indeterminate during its process of coming into being. In a temporally gunky world such as the one in question, emergence will thus give rise to ontological indeterminacy. During the temporally extended process of emergence, it will be indeterminate whether the emerging thing exists. Thus the combination of (DE) and (GT) will straightforwardly yield an ontic indeterminacy.

There will, of course, be no unique interval that we can single out as the locus of the ontic indeterminacy, the exact when where stuff’s existence is indeterminate. But this does not seem problematic for the case in question. So long as we know that

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\[205\] ‘Exact when’s are, in general, hard to pin down in gunky time – you might argue they’re just a case of reference failure.
emergence is temporally extended – and if time is gunky we know it must be – then we know that this emergence gives rise to ontic indeterminacy.

c. Some Alternatives

But what if you don’t like emergence? Not a problem – emergence isn’t at all essential to the example. The example above used the (emergence-specific) principle (DE) combined with (GT) to motivate an ontic indeterminacy, but the key contention here is that any temporally extended process of coming to be will yield an ontic indeterminacy. The same arguments put forward in support of (DE) could be used to motivate the more general:

(DC) In order for coming to be to be determinate, it must be instantaneous. The central worry of ontic indeterminacy focused, not on emergence, but on a generic process of temporally-extended coming to be (such that, during that process, it looks incorrect to characterize the thing coming into being as determinately existing or as determinately not existing). But these motivations will support not just (DE), but (DC) as well, and either principle combined with (GT) will yield an ontic indeterminacy. Thus any coming to be of fundamental ontology situated in gunky time will serve the same purpose as the above example.

Some possible alternatives include: an ontology of extended simples where simples can undergo fission or fusion to create new simples; particle generation (where two particles pass by one another under the right circumstances and generate a third); and worlds where tropes are the fundamental entities, objects are nothing more than bundles of tropes, and objects can generate new properties. Situate any such process in gunky time and you’ll get the same ontic indeterminacy.

206 This principle, in fact, seems to be one of the root motivations behind certain puzzles of vagueness in persistence. Suppose that I want to know when a fetus becomes a person; if, as some have argued, I think it might be vague when the fetus instantiates the relevant person-related properties, then I would think it’s vague when that person comes to be. In order to think it’s determinate when that person comes into being, I would have to think that there’s a first instant at which the fetus satisfies the person criteria, and that would be the instant of the fetus’ coming to be.
coming to be of fundamentals in gunky time, and the same puzzle of ontic indeterminacy will arise.

III. Objections

1. Open Intervals

An objection to the argument above might be that, rather than being a puzzle about coming to be in gunky time, it is simply a gunky version of the familiar (though needless) worry about open intervals. We can define intervals in gunky time, just as we can in pointy time.\(^{207}\) Though the idea of such intervals can seem somewhat counterintuitive, there is nothing inherently problematic about open intervals as such. Why not just think that we can define an interval for the region of time where coming to be has not occurred, do the same for the region of time where it has, and be done with any talk of indeterminacy?

My reply here is to agree that open intervals themselves certainly don’t lead to ontic indeterminacy, and nor should the equivalent notion set in a gunky framework, but also to make the further claim that the puzzle at hand is not a mere confusion about open intervals. In pointy time, we can define open intervals to model a change – specifically, an emergent change or change of coming to be – and still maintain that the change in question is perfectly determinate. This, however, is a feature of pointy time (or, alternatively, atomic time); when we construct open intervals in pointy time we know that these intervals converge on a point, even though there may be no first point, no last point, etc. With gunky time, of course, the case is disanalogous; the intervals defined cannot converge on a point, simply because there are no points. Whatever we converge on, we know it will be temporally extended because gunky

\(^{207}\) With the exception that the closed/open distinction seems to have no bearing, at least on a straightforward interpretation of gunk – see Arntzenius and Hawthorne (2005).
time does not permit of any features that are not temporally extended. And the difficulty, for the case in question, is generated not by there being no first or smallest interval of an emergent thing, there being no ‘exact when’ of change, or other such problems – rather, it comes about because we know that coming to be, when situated in gunky time, must be a temporally extended process. It cannot be instantaneous because there are no instants. It is that temporal extension of coming to be, not any puzzle about intervals, which gives rise to the claim of ontic indeterminacy.

The argument does, admittedly, rely on the Aristotelian assumption that coming to be is an event. That is, things do not simply pop into existence as a matter of brute fact. There must be an event of coming to be to underlie a change in existence facts. That event is allowed to be instantaneous, of course – just not when it’s situated in gunky time.

It might be protested here, though, that the best translation of instantaneous coming to be events into a gunky template is the ‘brute’ model of change in existence facts (i.e., there are intervals for existence and non-existence, but there is no event of ‘coming to be’), rather than the model of a temporally extended process of coming to be. I see no reason to accept this, however, that does not beg questions against the defender of ontic vagueness (i.e., no reason other than ‘well, the alternative leads to ontic vagueness’). In general, translation of static events at instants into a framework of temporal gunk yields temporally extended, dynamic events – just think of the gunky response to Zeno’s Arrow, mentioned previously. To argue that there need be no process of coming to be in gunky time therefore seems to be the closest translation, not of an instantaneous coming to be, but of the brute model of change in existence facts where there is no event of coming to be. Allowing, however, that

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208 In contrast, on a brute model there would simply be an interval where a thing, x, doesn’t exist, and then another interval where it does. There is nothing in temporal ontology – no event of coming to be – in virtue of which the change in existence facts occurs, and the change is thus ‘brute’.
(instantaneous) coming to be events are at least possible, it looks like the best translation of them into a gunky framework is as temporally extended events. Thus there seems to be no non-ad hoc reason to replace an event with a non-event (the brute model), and the argument thereby remains in good standing.

2. Whiteheadian Construction of Points

The previous style of objection might be pushed further, however, through the incorporation of Whiteheadian ‘nested-intervals’. Whitehead (1919) demonstrated that, through a descending series of nested intervals, we can model points within a gunky framework.\(^ {209} \) Using the Whitehead model, then, we can demonstrate for the case in question a point-like region where the change from not-C to C occurs, and thus where emergence occurs. Shouldn’t this be sufficient to rule out indeterminacy?

The reason I think Whiteheadian point construction are not sufficient to eliminate the indeterminacy in question is that they are essentially derivative or constructive. That is, they’re not a part of a gunky world’s ontology. As such, a Whiteheadian model can only show us the counterfactual claim: this is the point where the coming to be would occur were time pointy.

Let me elaborate. In worlds where time is pointy or atomic, change can be derivative feature of position over instants, or something along those lines. But, in contrast, in worlds where time is gunky change must be taken as a primitive – there are no units of time for it to be derivative over. This primitiveness cannot be amended by the introduction of Whiteheadian point models, because these models are artificial constructions not really included in the ontology of a gunky world. As such, they cannot serve to underwrite any fundamental process like change. And thus, as

\(^ {209} \) See van Benthem (1983) for an excellent discussion.
argued, the most they can demonstrate is the point where coming to be would occur if the world were pointy.\textsuperscript{210}

3. Gunk and Indeterminacy

It might be objected that the simple introduction of a gunky model for time causes us to lose grip on the distinction we usually draw between determinate and indeterminate changes. But if this is the case, it should not lead us to assume that changes in a gunky framework are indeterminate. We should rather conclude that either a gunky model is inadequate to account for distinctions that need to be made, and thus ought to be rejected, or that the vocabulary of determinacy and indeterminacy is simply misapplied when it comes to dealing with changes that occur in a gunky set-up.

