The Tenseless Theory of Time and the Moodless Theory of Modality[*]

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Abstract

This paper develops a moodless theory of modality, intended to be as closely analogous to the tenseless theory of time as possible. Just as the tenseless theory of time gives tenseless truth-conditions to tensed sentences, the moodless theory gives moodless truth-conditions to modal sentences. David Lewis's modal realism may also be considered a moodless theory, but the theory developed here differs from modal realism, as it is usually understood, in a crucial way: modal realism is usually taken to say that natural languages like English contain moodless sentences, and so that moodless truth-conditions for modal sentences can be given in a fragment of English. The moodless theory developed here denies this, asserting instead that all English sentences are modal, and so that a language for stating moodless truth-conditions must differ from English. In this it parallels the tenseless theory of time, which says that a tenseless truth-condition for a tensed sentence must contain tenseless verb forms absent from English. This difference from modal realism lets the moodless theory better solve certain problems, including the problem of advanced modalizing, the problem of necessitism, and the problem of conflict with common opinion.

Keywords: tense; modality; eternalism; modal realism

1 Introduction

According to the tenseless theory of time, also known as the B-theory of time, or the block universe theory of time, tensed language may in some sense (which I will

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explain) be reduced to tenseless language and quantification over times. Opposed to the tenseless theory are theories of time that deny the possibility of reduction and instead "take tense as primitive"; presentism is a theory like this.[1] Now it is well-known that there are close analogies between time and modality.[2] The syntax and semantics of tense logic, for example, closely resemble those of modal logic. The analogies extend to philosophical theories of time and modality. Analogous to theories of time that take tense as primitive are theories of modality that take some modal notion (like possibility or necessity) as primitive. What then is the analogue of the tenseless theory of time? The answer seems clear: modal realism, as developed by David Lewis.[3] It is a central thesis of modal realism that no modal notion—not necessity, not possibility, not some conditional notion; not the notion of a disposition or of an essential property—is primitive. But while Lewis's modal realism is clearly analogous to the tenseless theory of time, it is an imperfect analogue. My aim in this paper is to develop a theory of modality that is perfectly analogous to the tenseless theory of time. To emphasize the closeness of the analogy I will call the theory "the moodless theory of modality."

Along with getting the moodless theory up on its feet and ready for the cameras, I want to argue that it improves on modal realism at several points. It has a better response to the problem of advanced modalizing. It does not conflict with common opinion in the way that modal realism does. And it does not entail necessitism.

2 The Tenseless Theory of Time

To develop the moodless theory of modality we need a clear statement of the theory it is supposed to parallel, the tenseless theory of time. A key thesis of that theory

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[1]Proponents of the tenseless theory include Quine (1960), Smart (1963), Sider (2001), and many others, including me (Skow 2015). Proponents of presentism include Prior (2003), Markosian (2004), Zimmerman (2007), Bourne (2009), and many others.

[2]Throughout this paper by modality I mean metaphysical, as opposed to epistemic or deontic, modality.

[3]Modalists include van Inwagen (2001) and Stalnaker (1987). Lewis's most extended defense of modal realism is in his (1986).

is that tensed language may be reduced to tenseless language and quantification over times. Now different proponents of the tenseless theory explain this thesis in different ways. For convenience (but for that reason only) I will work with a version of the theory couched in the meta-metaphysical framework favored by Sider (2011). This version says that tensed language is not fundamental, not part of the metaphysically most basic way of describing the world, and so that every pair of a tensed sentence and a context of use has a tenseless "metaphysical truth-condition," written in a language with only fundamental vocabulary.[4] As an example, the theory offers this truth-condition for "Jones was hungry":

(1) "Jones was hungry" is true at a context in which the time of utterance is T (for short: at T) iff there is a time S earlier than T such that Jones is hungry at S.[5]

In passing from the target sentence to its metaphysical truth-condition the tensed verb phrase "was hungry" has been replaced by the tenseless phrase "is hungry at S" and the whole sentence has been prefixed by a quantifier phrase that binds the new variable "S" (a phrase that itself contains the tenseless "is").

Of course, no proponent of the tenseless theory really thinks that the sentence

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[4]The arguments in this paper would not look much different if I were to couch the theory in a meta-metaphysical framework that took the notion of ground, rather than the notion of a metaphysical truth-condition, as its core notion (as work following Rosen 2010 and Fine 2012 does). Nor, I think, would they look much different if done in a way Quine (1960) would have approved, where the goal is to provide "paraphrases" rather than metaphysical truth-conditions or grounds.

