

***Ontic Vagueness in Temporary Existence:
A Challenge to Sullivan's Minimal
A-Theoretic Metaphysics of Time***

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Introduction

There are two major theories of time that aim to give an answer to what time is like: A-theory and B-theory. Roughly, for the A-theorist, time is real, time passes, and there is an objective, metaphysically privileged present. (Whereas for the B-theorist, time is merely another dimension, time does not pass, and there is no objective, metaphysically privileged time.) A-theorists assign properties like, "X is past," or "X is present," while B-theorists ascribe relations like, "X is before Y," or "X is simultaneous to Y." A-theoretic properties will change, because which time is objectively present will change. B-theoretic relations will not change, because time is just another dimension with no objective, metaphysically privileged present.

In the paper "The Minimal A-Theory," Meghan Sullivan outlines a version of the A-theoretic model of time that does not include temporaryism, the view that there are

temporary existents. Sullivan argues that temporaryists have not succeeded in capturing a commonsensical belief about existential change. Absent this kind of intuitive backing, Sullivan asserts that we should accept the more metaphysically advantageous alternative to temporaryism: permanentism, the view that everything always exists.

Sullivan's minimal A-theory is unorthodox, but not immediately implausible. Most A-theorists are also temporaryists, but A-theory is perfectly compatible with permanentism. To show that temporaryists have not been successful in their endeavor to best capture commonsensical belief, Sullivan points to a vagueness in our ordinary beliefs about change. In this paper, I will survey Sullivan's starting assumptions and her argument for determinate temporary existence, making explicit her criteria for possible vagueness in our beliefs. I will then raise concerns with a premise in her argument against the Moorean argument for temporaryism. I will do so by articulating how one model of ontic vagueness challenges Sullivan's argument that temporaryism does not have a Moorean advantage. Ontic vagueness, or metaphysical indeterminacy, is simply a kind of vagueness in *what there actually is* rather than in our *descriptions or knowledge of what there is*. Ontic vagueness meets Sullivan's criteria for the kind of vagueness that could be present in the temporary ex-

istential sentence, which is just the logic-ese used to capture the claim that some objects change with respect to existence. Finally, I will consider some of the ramifications of a successful ontic vagueness challenge, suggesting how best a non-temporaryist A-theorist might resist this challenge.¹

Sullivan's Minimal A-Theory

Sullivan begins by assuming A-theory. For Sullivan, this assumption entails assuming:

FUNDAMENTAL TENSE: There is a fundamental distinction between the present and other times, and expressing this distinction requires primitive tense operators like "it was the case that..." (usually abbreviated with P), "it will be the case that..." (F) or "it is always the case that..." (which I will abbreviate with \Box).

A-PROPERTY CHANGE: Objects do not require temporal parts or time-relational properties to undergo change. Some objects have temporary non-relational properties and endure through change. Using the "always" tense operator, we can express the view most perspicuously: For some property C, $\exists x(C(x) \& \neg \Box C(x))$.²

To account for how objects persist in or change through time, some philosophers hold that objects have temporal parts. Temporal parts are the subject of the incompatible properties involved in change, and the compos-

ite of these temporal parts is the object which persists over time. Temporal parts are a somewhat imperfect analog to spatial parts. My younger sister's beloved ombre slippers have spatial parts because they vary in color across space. Likewise, persisting objects vary across spacetime. For instance, the cold pot of water from ten minutes prior to my typing is now a boiling pot of water, but the pot of water is not itself subject to the incompatible properties being cold and being boiling; rather, the earlier temporal stage of the four-dimensional object called the pot of water is the subject of the property being cold, and the current temporal stage of the object is the subject of the property being boiling. Other philosophers think that temporary properties, like being cold or being boiling, are really relations to a time, where a time-relational property would be something like, "In relation to the present time, the pot of water has the property being-boiling."