I don’t, however, think that either of these options are warranted here, because I think that a gunky model is perfectly adequate for capturing a notion of both determinacy and indeterminacy, and further that some (but by no means all) changes in a gunky framework ought to be characterized as indeterminate. We can, it seems, easily model a determinate change within a gunky framework – indeed, I think almost any change that does not involve change in existence facts will be of this sort. Consider, from the original example, the change from not-C to C (regardless of any emergence that might attach to it); such a change will be perfectly determinate, because we can model a maximal region of time when things are not-C, a maximal region of time when things are C, and nothing further seems needed to rule out indeterminacy. The considerations pushing toward indeterminacy outlined in §II.2.a simply don’t apply, because only the change in existence facts characteristic coming

\textsuperscript{210} Or, a bit more carefully, the point where the change occurs in the nearest possible pointy world.
to be-style changes generate the pull toward indeterminacy. So it looks as though we can model determinate changes perfectly well. We will, as previously noted, have to give up the notion of an ‘exact when’ of change when operating in a gunky framework – things occur in intervals, and that’s about all that can be said; there is not such thing as the unique interval of a change – but I doubt, given the above considerations, that this causes us to lose grip on a distinction between indeterminacy and determinacy.

Nor does gunk in general generate worries of indeterminacy. An analogous scenario to the coming to be worries for gunky time might be a gunky object situated in gunky space (no smallest parts for the object, no smallest points for space). In such a case, you might wonder whether a similar argument for indeterminacy would apply – if an object’s boundaries are spatially extended (since everything is spatially extended in gunky space) and there is no last point where the object ceases to exist (since there are no points), does that motivate the claim that the object has indeterminate boundaries? I think not. The motivations toward indeterminacy as outlined in §II.2.a would apply in the object case only if we had reason to think that an object’s boundaries cannot be part of the object itself nor part of the object’s spatial surroundings. The push toward a verdict of indeterminacy in the case of coming to be only comes because we want to say neither that the thing coming to be determinately does not exist, nor that it determinately does. Indeterminacy looks to be the proper characterization only when neither polar verdict is applicable. But this is where the spatial case and the temporal case become disanalogous. We can much more easily, it seems, accept that an object’s boundary – even a spatially extended one

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211 This is only the case, of course, if you assume a particular metaphysics of properties. If you characterize properties as object-specific tropes, then all changes in properties will be changes in existence facts, and thus will bring about a process of coming to be if they are situated in gunky time.
– is a part of the object itself than we can accept that something already exists (or, alternatively, definitely doesn’t exist) as it’s in the process of coming into being.\footnote{Also, a ‘brute’ model of change in the spatial case (there’s a defined region where the object exists, a defined region where it doesn’t, and that’s the end of the story) might well seem more palatable than in the temporal case.}

Thus gunky frameworks alone do not yield indeterminacies, nor do they underwrite the distinction between indeterminacy and determinacy. It is the unique combination of gunky time and an event of coming to be that cohere to generate an ontic indeterminacy.

4. Indeterminacy vs. Vagueness

A final clear objection here – and, I think, a good one – is that the argument as it stands, even if successful, doesn’t establish the possibility and/or conceptual coherence of non-supervenient ontic \textit{vagueness}. It can, at best, demonstrate non-supervenient ontic \textit{indeterminacy}. But indeterminacy and vagueness are, of course, two very different things.

My response here is first that this is absolutely correct – without doing further work, the above passages, even if successful, serve only as support for non-supervenient indeterminacy, not non-supervenient vagueness. The question thus becomes: how, if at all, does the example provided (if we grant that it can support the possibility and/or conceptual coherence of ontic indeterminacy) tie in to the dialectic of the proponent of ontic \textit{vagueness}?

Here there are a number of things the defender of ontic vagueness might say. She might argue that, though the above example does not demonstrate non-supervenient ontic vagueness, motivating an indeterminacy is sufficient for her purposes. If we take vagueness to simply be a sub-species of indeterminacy, then there seems to be no good reason to suppose that the relevant kind of ontic indeterminacy is possible, but that the analogous form of ontic \textit{vagueness} is not.
What would be so special about vagueness, per se, that would preclude it, though indeterminacies in general are allowed? Moreover, even if an argument was forthcoming to the effect that the special kind of indeterminacy we call vagueness can’t be instantiated at the fundamental (i.e., non-supervenient) level, it seems that the possibility of ontic indeterminacy of any form in base level ontology undercuts the motivations for resisting the arguments specifically for ontic vagueness that featured supervenient entities.

Recall that the motivations for resisting supervenient arguments for ontic vagueness were of the conditional form ‘if everything is determinate at its fundamental level, then . . .’. The presence of a base-level indeterminacy cancels out that antecedent, and thus undermines the arguments against using supervenience to motivate ontic vagueness.

Another option, however, would be to argue that, perhaps despite appearances, the case in question does in fact support a claim of non-supervenient ontic vagueness. The most straightforward way of doing this would be to extract a Soritical principle for the case in question (or for another, similar case). Admittedly, however, I see no clear way of doing this. One obvious problem in creating a Sorites series is that Soritical principles are generally of the form ‘if x is F, then x+1 is F’. But because in gunky time there are no basic units, the notion of a successor becomes extremely hard to formulate, and thus a Sorites doesn’t seem forthcoming. There might perhaps be room for the defender of ontic vagueness to select intervals of an appropriately small size in order to create a plausible version of a Sorites series; were she to do so, and were she to agree with Patrick Greenough (2003) that Sorites-susceptibility is a sufficient condition for vagueness (as I think she should), then her problems are
solved. Because the units her series involves are not basic, however, there will always be room to doubt whether the series is compelling.

A more promising alternative here, I think, would be to claim that, though Sorites-susceptibility is sufficient for vagueness, it is not necessary. We can typically construct a Sorites series in cases of vagueness (and when we can do so we know we have a case of vagueness on our hands), but this case is far from typical. Perhaps when we are dealing with cases that lack basic units, we should not expect to be able to formulate a Sorites, but nor should we think that this precludes the case in question from being an instance of vagueness. We might, instead, take another of the paradigm features of vagueness\(^\text{213}\) -- namely, the presence of a borderline region (i.e., ‘no sharp boundaries’) -- to also be sufficient, at least in cases such as these, for vagueness.\(^\text{214}\) Were we to make such an allowance then it seems that the case in question would certainly count as an instance of ontic vagueness. The problem arises because – due to the temporal extension of coming to be – we cannot draw a sharp division between an emergent thing’s existence and non-existence. There is, as it were, a ‘borderline region’ – the temporal interval where the thing is in the process of emerging – where it is neither fully existent nor fully non-existent. And thus if the presence of a ‘fuzzy region’ of borderlineness is counted, at least in cases where perhaps Sorites series cannot be constructed, as sufficient for vagueness, then the case in question will count as an instance of ontic vagueness.

IV. Conclusion

In summary, then, I have argued that standard arguments for ontic vagueness share a common flaw – the introduction of vagueness only at the supervenient level – and as such they are insufficient to motivate the coherence of ontic vagueness. The

\(^{213}\) See Keefe and Smith (2002)

\(^{214}\) I think this idea is equally plausible in other, more familiar cases of vagueness that lack specified units, such as the color spectrum.
apparent difficulty for the would-be ontic theorist is not insurmountable, however, because ontic vagueness can also be argued for purely through use of fundamental ontology. Any process of coming to be in base-level entities situated in a framework of gunky time will straightforwardly yield an ontic indeterminacy (which can then be finessed, I think, into supporting the special kind of indeterminacy we call vagueness). I therefore contend that ontic vagueness can be demonstrated at a fundamental level, and thus that at least one major challenge – the worry of supervenience – facing the would-be defender of ontic vagueness can be met.
Works Cited


Chapter 8

Bearing the Burden: 
Methodological Issues in the Ontic Vagueness Debate

Abstract: In this chapter I discuss the two most obvious responses to arguments for ontic vagueness via a proposed ‘metaphysical Sorites’ – namely, that the case is either not in fact metaphysical or not in fact a Sorites. I examine the motivations for such responses, and argue that in most cases they are not sufficient to render those responses sufficiently warranted.

Note: Most of the objections that I deal with in this paper will have been mentioned, at least briefly, in previous chapters. This chapter, however, attempts both to evaluate them more thoroughly and to deal with the dialectical situation as a whole (rather than addressing individual objections in isolation).