[5]This is of course oversimplified. In some contexts in which the time of utterance is T, "Jones was hungry" has the truth-condition "There is a time S earlier than T and later than T minus one week such that Jones is hungry at S"; those are contexts in which "Jones was hungry" is used to say that Jones was hungry in the last week. Further complications arise when we consider non-stative verb phrases; the tenseless truth-condition for "Jones walked to the store" at T can't be "There is a time S earlier than T such that Jones walks to the store at S," since the second sentence cannot be true; it takes longer than an instant to walk to the store. As usual in discussions of tense in metaphysics rather than semantics, I will keep these simplifications in place. They will not matter for the philosophical questions I will discuss.

on the right-hand side of (1) is written in the fundamental language. But we can ignore this complication. That sentence is written in a language that is like the fundamental one in containing only tenseless verb forms; and this is the only feature of the fundamental language that is relevant here.

It bears emphasis that the tenseless "is," as it occurs in (1), is a form of "be" that does not exist in English. I have underlined it to distinguish it from the present-tense (singular) form of "be," which is also spelled "is," and in general I will underline tenseless forms of verbs that share a spelling with a present-tensed form, in order to prevent confusion.[6]

By using the tenseless "is" the tenseless theory is going in for linguistic innovation. It is introducing and giving meaning to a new bit of vocabulary that most native English speakers have not encountered.[7] And the theory does not reserve "be" for special treatment; it similarly introduces new tenseless forms of every verb. Of course some native English speakers have encountered these tenseless forms: they include those who have studied the philosophy of time, and also those who have studied spacetime physics, since describing spacetime as a whole requires a tenseless language. These people have incorporated the new tenseless verb forms into their ideolects and easily communicate with each other using them. But these people are in enough of a minority that their usage of these tenseless forms is not

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[6]English does have tenseless verb forms: the tenseless forms of "be" are "be" itself — the so-called "plain form" — and the participles "being" and "been." But none of these means what "is" means. None can be the main verb in a main (as opposed to subordinate) declarative clause. (There are a few isolated exceptions to this, for example "So be it.") J. J. C. Smart was, to my knowledge, the first tenseless theorist to print the tenseless "is" in a way that makes it typographically distinct from the present-tense "is" (he used italics) (Smart 1963, 134). Quine, by contrast, thought it "convenient" to "hold to the grammatical present as a form" in his tenseless paraphrases but "treat it as temporally neutral" (Quine 1960, 170). As we will see, writing "is" for both a tensed and tenseless form is apt to cause confusion.

[7]Or at least they are *trying* to give meaning to this new bit of vocabulary; one might argue that the tenseless theory of time is false on the ground that "is," and therefore any theory stated using it, fails to mean anything at all (Tichý 1980 for example makes this argument).

sufficient to make them belong to English.[8]

The tenseless theory of time includes the ontological thesis of eternalism: the thesis that there are infinitely many times. A look at the tenseless truth-condition in (1) makes it clear why. The theory had better give "Jones was hungry" a chance of being true. But according to (1) the sentence <u>is</u> true (at T) only if there <u>is</u> a time earlier than T. Take in the variety of past and (so-called) future tensed sentences that had better have a chance of being true, and the theory is going to have to say that there are lots and lots of times earlier than, and later than, T.

3   The Moodless Theory of Modality

The tenseless theory of time says that the fundamental language is tenseless; we use it to state metaphysical truth-conditions for sentences in tensed languages. So the moodless theory of modality should say that the fundamental language is moodless; and that we should use it to state truth-conditions for sentences in modal languages. And just as the tenseless theory's truth-conditions quantify over times, the moodless theory's truth-conditions should quantify over "possible worlds."

So what is a moodless language? The category of mood is diverse; it includes lexical items like the verb "can," the adverb "necessarily," and the adjective "possible"; it also includes the distinction between subjunctive and indicative clauses, and the related distinction between subjunctive and indicative forms of verbs.[9] A moodless language has none of this.

The metaphysical truth-conditions for modal sentences that the moodless theory provides will look just like the truth-conditions modal realism, as David Lewis developed it, provides; in fact at this point they may look like the same theory. (I

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[8]How widespread must the use of a term be to make it belong to English? I don't know. Fortunately, my argument does not depend on the claim that these tenseless forms do not belong to English. What matters is that few English speakers have encountered the tenseless forms. For the sake of simplicity, I will assume that the tenseless forms do not belong to English.