Sullivan also assumes a neo-Quineanism she characterizes as follows:

UNIVOCAL EXISTENCE: There is a single, fundamental sense of "exists" of interest to metaphysics, and it is denoted by the existential quantifier.³

This assumption states that there is an answer to the question of what change is fundamentally. For

neo-Quineans, "The debate about change is substantive if we can translate different theories of change into logic-ese and show that they must quantify over different domains."⁴ Finally, she articulates the view she will aim to refute and the view she proposes neo-Quinean A-theorists accept in its place, respectively:

TEMPORARY EXISTENCE: Some objects change with respect to existence. In logic-ese we express this using what I will call a bare existential sentence: $\exists x \neg \Box \exists y (x=y)$. The sentence is bare because the only predicate it uses is absolute identity.

PERMANENT EXISTENCE: Everything always exists:
 $\forall x \Box \exists y (x=y)$.⁵

Univocal existence means that the A-theorist cannot describe change in existence as merely a property change. Because the A-theorist needs more tools to describe change in existence, she might opt to accept temporary existence. Temporary existence is commonly thought to have an advantage over permanent existence because there is a good Moorean argument for it. This means that most A-theorists, according to Sullivan, believe that temporaryism is so clearly supported by common sense that absent quite strong reasons for the contrary, it would be irrational to deny the view. To challenge the Moorean argument for temporaryism, Sullivan challenges its first premise:

ENTAILMENT PREMISE: Highly plausible, common sense beliefs entail some P. More specifically: There is a set of natural language sentences ME that express highly plausible beliefs about a certain domain, there is a set of sentences ML that are appropriate logical paraphrases of ME, and ML entails P.⁶

Her argument goes roughly as follows: neo-Quinean A-theorists are committed to the belief that change in existence is “always, necessarily a determinate matter;” however, the ordinary way we talk about creation and destruction involves penumbral states; so our ordinary beliefs fail to track temporary existence, and so the Moorean argument for temporaryism falls apart.

To demonstrate that common sense belief fails to support determinate existence, Sullivan invites us to consider our intuitions on creation and destruction. I’ll offer my own example: if I place a wax statue of Elvis Presley into a furnace, I will observe Elvis melting, gradually transforming into a pool of shapeless wax. Before the melting process, the statue of Elvis Presley existed, and after melting, the statue no longer exists. If one were to ask someone when Elvis had ceased to exist, it seems plausible that she could say that there is not an exact time or stage of melting in which Elvis leaves the building. Already, the language I used to describe this slow melting process hints at a vagueness. As he melts in the

furnace, Elvis is in the process of destruction, a penumbral state where, plausibly, it is not determinate whether or not Elvis exists. This example is meant to show that common sense does not always entail determinate existence, because in Elvis' case, common sense might lead us to believe that going out of existence is a gradual, vague process. If destruction is characterized by temporary existence, then common sense about Elvis doesn't always entail determinate existence. In fact, it looks like common sense sometimes entails nondeterminate temporary existence.

For Sullivan, temporary existence is captured by the bare existential sentence, $\exists x \neg \exists y (x=y)$, so if temporary existence is going to be susceptible to vagueness, the vagueness would lie in this sentence. Sullivan considers two prominent theories of vagueness: semantic and epistemic vagueness. Supervaluationists think indeterminacy is a symptom of semantic indecision. A sentence is indeterminate if and only if it has a vague term and the sentence is true on one precisification and false on another. For example, the claim, "This pile is a heap," could be vague because the word "heap" has multiple candidates for denotation. A heap of sand could be anything greater than exactly 1000 grains, but it also seems plausible that a heap of sand is anything greater than 5000 grains. For the epistemicist, vagueness stems from arbitrary extensions fixed by our lan-

guage. On this view, there is an answer to whether or not something exists, and this answer is fixed by the way we fix the extension of a term, it just might be difficult or impossible for us to discover the precise boundaries of a vague term. For the epistemicist, there is an answer to when grains of sand become a heap, we just can't discover the extension of "heap of sand."