Suppose we are presented with a standard argument for ontic vagueness – a putative ‘metaphysical Sorites’. That is, we are given a version of the classic Sorites paradox where the apparent locus of vagueness lies in the non-representational world. Given that most philosophers are very keen to avoid commitment to ontic vagueness, they will naturally be likewise very keen to avoid commitment to such paradoxes – which, if they can be argued for persuasively, would effectively demonstrate the existence (or at least possibility of) ontic vagueness. In this paper, therefore, I will examine the two most straightforward strategies for carrying out this avoidance – notwithstanding the standard metaphysicians’ response, which is ‘your series ranges over Xs, but I don’t believe in Xs!’: By exploring some of the dialectical issues surrounding them, I shall argue that these responses are unmotivated.

Unsurprisingly, the two most obvious responses to a putative ‘metaphysical Sorites’ are on the one hand that it is not in fact metaphysical and on the other that it is not in fact a Sorites. The first option is the strategy of ‘semantic ascent’, which attempts to argue, for a proposed case of ontic vagueness, that the vagueness in question is in fact located in representational content after all. The second is the
(quite common) assumption that if the subject matter is ontic, rather than representational, there will be a sharp but unknown cut-off point in the proposed series. I will examine each of these options in turn, and then attempt to sketch out replies to them.

In doing so, I will not be arguing for the existence of ontic vagueness, but rather for conceptual room for such a notion. Whether or not you think there is ontic vagueness will be, I think, almost entirely dependent on metaphysical commitments elsewhere. But there are a wide variety of metaphysical commitments which most philosophers find entirely coherent in and of themselves, even if they do not endorse them, which I argue lead to ontic vagueness. The basic thought, then, is that if you think such commitments (natural properties and temporal gunk are prime examples) ought to be theoretical options in metaphysics, then you should think ontic vagueness should be as well.

1. Semantic Ascent

An obvious reason why we might be warranted in rejecting arguments for ontic vagueness is that all the putative ‘metaphysical’ versions of the Sorites are not really metaphysical at all. In all such proposed cases – though the ontic theorist claims they concern clear worldly indeterminacy – we can always ‘semantically ascend’ to demonstrate that the vagueness really arises, after all, from a mere semantic indecision.

Take the example of the proposed Sorites series meant to arise from commitment to universals corresponding to natural properties like the periodic element Einsteinium.\footnote{I will only be evaluating the semantic ascent option for ‘sparse’ universals, since that is the example of ontic vagueness which I think is the strongest, but I suspect similar motivations can be leveled for other proposed examples of ontic vagueness. Of course, the ‘semantic only’ theorist can always just reject the ontology in question, but this response is particularly addressed to those who want, as it were,} If we believe in universals, the argument goes, and think that
Einsteinium is a likely case for a universal, then Einsteinium has a metaphysical robustness in a way that paradigm cases of vagueness like redness and baldness do not. Yet Einsteinium can be shown to exhibit Soriticality in much the same way these more familiar examples of vagueness can. Just take a series of possible worlds containing the subatomic particles which might compose an Einsteinium atom, with each distribution of particles differing only marginally from its predecessor. The first world in this series determinately does not contain Einsteinium, and thus no Einsteinium universal (the subatomic particles are scattered at the four corners of the universe, say), and the last world determinately does (the particles are bonded together in the clearest case of Einsteinium you could wish for). It would look arbitrary, the thought goes, to maintain that there’s a sharp cut-off in this series between the Einsteinium worlds and the non-Einsteinium worlds (and thus between the worlds containing the specified universal and those lacking it). But the resulting vagueness, because of Einsteinium’s ‘metaphysical robustness’, seems to be a fact about metaphysics, not a fact about language. If we’re committed to natural properties – places where, as Lewis would put it, ‘the world is carved at its joints’ – and characterize them via an ontology of universals, then surely this is an example of ontic vagueness.

Yet the semantic theorist tempted by the ‘semantic ascent’ response begs to differ. We can maintain a commitment to universals, she argues, without any worry of ontic vagueness, so long as our commitment to universals is properly understood. The vagueness in question can still be understood as representational vagueness if we \textit{semantically ascend} – that is, if we situate the vagueness back in

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to ‘have their cake and eat it too’. And the main point here is to argue for conceptual room for ontic vagueness, so just rejecting the ontology (so long as you think it’s coherent) won’t count against that.
representational content by showing how it can still be a matter of semantic indecision.

We can do this by arguing that commitment to naturalness in a certain area does not commit us to the existence of a *unique* natural property (in this case, a universal); just because Einsteinium is natural does not mean there is a single universal – *the* universal of being Einsteinium – that all and only the things which are Einsteinium instantiate. Rather, there are a cluster of universals – Einsteinium`, Einsteinium```, Einsteinium````, etc. – which are all very similar. The vagueness of the case in question, however, has nothing to do with these properties themselves (independently of how we represent them, that is), but arises instead from the indeterminacy in *which* of these universals (or groups of universals) our word ‘Einsteinium’ refers to. We can thus ascend back to the semantic level to account for the apparent vagueness without compromising the naturalness of the properties in question.

This strategy becomes problematic, however, when we examine it more closely. There are two clear ways of interpreting it, and neither, I contend, will solve the problem posed by the ontic theorist. The first method would be to maintain that there are a certain set of universals – Einsteinium`, Einsteinium```, Einsteinium````, etc. – which are each sufficient for the existence of Einsteinium; that is, any of these properties can count as the truthmaker for ‘there is some Einsteinium’. So there is a ‘special set’ of perfectly natural properties that count as Einsteinium. However, it seems that the worry about vagueness can simply reiterate at the boundaries of this group of properties, this ‘special set’; or, to put it differently, it seems there could be vagueness in what counts as a sufficient condition, at the level of the subatomic particles, for the instantiation of *any* (Einsteinium-related) natural property. Consider
again the continuum of worlds. Surely it would be just as metaphysically arbitrary to suppose that there is a sharp cut-off between the worlds containing a universal – *any* universal of the Einsteinium set – as it would be to suppose there is a sharp cut-off between the worlds containing no Einsteinium and those containing the Einsteinium universal. Denying uniqueness for Einsteinium’s instantiation seems only to have pushed the worry back a step.

But the theorist tempted by the ‘semantic ascent’ option might here respond that the above worry hinges on a restricted view of natural properties. The worry is essentially one of higher-order vagueness. We began by assuming that the instantiation of (a unique) universal stopped when things stopped being Einsteinium. Then, it seems, we shifted to a more expansive view wherein the instantiation of any of a set of universals stopped when things *determinately* stopped being Einsteinium. But this, of course, still invites vagueness because it can be indeterminate whether things have determinately stopped being Einsteinium. So the clear option seems to be that meet this ‘spreading problem’ by expanding the range of natural properties even further. There is a universal to represent the particles being D* Einsteinium, and likewise there is a universal for D* not-Einsteinium. And every possibility in between is represented as well. Thus we can fully accommodate the spread of vagueness in Einsteinium in terms of natural universals, and simply maintain that it’s indeterminate which of these universals ‘Einsteinium’ picks out.

Admittedly, this response does fully solve the problem via semantic ascent. The worry, however, is that it’s managed to throw the baby out with the bathwater. On such a picture, with natural properties corresponding not only to D* Einsteinium but also to D* not-Einsteinium, we seem to lose grip on the very

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216 I take ‘D*’ to mean ‘determinately to the infinite degree’. I don’t actually think determinacy admits of degrees, but ‘D*’ is a notion that’s familiar from the literature, so I’ll employ it here for the sake of argument.
motivations we had for going in for an ontology of universals in the first place. Universals are meant to be joints in nature, places where the world, not us, is drawing the distinctions. And a fundamental intuition behind such a distinction is that, for example, subatomic particles scattered at some distance from one another do not instantiate such a natural property (at least not qua element), whereas subatomic particles bonded together to form an atom do. That atom is meant to be something else entirely, a different kind of thing, than those scattered particles. This distinction is wholly lost if we multiply universals the way the above response suggests.

So the dilemma for the semantic ascent response appears to be this: either we retain the worry of ontic vagueness or we lose our grip on naturalness. Neither looks appealing. There is, though, another straightforward option for the semantic theorist tempted by the semantic ascent model – she can simply deny, point blank, that properties like Einsteinium correspond to universals. They may have seemed like prima facie plausible candidates for universals, but recent science has shown that they are less fundamental than we thought. In the end, they are more like redness and baldness, and thus their vagueness is as well.

I am not sure, however, that this ontological restriction is warranted. First, why might the semantic theorist be justified in assuming that properties like Einsteinium are not, in fact, natural? One obviously question-begging response which she cannot appeal to is that they are subject to vagueness. Even if we accept that, in the present debate, the burden of proof is on the would-be ontic theorist, it can’t be the case (pending more substantial argument, that is) that the presence of vagueness in a certain type of ontology is automatic reason to think that that ontology is in fact representational rather than truly natural. Such a position would clearly beg the question again the ontic theorist by making her burden of proof unanswerable.
There are other reasons, though, why the semantic theorist might argue against the candidature of properties like Einsteinium for universal-hood. Perhaps they are not fundamental enough. Fair enough, they very well might not be. But this is a concession made in the arguments themselves. The dialectic simply runs: ‘suppose Einsteinium is natural (but if it’s not, take some other property which is natural and stick it in instead; nothing hinges on the particular example)’. The argument should easily reiterate whatever property we choose. But the objection might be not merely that Einsteinium is not fundamental enough, but that it’s not absolutely fundamental. Perhaps the thought is that the only things which are truly natural are those which are ontologically basic – i.e., non-supervenient or ‘simple’. And if we restrict our notion of naturalness to include only the ontologically simple entities, it’s hard to see how puzzles like the Sorites for Einsteinium could be motivated, since they rely on the presence of an underlying subvenience base which is gradually changing in order to motivate their claims.

There are two responses to such a line of thought. One is the Armstrong-style angle, which worries that an ontology devoid of non-reductively supervenient entities (such as structured universals, which are said to be composed of, but not reducible to, basic universals) is too impoverished – it risks being unable to account for the full ontological complexity of the world, as well as rules out the possibility of so-called ‘onion worlds’, where nothing is ever fully fundamental. Regardless of these worries, however, I see no reason to suppose that ontic vagueness could not be present in non-supervenient ontology as well, as I have argued previously. Thus

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217 See Barnes (2005) – reprinted as the sparse properties subsection of chapter (5) of this thesis
218 See Armstrong (1978), but also Williams (forthcoming) for skepticism about the possibility of ‘onion worlds’
219 See chapter (7) of this thesis. Once ontology has been restricted to non-supervenient entities, however, I cannot see how the semantic ascent response could be motivated. Semantic ascent, then, is not an option for all forms of ontic vagueness.
merely restricting ‘natural’ ontology to include only fundamentals and semantically ascending does not acquit the semantic theorist of worries of ontic vagueness.

II. Sharp Cut-Offs

The other option then, when encountering puzzles of ontic vagueness, is to deny that they are, in fact, cases of vagueness. More often than not, when philosophers are presented with an apparent ‘metaphysical Sorites’ – for some non-representational \( \Phi \), a series of cases beginning with determinately \( \sim \Phi \) and ending with determinately \( \Phi \), but with no clear point where the change from \( \sim \Phi \) to \( \Phi \) occurs – they tend, either implicitly or explicitly, to adopt the stance that there is a fact of the matter about precisely where the change occurs. It’s just that we don’t know what that fact is. Despite the charge of ‘metaphysical arbitrariness’, it seems to many a good assumption to think that at an exact point in the series the world just makes it the case that things are no longer \( \sim \Phi \) and have now become \( \Phi \). That is, it seems a good assumption that there is a sharp but unknown (perhaps unknowable) cut-off point for the putative Sorites series being entertained.\(^{\text{220}}\)

Such a position, when applied to proposed examples of ontic vagueness, has an obvious analogue in treatments of representational vagueness. The view that classic Sorites series have a sharp but unknown/unknowable cut-off point is familiarly the position espoused by epistemicists. They argue that classically vague predicates like bald, heap, etc. have fully determinate extension and fully precise truth conditions, so that if you were to formulate a Sorites series involving such a predicate – e.g., for bald, a series of men, starting with one with no hair and ending with one with 1,000 hairs, going up by increments of one hair – there would be a precise

\(^{\text{220}}\) Some prime examples of metaphysical theories which take precisely such a line are Ned Markosian’s (1998) theory of ‘brute’ composition, the Lewis/Sider account of ‘joints’ in nature and natural properties, and Armstrong’s theory of the instantiation of universals, though only Markosian explicitly recognizes the apparent Soriticality of the entities he maintains are ‘sharp’. 
number of cases in the series that counted as falling under the extension of the predicate, with all the others falling in the anti-extension (for the bald case, a precise number of men who count as bald, and the rest as not bald). But this, of course, means that for any vague predicate $\Psi$ there will be a sharp (but unknowable) cut-off between the $\Psi$s and the $\sim\Psi$s.

Thus the notion that, when we are presented with a so-called ‘metaphysical Sorites’, we can assume that somewhere along the series there is a precise but unknown cut-off point seems to be, in some respects at least, the ontic analogue of epistemicism.\textsuperscript{221}

Yet this should strike us as somewhat surprising. The majority of the metaphysicians engaged in these debates are not epistemicists about more traditional representational puzzles of vagueness. Indeed, epistemicists about vagueness are rather thin on the ground – it’s a view that’s considered ‘extreme’.

So why the push toward sharp cut-offs in the ontic case? Why adopt a method of analysis once the subject matter becomes ontic that seems so objectionable when the subject matter is representational? The theorist who adopts a ‘semantic-only’ view of vagueness must think that we somehow have warrant for positing sharp cut-offs in the ontic case that we lack entirely in the representational case, that the ontic case is different in kind in such a way that licenses the postulation of sharp cut-offs which are methodologically objectionable on the representational case. I can think of two main reasons why such a position might be motivated, which I shall outline below. I shall argue that both are unconvincing.

\textsuperscript{221} Endorsing sharp cut-offs in the ontic case doesn’t, at least without some further theoretical work, give rise to the same positive explanatory features for characterizing vagueness which the broader epistemicist theory does. But you can at least see how the ‘in an apparent Sorites, there’s a sharp cut-off but we don’t/can’t know where it is’ is markedly analogous.
The purpose of this section will thus be to critically examine why we think we have warrant to assume sharp cut-offs in putative cases of ontic vagueness when we think the analogous move in the representational case is unacceptable; obviously, this is a false supposition for epistemicists. If you think you have warrant for sharp cut-offs in the representational case, then it seems you ought to carry over the same warrant to the ontic case (or at least, I can see no dialectical reason why you shouldn’t). The point of this section is simply to point out a methodological discrepancy between two common assumptions

1. sharp cut-offs are a bad assumption in representational cases
2. sharp cut-offs are a good assumption in ontic cases

## 1. Worldly Precision vs. Word-ly Precision

### A. The world can draw distinctions where our words can’t

A very straightforward response to why an epistemic-style position might be warranted in the ontic case though not in the representational case would be this: the main reason epistemicism is objectionable in the latter is absent for the former. Most theorists object to epistemicism about representational vagueness because it seems implausible that our words draw such sharp distinctions; that is, it seems implausible that a word like ‘heap’ determines exactly the number of, e.g., grains of sand that must be gathered together to make something count as a heap. It’s simply counter-intuitive that our words operate at that level of precision. The case seems different, however, when it comes to the mind-independent world. We don’t balk at the idea that the world itself could draw such sharp distinctions – i.e., that the world could contain ‘brute’ facts (perhaps about when, for example, a collection of

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222 Since the dialectic that follows becomes rather involved, I’ve put in a somewhat absurd amount of outline points in an attempt to clarify things a bit.
subatomic particles collectively instantiate an instance of Einsteinium). So while representational epistemicism is a cost, its ontic analogue is not.