So vagueness on these views is largely a matter of having too many good options for the denotation of a term. Both supervaluationists and epistemicists accept:

MULTIPLE CANDIDATE DENOTATIONS: A sentence is indeterminate only if there are multiple candidate precise denotations for at least one of its terms and we cannot know which, if any, particular denotation is fixed by linguistic practice.⁷

However, Sullivan finds it implausible for $\exists x \neg \Box \exists y (x=y)$ to have too many candidates for denotation, because each term of $\exists x \neg \Box \exists y (x=y)$ has exactly one denotation. Recall that neo-Quineans think existential quantifiers pick out the single, fundamental sense of "exists," and for this reason, they should hold that "there is no indeterminacy in the quantifier expressions or their attendant variables," furthermore, "Negation is a logical constant — no room for indeterminacy here. All A-theorists are fundamental tensors, so they think that tense operators like \Box have a single denotation — no room

for indeterminacy here.”⁸ Finally, Sullivan does not find it plausible for identity to be the source of indeterminacy, because to hold this view one would have to reject the A-theoretic account of change. Basically, the argument is that because we have assumed neo-Quineanism and an A-theory, we should not think that there is anything in the temporal existential sentence that we can identify as the source of vagueness.

However, there is a type of vagueness that does not accept the multiple candidate denotations principle: ontic vagueness. Ontic vagueness, or metaphysical indeterminacy, is simply a kind of vagueness in what there is rather than in our descriptions or knowledge of what there is. Sullivan gives this view a brief treatment, “Sojourners on this less-travelled route to indeterminacy maintain that a semantically determinate and epistemically scrutable sentence can nevertheless pick out a state of affairs such that it is indeterminate whether that state of affairs obtains.”⁹ Sullivan does not offer an argument against ontic vagueness in $\exists x \neg \Box \exists y (x=y)$, instead she says, “Here I have little to offer beyond noting that I don’t see how [ontic vagueness could obtain here]...purely fundamental facts either obtain or they do not — that’s just part of what it is to be a fundamental fact.”¹⁰ In other words, fundamental facts about existence may either be true or false. However, there is a model of ontic vagueness that meets these criteria.

Sullivan acknowledges that readers with sympathies towards certain models of ontic vagueness will likely find her response question-begging, but she thinks those who have accepted her preconditions shouldn't be concerned about the possibility of ontic vagueness obtaining. I'll consider her argument more carefully, then I'll outline a model of ontic vagueness that I think causes her treatment most trouble. Finally, I will explore the ramifications of a successful challenge via ontic vagueness to her refutation of the necessarily determinate existence premise.

The Ontic Vagueness Challenge

Sullivan's argument goes like this: fundamental facts are determinate, neo-Quineans hold that existence is fundamental, A-theorists accept fundamental tense, so "neo-Quinean A-theorists should think facts about bare temporary existence are fundamental. The temporary existence principle makes a kind of bare existential claim."¹¹ Sullivan acknowledges that there may be some fundamental indeterminacy with regards to really weird temporary existence, like quantum objects, but asserts that we shouldn't be concerned with these sorts of cases in a defense of Moorean advantage because quantum physics isn't exactly the stuff of common sense. Finally, she, perhaps rightly, observes that accepting ontic vagueness is not a solution most A-theorists could swallow.

But let's say some A-theorists aren't unhappy with a good model of ontic vagueness, if such a model exists. Sullivan doesn't take ontic vagueness seriously in part because she seems to think that it's not the sort of view of which one can make sense. In her paper "Ontic Vagueness: A Guide for the Perplexed," Elizabeth Barnes offers a model of ontic vagueness that has become increasingly respected for its ability to make sense of metaphysical indeterminacy. I mention the view's prominence not to motivate the view by an appeal to Barnes' authority, but to suggest that if Sullivan cares about addressing and responding to challenges from the most prominent models of vagueness, she ought to consider a well-regarded model of ontic vagueness. I will briefly sketch what a metaphysical indeterminist adopting Barnes' model might take issue with in regards to Sullivan's account.