**B. Objection: primitive facts and metaphysical arbitrariness**

I think, however, that this distinction is somewhat misguided. True, there is quite a difference between our words carving sharp cut-offs in an apparent Sorites and the world doing something similar; yet, the fact that one may be easier to countenance than the other doesn’t entail that either should be embraced.

In a case of putative ontic vagueness, we find ourselves presented with a metaphysical Sorites – that is, an example of Soriticality that looks, at least prima facie, as though its explanation is ontic rather than representational.223 There is a (possible) continuum of cases, each differing only marginally from the other, across which the change from \( \neg \Phi \) to \( \Phi \) occurs (let’s take, again, the case of the scattered subatomic particles changing continuously such that they eventually bond together to form an Einsteinium atom). We are then asked to suppose that there are a pair of cases in this continuum – by hypothesis only marginally different from each other – such that one is \( \neg \Phi \) and the other is \( \Phi \) (in the Einsteinium example, a pair of arrangements of subatomic particles, differing only marginally from each other, such that this difference makes it the case that in one instance that particles do not count as an Einsteinium atom and in the next (arbitrarily different) instance they do). Such a change looks ‘metaphysically arbitrary’224 or ‘brute’. Why does the world draw the cut-off at that pair and not the next or the previous? It seems there’s nothing to explain it – we must take the fact as primitive. And primitiveness is a cost, methodologically speaking.

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223 Given certain metaphysical commitments, of course. Any putative example of ontic vagueness will be compelling only insofar as you find the ontology presupposed in the case to be a plausible commitment. The ontology for the case in question (the Einsteinium case) is natural properties.

224 See Sider (2001) for related complains about metaphysical arbitrariness.
C. Reply: primitives are always present in analysis

But, arguably at least, in any analysis we’re going to have to admit primitives at some stage. Some facts just won’t admit of explanation. So why think it’s a cost to class the sharp cut-offs in a proposed metaphysical Sorites amongst those?

D: Counter-reply: these primitives haven’t been earned

It is a cost, I think, because facts about sharp cut-offs haven’t, as it were, earned their primitiveness. In general, we tend to be willing to accept primitives when explanation has run out – when we can no longer provide meaningful analysis. But this is not the case with facts about sharp cut-offs. We could provide a substantial analysis about what goes on in a putative metaphysical Sorites – we could do so quite easily in terms of commitment to ontic vagueness\(^{225}\) – it’s just that we’re reluctant to do so. We don’t want to be committed to ontic vagueness, and so we accept ontological primitives about location of change instead.

But are these primitives thus warranted? They would be, of course, if we had a knock-down argument for why there couldn’t be any ontic vagueness. That is, if we had conclusive evidence for why the putative examples of ontic vagueness only resemble the phenomenon we call vagueness, but are in fact something else entirely (or else reduce somehow to representational vagueness). Yet, as I have argued previously (in chapter 2), it seems that no such arguments of this strength are forthcoming.

E. Objection: they earn their primitiveness by ruling out the

\(^{225}\) Isn’t claiming that the change is vague just as primitive as claiming that it’s precise? Well, in a sense, yes. But the primitive in dispute here is the location of change, not the nature of the change. The theorist who endorses a sharp cut-off will have no principled explanation for why the change occurs where it does – e.g., why it occurs at point y rather than at x or z – whereas (assuming that change supervenes on certain microphysical features) the ontic theorist will not have a similar worry about location of change. There will be one and only one region where the change could possibly have occurred and thus the location of change for the ontic theorist is principled.
methodological cost of commitment to ontic vagueness

The defender of a purely semantic view might still, however, maintain that ontic vagueness is itself a methodological cost – it violates many peoples’ intuitions, it may seem somehow metaphysically ‘queer’, it threatens to disrupt classical logic, it lands us with a spreading problem, etc. So getting out of commitment to it via primitives may be biting a bullet of some sort, but it’s surely no worse than accepting commitment to it. Perhaps the only way to adjudicate the debate is to let the individual theorist weigh up her own intuitions and inclinations.

F. Reply: Not so, because they incur their own methodological cost – lack of uniformity

While I see no ready argument to the effect that a commitment to ontic vagueness is a methodological cost, let us grant that it is for the sake of argument. Even if we do so, however, the picture is not quite that of the clash of negative consequences (ontic vagueness on one hand, metaphysically primitive facts about cut-offs on the other) which our opponent presents. There is another methodological cost incurred by the theorist who accepts sharp cut-offs in the ontic case not shared by her opponent – the lack of uniformity.

Ceteris paribus, when presented with apparently like phenomena, it is best to give a uniform account of them. So, for example, if you were going to give an account of emergence in the natural sciences and emergence in philosophy of mind, you would want a theory of emergence that told roughly the same story for each. That is, you would want a story according to which there is a single phenomenon – emergence – which can occur in varying subject matters. Developing two entirely

226 Assuming we mean metaphysical and not epistemological emergence in both cases.
different theories of emergence – one for physics and chemistry, one for the mind – would look utterly ad hoc.

And the case is similar, I think, with respect to vagueness. At least prima facie, with semantic and ontic vagueness we encounter two strikingly similar phenomena which are simply couched in different subject matters. Purported cases of ontic vagueness share with their representational counterparts the paradigm features of vagueness – Sorites susceptibility, instances of ‘borderline’ cases, and penumbral connections – so they do at least bear a great deal of resemblance to more familiar cases of vagueness. Nor does it seem that, in the absence of any knock-down arguments to the effect that there simply cannot be any ontic vagueness, we have reason to suppose that such similarities are automatically misleading. We would have such reason, naturally, if we could assume that so-called ‘metaphysical Sorites’ series have sharp cut-offs where representational ones lack them, but that of course is the point in question, so the defender of a ‘semantic only’ picture cannot assume it at this point in order to help her case.

That said, it looks as though, prima facie at least, it would be methodologically preferable to give a uniform account of such similar phenomena. That is, it would be better, ceteris paribus, to take the same theoretical approach to putative ontic vagueness that we do to representational vagueness. This will, of course, rule out certain theoretical approaches to vagueness, such as those that define vagueness as semantic indecision alone (see Lewis (1986) and Sider (2001))

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227 See Keefe and Smith (2001)
228 More on the ‘it’s just not vagueness…’ response later.
229 I don’t see this as any kind of methodological cost for the commitment to ontic vagueness – surely it would beg the question against the ontic theorist to simply define away the existence of ontic vagueness by the very nature of our theory of vagueness.
are prime examples), and most types of nihilism. Many others, however, are perfectly adequate to characterize vagueness in rebus, including the ever-popular supervaluationism (Fine’s (1975) is the classic text), ‘non-standard supervaluationism’ (McGee and McLaughlin (1995)), minimalism (Greenough (2003)), tolerance (Wright (2003)), and degree theory and fuzzy logic (Edgington (1997) and Rosen and Smith (2004)). So there are plenty of theoretical options – and the previous list is by no means exhaustive – for the theorist who seeks a uniform account of vagueness. A satisfactory and unifying account – not, of course, a perfect one, this is philosophy after all – is there to be had.

It seems, then, that it would be a large cost to reject such an account. If we have available a uniform theory of vagueness – a theory that would bring together such strikingly similar phenomena and tell us how they are all of a kind, just realized in different subject matters – then unless we have compelling reason to reject it (e.g., an argument why the phenomena can’t be the same, even though they appear to be), we should accept it as superior to a fragmented account. So a theory that, say, gives a non-standard supervaluationist treatment of both representational and non-representational vagueness is preferable, methodologically, to one which gives the same non-standard supervaluationist treatment to the representational case, but posits sharp cut-offs in the ontic case. The theory that salvages uniformity is, ceteris

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230 That’s not, of course, to say that there can’t be contextual elements in vagueness – that would be foolish to deny. It’s just that, unless she wants to embrace a rather radical anti-realism, the ontic theorist looks committed to denying that all vagueness is context-dependent.

231 It’s one thing to say natural language it incoherent, but it’s not overly clear what the claim that the world is incoherent would amount to. Terry Horgan’s brand of nihilism, however, as espoused in his (1994) is, I think, compatible with ontic vagueness, despite his claims.

232 Rosen and Smith, in fact, argue that commitment to ontic vagueness is the most natural theoretical interpretation of the fuzzy logic treatment of vagueness.

233 As mentioned previously, epistemicism across the board is also a perfectly coherent option for a treatment of both putative representational and non-representational vagueness.

234 There might be two main forms of this, both of the form ‘ontic vagueness isn’t really vagueness’. One is that ontic vagueness is a type of category mistake, which I shall address subsequently. The other is that the purported cases of ontic ‘vagueness’ have sharp cut-offs where the representational ones don’t – but since warrant for that notion is the point in question, it can’t be appealed to here as a premise.
paribus, methodologically superior, and so it seems preferable to give a theory of vagueness which respects the genuineness, as it were, (i.e., no sharp but unknown cut-offs in both the representational and the non-representational case) of the phenomenon, rather than embracing it in the representational case but denying it in the ontic case.

G. Counter-reply: the ontic theorist, not the representational theorist, is in the weaker position with respect to uniformity

The semantic theorist might here object that the ontic theorist cannot appeal to uniformity as an advantage, because by the very nature of her commitment to ontic vagueness she has given up the idea that vagueness can be uniform. The semantic theorist – who thinks that all vagueness is, ex hypothesi, representational vagueness – can claim that her account of vagueness is in fact far more unified than the ontic theorist’s. A purely semantic account of vagueness situates vagueness squarely in representational phenomena, as a feature of how we represent things rather than a feature of how things are in and of themselves. The ontic theorist, of course, cannot do this. If, as most ontic theorists are, she is committed to the existence of both semantic and ontic vagueness, then the ontic theorist cannot claim the same uniformity. According to her account, some vagueness is a feature of meaning, of our descriptions of the world, but some is a (purely non-representational) feature of the world itself, independent of how we describe it. Thus, far from being able to claim an advantage over the semantic theorist with respect to uniformity, the ontic theorist is actually at a marked disadvantage. She must commit to two fundamentally different kinds of vagueness – representational and non-representational – whereas the semantic theorist commits to only one.

H: Counter-reply: distinguish between uniformity in precisification
and uniformity in analysis

Yet, perhaps despite appearances, I don’t think the ontic theorist is in fact at a marked disadvantage when it comes to uniformity considerations. Resisting the previous point simply requires making the necessary distinction between uniformity in precisificational dimensions and uniformity in analysis. Once this distinction is properly illuminated, then the semantic theorist won’t have the uniformity advantage which she might prima facie claim, yet the ontic theorist will still have the marked uniformity advantage that was previously outlined.

There are (at least) two ways a theory of vagueness might be uniform: it might have a unified precisificational dimension, or it might have a unified analysis of the phenomenon. Ontic theorists push their advantage in the latter kind of uniformity – if it looks like vagueness and bears the paradigm features of vagueness, then, regardless of whether its subject matter is representational or non-representational, they give the same theoretical treatment of it (whatever that might be – pick your favourite). The semantic theorists, in contrast, press their superiority on the former – they can locate vagueness as a solely representational phenomenon, strictly to do with how we use our words, whereas the ontic theorist obviously cannot. So again, are we not at a standoff? Is it not simply at the discretion of individual theorists to weigh up their own inclinations in deciding between the two uniformity considerations?

Not quite. The debate can be more principally adjudicated, I think, if we take a closer look at the claims of uniformity in precisificational dimension. If we take it that vagueness always involves at least the theoretical possibility of making things more precise, uniformity in precisificational dimension simply means that there is uniformity in the subject matter which admits of precisification in a case of vagueness. Yet I don’t, in point of fact, think that most standard semantic theories of
vagueness can claim this as a virtue. Some characterizations of vagueness – such as a hard-line contextualism, for example, which considers all vagueness as arising from context-shifting – can, but they are all of the form that rule out the possibility of ontic vagueness from the very beginning. Since, however, those theories are naturally not being considered here, I will leave them to the side in favour of more inclusive ones. You might well decide there isn’t any ontic vagueness, but it doesn’t seem to be the sort of thing you ought to define out of existence by the very nature of your theory.

On more general theories of vagueness, many different and diverse factors can contribute to the phenomenon of vagueness, and so there are many different planes along which we might precisify. There is lexical vagueness (i.e., when we just haven’t quite decided what a word means – a la Lewis on ‘the Outback’), there is contextual vagueness (when it’s unclear what context we’re in, e.g., whether we mean ‘tall for an average European’ or ‘tall for a Scotsman’), there is vagueness arising from our inability to track distinctions in a subvenience base (e.g., you might think we find the colour Sorites so alluring because we find subtly different shades pair-wise indistinguishable), and there is vagueness in mental content (partial beliefs, vague mental representations, etc). Any and all of these are precisificational dimensions, and arguably each is sufficient for vagueness. So if the semantic theorist maintains a more ‘generalist’ account of vagueness, it looks dubious to suppose that she can indeed maintain that she has claims to uniformity in the precisificational dimension.

The semantic theorist might here protest that she at least retains a kind of uniformity in precisificational dimensions that her ontic opponent obviously lacks. Yes, she is committed to varying domains of precisification, but they are all uniform in the sense that they are all representational. The ontic theorist is committed to the
startling disparity of adding a non-representational dimension to the precisificational
domain, which is surely a cost.

It’s not clear to me, however, that the distinction is so obviously
disparate or costly. We already know that we are committed to various planes of
precisification. And indeed, some of those planes (despite the fact that they are all
‘representational’) differ strikingly from one another. Vagueness in mental content
and mental representation is first-person and internal, as is vagueness arising from
inability to track subtle microphysical distinctions. Contextual vagueness, in contrast,
is public and objective – what context you are in is determined by the full community
of language-users. And lexical vagueness is arguably some sort of middle ground –
the vagueness in words like ‘outback’ arises both from the inexact usage of the
language community as a whole and the indecision of the particular user. Thus
precisificational domains run the course from utterly private and internal to fully
objective. They are admittedly all concerned with representation (though not with
language, if you admit that mental content can be vague), but it’s far from obvious
that this association is sufficient to group them into some sort of natural kind. Yes,
extending the precisificational domain into the non-representational world will be a
jump. But with such variety already in place within the precisificational domain,
much more needs to be said in order to show that it’s an objectionable or
methodologically costly jump.

I. Objection: uniformity need not be considered an advantage

Thus it seems that the semantic theorist cannot claim a uniformity
advantage over the ontic theorist; or at least she cannot claim a uniformity advantage
that trumps the one which can be claimed by the ontic theorist (i.e., uniformity in
analysis). The only such advantage she could claim would be uniformity in
precisification, which I have argued has no warrant to do. And even if she were to claim a modicum of superiority from the fact that all her precisificational planes are representational, that does not look to be sufficient to trump the ontic theorist’s obvious benefit of uniformity in analysis. In considerations of uniformity, therefore, the ontic theorist has the marked advantage.

But is uniformity an obvious methodological advantage? The semantic theorist might argue that in fact we have no reason to suppose it is. That is, we have no reason to suppose that for the apparently similar phenomena of semantic Soriticality and (putative) ontic Soriticality a uniform theory is, ceteris paribus, the best theory.

Consider an analogy to the semantic paradoxes. Though many of these paradoxes bear strong surface similarity to one another, it would be naïve, it is often supposed, to think that we can come up with a single solution that applies to all of them. We must take each case individually.