The following is a general model of Barnes' ontic vagueness:

(OV) Sentence S is ontically vague iff: were all representationally content precisified, there is an admissible precisification of S such that according to that precisification the sentence would still be non-epistemically indeterminate in a way that is Sorites-susceptible (as in, susceptible to the Sorites paradox.)¹²

(OV) is a counterfactual that holds that if a claim is vague, but it isn't vague in its semantics nor is it epistemically vague, then claim is ontically vague (or metaphysically indeterminate).¹³

Furthermore, Barnes can provide a formal translation of (OV):

$$(OV^*) \nabla_{op} \text{ at } w \text{ iff } \exists x(\nabla Ixw \ \& \ x \Rightarrow p) \ \& \ \sim \exists y(Iyw \ \& \ y \Rightarrow p)$$

In English, (OV*) means, "P admits of ontic indeterminacy when x makes p true, but it's indeterminate whether x exists at w. What it takes to make p true is settled, but it's unsettled whether what it takes to make p true obtains."¹⁴

I leave Barnes to completely defend whether her definition successfully distinguishes itself from vagueness of the semantic or epistemic sort, and whether it develops adequate constraints for a model of ontic vagueness. I don't seek to provide another argument for this model of ontic vagueness; I am merely offering a sketch of how a proponent of this view could argue that this ontic vagueness model meets the criteria Sullivan articulates for an adequate model of vagueness.

Recall that Sullivan attempts to exhaust "the options for

explaining any indeterminacy in temporary existence by appeal to multiple candidate denotations for a term," and not unsuccessfully, I think.¹⁵ In the background to my response, I outlined Sullivan's reasoning in her rejection of the possibility of $\exists x \neg \Box \exists y(x=y)$ being semantically or epistemically vague. However, as Sullivan notes, not everyone who thinks $\exists x \neg \Box \exists y(x=y)$ is vague will be content to accept multiple candidate denotations. The Moorean assumption Sullivan is challenging is that this sentence is vague. If one accepts Barnes' model, the conditions for vagueness have been met. If the conditions for vagueness in $\exists x \neg \Box \exists y(x=y)$ were met, then Sullivan has not yet succeeded in breaking the stalemate between temporaryists and permenatists.

But first, we must see how Barnes' model meets the conditions for the right sort of vagueness to cause problems for determinate existence. The sentence $\exists x \neg \Box \exists y(x=y)$ is ontically vague because all representational content has been precisified and there is an admissible precisification of S such that according to that precisification the sentence would still be non-epistemically indeterminate in a way that is Sorites-susceptible (see OV). As Sullivan suspected, someone who accepts a model like Barnes' as credible will find Sullivan's dismissal of such models question-begging.

To give an example of how ontic vagueness might work

here, let's pretend that facts about melting snowmen or wax Elvises are the sorts of fundamental facts Sullivan is concerned with; they do not depend on our understanding of what count as snowmen or wax Elvises, but they are deep facts about the laws of the universe. If this seems immediately objectionable, then one should take issue with Sullivan's use of these examples as well. It could be the case that it is metaphysically indeterminate whether Elvis exists. On Barnes' model, it is not the case that Elvis existing and Elvis not existing are equally good candidates for what is going on in the actual world. Rather, determinately, only one of these candidates is the best, it's just indeterminate which is actualized, representing the actual world as an ersatz possible one. Determinately, only one possibility is actualized, and determinately the actualized possibility is either that Elvis exists or Elvis does not exist at time t . This analysis maintains a bivalent model of indeterminacy, unlike the "multiple good candidates" principle proponents of other forms of vagueness might endorse.

One might get the sense from the example I used to illustrate how ontic vagueness works that if Sullivan wanted to defend her dismissal of ontic vagueness, she ought to hold that such vagueness just isn't an appropriate candidate in the cases of determinate existence she cares about. Recall that Sullivan cares about fundamental facts that don't depend on observers, con-