Why isn’t the case the same for purported cases of vagueness? We have vagueness in representational content, and we provide a certain solution to that puzzle. Then we are presented with puzzles about the non-representational world that appear to have similar paradigm features (basically, small changes seem like they shouldn’t make a difference, but we know that big ones do). Yet what makes us think that our analysis of these type of puzzles should be the same as our analysis of representational vagueness? Why not just admit, as we do in the semantic paradoxes case, that they do bear certain structural similarities, but that these similarities are not enough to license the insistence that our analysis of both problems should be the same across the board.
The fault with the analogy to the semantic paradoxes, however, is this – it’s not that we don’t seek a uniform solution to those problems, but rather than on closer examination is seems such a solution simply isn’t available. Most theorists would agree, I think, that if we could develop a tenable solution to the semantic paradoxes that told the same story in each instance, such uniformity would be a marked advantage. It’s just that no such theory seems forthcoming. The case is disanalogous, however, with vagueness. We can tell a uniform story about apparently similar phenomena that display the paradigm features of vagueness but differ in their realizing subject matter (i.e., whether they are representational or non-representational) – it’s just that objectors to ontic vagueness aren’t keen to do so.

To push the point further: Graham Priest claims a marked advantage for his dialetheism because it’s the only proposed solution to the semantic paradoxes that is uniform in its treatment of them. And, methodologically, there are few who would dispute this point with Priest; most are willing to grant that it is indeed an advantage of the dialethic approach that it analyzes the semantic paradoxes uniformly. Dialetheism is still resisted, however, because its costs are generally seen to outweigh its benefits. It may give us uniformity, but it takes away the ability to rule out true contradictions, which many have argued is essential to our ability to reason. The semantic theorist would be hard pressed, however, to argue that the denial of ontic vagueness is central to our ability to reason, or some other kind of logical truth. Stripped of such essentiality, denial of ontic vagueness becomes just one dialectical option among many, one which easily can be outweighed by considerations like uniformity. Thus it seems that uniformity is indeed a methodological benefit in the vagueness dialectic, and that the ontic theorist can make better claim to it.

235 See Priest (1987)
In summary then, we are not warranted in positing sharp cut-offs in putative cases of ontic vagueness simply because we can countenance the world drawing such lines where we cannot envision an analogous case for our words. Such facts would be ‘metaphysically arbitrary’ or ‘brute’, and their primitiveness would be posited not because we could not provide an alternative explanation, but simply because we found the alternative explanation undesirable. Moreover, in addition to the methodological cost of multiplied primitives, we would find ourselves, by postulating such sharp cut-offs, with a startling lack of uniformity in analysis of quite similar cases – yet another blow to our methodology. The combination of these methodological costs – primitive facts and lack of uniformity – make it the case that sharp cut-offs are not warranted as a solution to soritical puzzles motivated in the ontic case. Thinking it more plausible that the world could draw such distinctions than that our words could doesn’t make it a good theoretical option – the more plausible alternative can still be quite implausible.

2. Ontic Cases Can’t be Vague

But there are other potential reasons for the straightforward denial that the ontic puzzles are in fact cases of vagueness, and thus for the positing of sharp cut-offs in the ontic case. These cases may well resemble vagueness, the thought goes, perhaps because of our ignorance of the underlying subvenience base or the vagueness of the words we use to describe the cases, but they themselves are not instances of the phenomenon of vagueness.
Many ‘semantic only’ theorists look to various arguments (usually those already in play)\textsuperscript{236} to provide warrant for the postulation of a sharp cut-off. Here, though, we must tread carefully to avoid charges of circularity. There’s often a implicit assumption that such cases are not vagueness because the world draws a sharp cut-off, an assumption that we then employ in explaining why we are justified in supposing that the world draws a sharp cut-off (i.e., ontic vagueness isn’t really vagueness, so there’s a sharp cut off in the metaphysical Sorites, and since there’s a sharp cut-off in the metaphysical Sorites we know that ontic vagueness isn’t really vagueness). Something more substantial must be offered.

Rejecting putative ontic vagueness as genuine vagueness might be warranted if we had reason to suppose that the constraints against positing sharp cut-offs in the representational case are absent in the ontic case. But, as argued in the previous section, such an argument appears problematic, methodologically. How else might the proponent of a ‘semantic only’ view of vagueness argue that such a step is warranted?

\textbf{A. Conclusive Arguments}

The semantic theorist would certainly be justified in rejecting purported cases of ontic vagueness as genuine vagueness if she had a conclusive argument to the effect that there simply cannot be any ontic vagueness. In the presence of such an argument, the defender of the ‘semantic only’ view would be able to reject any argument that attempted to demonstrate the existence or possibility of ontic vagueness as flawed somehow – she would be able to claim that even if a series on offer seemed soritical, we know that it cannot be, and thus that there must be a sharp cut-off somewhere. An argument to the effect that ontic vagueness is impossible would put

\textsuperscript{236} I surveyed the main arguments against ontic vagueness in my chapter 2 of this thesis. I will not attempt to retread that material here, but rather explore the dialectical position in light of those arguments once the ontic theorist has stated her case.
the semantic theorist in the following position: x seems to be evidence for y, but I know that y is impossible, therefore I know that my evidence (x) for y must be misleading.

Such a knock-down argument against ontic vagueness, however, doesn’t seem forthcoming. Gareth Evans’ argument against vague identity was once touted as exactly such an argument, but recent work has shown that it’s far from the conclusive objection it was originally thought to be. What else might we put forward?

Wishing to retain bivalence and other such classical principles is not a compelling reason to reject ontic vagueness, because we can model characterizations of vagueness that allow the ontic theorist to retain principles like bivalence, excluded middle, etc. And apart from these type of considerations, it’s not clear what could suffice for the type of argument the semantic theorist needs. There are plenty of arguments in play that attempt to show that ontic vagueness is implausible, unparisimonious, counter-intuitive, etc. No such argument, however, will be strong enough to do the work the semantic theorist needs at this juncture. She needs an argument which shows that there simply cannot be ontic vagueness – only a claim of that dialectical magnitude will allow her to automatically stave off any purported evidence of ontic vagueness. To license the postulation of sharp cut-offs whenever we encounter a metaphysical Sorites, we would need to know that ontic vagueness simply can’t occur. But in the absence of an argument to that effect, such sharp cut-offs remain unwarranted.

B. Persuasive Arguments

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237 See especially Heck (1998), Hyde (MS), and Williams (forthcoming)b. I have hopes that the solution I put forward in chapter 3 of this thesis might have something worthwhile to say as well.

238 McGee and McLaughlin’s (1995) ‘non-standard’ supervaluationism, or a similar version espoused by Brian Weatherson (2003) are good options. The model semantics put forward in the appendix to chapter (1) is also an option.

239 Though this will be an epistemic sense of ‘cannot’, rather than a metaphysical one.
The semantic theorist might here reply that, although she cannot produce 

*conclusive* arguments against ontic vagueness, she can nevertheless provide 

*compelling* arguments against it. Commitment to ontic vagueness appears 

unparsimonious, if we accept that we are already committed to semantic vagueness. 

As already discussed, it requires an extension of the precisificational dimension to the 

non-represenential world. It is found by many to be unintuitive, theoretically 

problematic, etc. Should not considerations such as these be sufficient to rule out 

commitment to ontic vagueness, at least for those who find them persuasive?

I don’t think they should – at least not at this stage of the game. As I’ve 

argued previously\textsuperscript{240}, if we grant that such arguments are successful, what they 

succeed in establishing is that our default position is that of the semantic theorist. In 

doing so, such arguments would place the ‘burden of proof’, as it were, squarely on 

the shoulders of the would-be ontic theorist. If our default attitude toward vagueness 

is a ‘semantic only’ position, it’s then up to prospective defender of ontic vagueness 

to give us motivation to abandon that view – that is, to show us why in some special 

cases a ‘semantics only’ approach looks inadequate or misconstrued.

But we now find ourselves further down the dialectical path. Here we 

are considering responses to prima facie compelling metaphysical versions of the 

Sorites paradox. So the ontic theorist has done some work. She has taken some 

specific metaphysical commitments and shown them to be at least putatively Soritical. 