ventions, and the like, and what counts as a legitimate snowman or Elvis statue is likely not going to count as a fundamental fact on her view. But the proponent of ontic vagueness does not need to give examples of ontically vague things. Barnes' ontic vagueness isn't a positive definition as such; rather, it is a counterfactual that obtains if and only if other options for vagueness have been exhausted. For this reason, defenders of this view need not provide examples of a plausible metaphysical indeterminacy within the realm of the commonsensical (unlike that of quantum physics) but still metaphysically significant. Metaphysical indeterminacy obtains when there's vagueness and we can't find a better option to blame the vagueness on. In other words, we if we have good reason to think that there is a vagueness in the temporary existential sentence and we have good reason to accept Barnes' model of ontic vagueness, then we can say that the temporary existential sentence is vague, even though we cannot point to where the vagueness is in the logic-ese. The dialectical background began with the assumption that our common-sense beliefs entailed indeterminacy with regards to existence. For this reason, the common-sense belief should lead us to hold that there is an ontic vagueness in $\exists x \neg \Box \exists y (x=y)$, because common-sense belief entails indeterminacy and ontic vagueness is the remaining option after semantic and epistemic vagueness have been dismissed. Not only is ontic vagueness

merely the last remaining option, but it actually obtains by definition precisely because all other options have been exhausted.

Conclusion

If one wanted to continue to maintain that $\exists x \neg \Box \exists y (x=y)$ is vague in light of Sullivan's critiques of semantic or epistemic vagueness here, accepting Barnes' model of ontic vagueness is her best bet. If one accepts Barnes' view of ontic vagueness (and such a person would be the sort Sullivan would have to address in considering the third prominent form of vagueness) then one should agree that ontic vagueness obtains in $\exists x \neg \Box \exists y (x=y)$. If ontic vagueness obtains, then we should be able to reject the second premise in Sullivan's reductio of the Moorean argument: necessarily and always, temporary existence entails determinate temporary existence. Without this assumption, we cannot get the contradiction which thwarts the Moorean conclusion that there are worlds and times where determinate temporary existence is both true and false.

It now appears that the best way for Sullivan to thwart the ontic vagueness challenge would be to challenge ontic vagueness itself, showing that it is somehow incompatible with the combination of assumptions entailed by A-theory and neo-Quineanism or that the model doesn't hold up for some other reason. I suspect this would be quite the challenge, because

Barnes' model really seems to align with neo-Quinean standards (as I've just attempted to show) and I can't see how fundamental tense nor A-theoretic change could cause problems for the view. All that remains is for the permenatist seeking to challenge the Moorean argument in the manner Sullivan does to criticize ontic vagueness as incompatible with some other commonly-held belief, internally inconsistent, or otherwise troublesome in some way. The purpose of this paper is to show how one ontic vagueness challenge could push on Sullivan's argument, allowing temporaryists to defend their Moorean advantage. For this reason, I will leave defending Barnes' model to others. Because ontic vagueness is a credible option for maintaining that $\exists x \neg \Box \exists y (x=y)$ is vague, the Moorean stalemate remains as it was at the start of the Sullivan paper. However, some interesting progress has been made. The discussion shows that given certain presumptions, ontic vagueness is sometimes entailed by our common-sense beliefs. Such a result is not insignificant, considering how strange and unintuitive ontic vagueness may at first seem.

Notes

1. Thanks to Elizabeth Barnes and Ross Cameron for comments on earlier drafts of this paper.
2. Sullivan, Meghan. "The Minimal A-Theory." *Philosophical Studies* 158, no. 2 (2012): 149–74. <https://doi.org/10.1007/s11098-012->

9888-5. 150-151.

3. Ibid. 150.

4. Ibid.

5. Ibid. 152.

6. Ibid. 154.

7. Ibid. 161.

8. Ibid.

9. Ibid. 161-162.

10. Ibid. 162.

11. Ibid.

12. Barnes, Elizabeth. "Ontic Vagueness: A Guide for the Perplexed." *Noûs* 44, no. 4 (2010): 604.

13. Barnes' model leaves open the possibility that credible models of some other form of indeterminacy could be developed; her counterfactual could be modified to account for these new options. For justification of the adequacy of the use of a counterfactual, see Barnes (2010).

14. Ibid. 609.

15. Sullivan, Meghan. "The Minimal A-Theory." *Philosophical Studies* 158, no. 2 (2012): 149–74. <https://doi.org/10.1007/s11098-012-9888-5>. 161.

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