In doing so, she has in effect made an attempt to respond to the ‘semantic only’ 

theorist’s challenge – she has provided motivation for why, given a certain set of 

metaphysical commitments, the ontic story looks plausible (and thus the ‘semantic 

only’ view insufficient). The ball is now back in the semantic theorist’s court. If she

\textsuperscript{240} See chapter 2 of this thesis
wants to resist the ontic theorist’s arguments, then she must give reason for why she thinks they are unsuccessful – that is, she must say where they go wrong, and thus how they fail to meet the ‘burden of proof’ requirements.

But in doing this, it’s simply not sufficient to fall back on her original claim that a semantic-only view is our default position in order to assert a sharp cut-off for the proposed metaphysical Sorites. Thus she cannot claim that the arguments go wrong merely by ignoring a sharp but unknown cut-off point. Her original arguments (assuming they are convincing), were enough to establish a ‘burden of proof’ debt for the ontic theorist – the ontic theorist had to go out and look for arguments for why her position might be tenable. But once she has provided such arguments, it’s no longer dialectically acceptable to claim that, because the burden of proof is on the ontic theorist, we can assume there is a sharp cut-off in any putative metaphysical Sorites. Making such a claim would amount to rendering the burden of proof levelled against the ontic theorist utterly impossible to fulfil; for any argument the ontic theorist put forward, not matter how compelling, the semantic theorist would have an automatic reply to it. Surely that’s not the sense in which the ontic theorist must provide motivation for her view. Rather, we take it as our default position that the world is not ontically vague, but allow that this is a position which we can be argued out of. When the ontic theorist then provides us with arguments in favour of ontic vagueness, we take those arguments on their own merits, deciding whether or not they are compelling based on the strengths and weaknesses of the arguments themselves. We cannot, however, retreat to our original position that denial of ontic vagueness is our default position in order to assume a sharp cut-off in the proposed metaphysical Sorites. Such a move would be hopelessly question-begging, dialectically. But that, in the end, is what is being done when semantic theorists claim
that, because of somewhat convincing (though not definitive) arguments against ontic vagueness, they can automatically assume a sharp cut-off in putative examples of ontic vagueness. Surely this is not the way forward, methodologically. Proposed arguments for the possibility of ontic vagueness must be assessed on their own terms and inspected for dialectical errors – ignoring the possibility of semantic ascent, relying too much on supervenience, etc. But among this list of dialectical errors ought not to be ‘ignoring a sharp cut-off point’ – at least not for the reason that we have arguments to the effect that a ‘semantic only’ position should be our default.

Importantly, this is not to claim that the semantic theorist cannot rely on previous arguments against the plausibility of ontic vagueness when assessing whether or not arguments for ontic vagueness succeed. She can, of course, weigh up those (‘semantic-only’) arguments against those of the ontic theorist in an effort to arrive at reflective equilibrium.  

The claim is simply that arguments for ontic vagueness must be met on their own terms. The notion that denial of ontic vagueness is our ‘default’ position cannot be sufficient, on its own, to license the postulation of a sharp cut-off for any ontic vagueness argument we meet. We have to look at the strengths of those arguments independently. Otherwise, we would saddle the ontic theorist with a burden of proof which is utterly unsustainable.

III. Conclusion

In summary, then, it seems that both of the main strategies for resisting arguments for ontic vagueness fail to undermine the position of the would-be ontic theorist. We cannot, I’ve argued, always manage to relocate the vagueness into the

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241 I don’t think, though, that such a ‘global outweighing’ strategy would license the postulation of sharp cut-offs, even if it did allow you to deny the existence of ontic vagueness. You’d be entitled to conclude that the arguments for ontic vagueness don’t work, but I don’t think you’d be entitled to conclude, additionally, why they don’t work.
more familiar semantic indecision model. But nor can we appeal to the idea that the world can draw such boundaries where language seemingly cannot. Such a position incurs great methodological costs, both in terms of multiplications of metaphysical primitives and in the damage to uniformity considerations. And finally, we cannot claim that sharp cut-offs are licensed because we know that any putative cases of ontic vagueness simply are not genuine vagueness. We could do so if we had conclusive arguments to the effect that ontic vagueness is impossible, but no such arguments are forthcoming. We may well have arguments that would lead us to conclude that ontic vagueness is prima facie implausible, but this only allows us to conclude that the burden of proof lies with the ontic theorist. Once the ontic theorist has given an argument for her position, however, as an attempt to meet this burden, it’s no longer dialectically acceptable to retreat to these arguments as an excuse to assume that there must be a sharp cut-off in the proposed Sorites. Such a move would, in effect, make the burden of proof for the ontic theorist wholly impossible to meet.

No doubt there are other, more nuanced objections to arguments for ontic vagueness than those I have canvassed here. I simply wanted to examine these because they are the most common, and are often implicitly assumed as responses independently of the merits of the specific argument they are meant to undermine. Thus if they don’t work – which I’ve argued they don’t – individual arguments for ontic vagueness would have to be examined on a case by case basis and judged on their own grounds. Quite a few, maybe all, might fail. What I hope to have established here, though, is that they can’t be rejected out of hand, using a set of standard responses. They need to be thought hard about, because there’s at least a chance they might be right.
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In summary, then, I don’t see any reasons that would keep someone from endorsing ontic vagueness if her metaphysical commitments elsewhere lead her in that direction. Let me briefly review why. As I argued in chapter 1 (‘What is Ontic Vagueness?’) the idea of de re vagueness isn’t nonsense – we can provide not only a theory-neutral working definition of it, but a fully classical semantics as well. On the issue of compelling arguments that would weigh in against commitment to ontic vagueness, I made a case in chapter 2 (‘What’s so Bad About Ontic Vagueness?’) that, though some might succeed in establishing that the burden of proof lies with the would-be ontic theorist, none of the arguments currently on table the provide motivation for rejecting ontic vagueness outright. More specifically, I argued in chapter 3 (‘Indeterminacy, Identity, and Counterparts: Evans Reconsidered’) that Gareth Evans’ famous argument against vague identity is invalid on a very plausible counterpart-theoretic interpretation of the determinacy operators.

With worries that ontic vagueness is complete nonsense hopefully pushed aside, I turned my focus to the question of why we might have reason to posit it in the first place. That is, why might someone be tempted to think that the phenomenon of vagueness outstrips simple representational shortcomings? And furthermore, if the burden of proof is on the would-be ontic theorist, how might she go about meeting it? In chapter 4 (‘Arguing for Ontic Vagueness’) I briefly surveyed some of the main arguments in the literature in favour of ontic vagueness with a ‘for the purposes here’ approach – that is, given the goal of establishing conceptual room for ontic vagueness and the definition already on offer – and found the strategy (though not the ontology) of Peter van Inwagen most successful. The best tactic, it seemed, was to establish
your ontological commitments and then evaluate whether they were soritical – and soritical in a way that intuitively seemed to be independent of how we describe them. In chapters 5 (‘Vague Properties’) and 6 (‘Vagueness, Four-Dimensionalism, and Natural Properties’) I gave examples of such arguments, ones which highlighted surprising soriticality in ontological commitments not generally thought to be ‘vagueness-prone’. In chapter 7 (‘Ontic Vagueness Without Supervenience’) I then motivated a potential worry with those arguments – and all of the same form – based on their reliance on supervenient entities, but argued that ontic vagueness can still be motivated using only fundamental ontology.

Finally, in chapter 8 (‘Bearing the Burden: Methodological Issues in the Ontic Vagueness Debate’) I attempted to synthesize the motivations toward ontic vagueness raised in previous chapters and analyze how they fared in meeting the burden of proof challenge levelled by the strictly representational theory of vagueness that is current philosophical orthodoxy. To do so, I considered the standard objections that the arguments raised in the previous chapters might face, and argued that such arguments aren’t sufficient to undermine the ontic theorist’s position.

In conclusion, then, I think we ought to hold that there is conceptual room for ontic vagueness. That is, we should think that ontic vagueness is a perfectly reasonable ‘option on the table’ in metaphysical debate. The idea that the world itself, rather than simply the way we represent it, could be vague is a strange and intriguing one. And the conclusion of my thesis is that it’s one worth exploring.
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