[9]The last distinction is hard to grasp for people who, like me, speak only English, since English lacks verbs which have both subjunctive and indicative forms, with one exception: "be" has a subjunctive form (sometimes called the "irrealis" form) "were," which I will discuss below.

will argue later that this appearance is misleading.) The truth-conditions use the notion of a (maximal) spatiotemporal system: a material object—let's count regions of spacetime as material objects—with the property that any two of its parts are spatiotemporally related, and that anything spatiotemporally related to any of its parts is also one of its parts.[10] Then "It is possible that there be talking donkeys," for example, receives the truth-condition

(2) There is a spatiotemporal system such that there are parts of that spatiotemporal system that are talking donkeys,

and this truth-condition seems to be moodless. In the simplest cases, where a sentence in a modal language P has no names (and so there is no need to talk about counterparts) and no modal vocabulary,

(TC) The metaphysical truth-condition for ⌜It is possible that P⌝ is

⌜There is a spatiotemporal system S such that P*,⌝ where P* is derived from P by restricting all the quantifiers that occur in P to the parts of S. (And while P is to be interpreted as a sentence in a modal language, P* is to be interpreted as a sentence in a moodless language.)

Of course (TC) doesn't tell you the truth-condition of every modal sentence; it is not a complete statement of the theory. But it is all we need for now.

Like the tenseless theory, the moodless theory includes an ontological thesis, in this case the thesis that there are infinitely many spatiotemporal systems. A look at the truth-conditions that (TC) generates makes it clear why. All the possibility claims that are in fact true are only going to come out true in this theory if there are many and various spatiotemporal systems.

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[10]David Lewis famously used "possible world" as a general term for spatiotemporal systems so defined. This may not have been the best choice of terminology: including the sequence of letters "possible" in the general term can suggest that "possible world" is a modal phrase. But the fundamental language is supposed to lack all modal vocabulary! One response is to keep the term "possible world" but deny that the adjective "possible" occurs in it as a constituent; I think it better to avoid the term altogether (see Cameron 2012).

Now I want to focus on the parenthetical addendum to (TC). It says that P* "is to be interpreted" as a sentence in a moodless language. The interpretation of this addendum is where the moodless theory of modality diverges from modal realism. Modal realism says that the truth-conditions (TC) assigns are moodless sentences of English (assuming that P ranges over sentences of English); in particular the theory says that (2), considered as a sentence of English, has a moodless reading. The moodless theory of modality, by contrast, says that the moodless reading of (2) is not a reading it has as a sentence of English. In saying this the theory parallels the tenseless theory of time: that theory says that "Jones is hungry at noon, 11/11/11" has no tenseless reading as a sentence of English. To interpret it as tenseless we must interpret the "is" as "is," which is not a word of English.

One might think that the theory that gets English right here is modal realism, not the moodless theory. The sentence (2) contains no modal verbs (like "can"), no modal adverbs or adjectives, nothing like that. Isn't it then a moodless sentence of English?

No, it is not. Sentence (2) is not moodless; it is indicative, and indicative sentences are not moodless.

Why think that (2) is indicative? Since (2) is quite a long sentence, let's focus instead on a short one like

(3) Jones is hungry.

If (3) is indicative, then so is (2); and (3) is indicative. For one bit of evidence, think first about the subjunctive counterpart of (3), namely "Jones were hungry." This clause, like subjunctive clauses generally, occurs almost exclusively as a subordinate clause, as in "I wish Jones were hungry." One mark that it is subjunctive is that it can be the antecedent of a subjunctive conditional, as it is in "If Jones were hungry, he would be looking for something to eat." Well the indicative counterpart of this conditional is "If Jones is hungry, he is looking for something to eat," in which (3) occurs as an antecedent. So (3) is indicative.[11]

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[11]You can tell that "Jones were hungry" is subjunctive not just by noting the linguistic contexts in which it may occur but also by noting that it contains "were," the subjunctive form of "be." (Of course the sequence of letters "were" is also the

You might accept that (3) has an indicative reading and reply that it is ambiguous, that it has both indicative and moodless readings. But I see no evidence for this thesis. For my part, I can't access two such readings.

So the moodless theory says that (2), "There is a spatiotemporal system such that there are parts of that spatiotemporal system that are talking donkeys," interpreted as a sentence of English, is not moodless, and so is not a moodless truth-condition for "It is possible that there be talking donkeys." To interpret it as a moodless truth-condition, the moodless theory says, it must be interpreted as a sentence in some other language. To avoid confusion, the moodless theory should do what the tenseless theory did: adopt a typographical convention to make clear which sentences are to be interpreted as sentences of a special language other than English. The tenseless theory underlines tenseless verbs; I will have the moodless theory write the verbs of moodless sentences in small caps. The moodless theory's truth-condition for "It is possible that there be talking donkeys," then, looks like this: "There IS a spatiotemporal system such that there ARE parts of that spatiotemporal system that ARE talking donkeys."

It might seem a small thing, this disagreement over whether (2) has a moodless reading in English. But in fact I think it makes a big difference. Let's now see how this disagreement gives the moodless theory of modality an advantage over modal realism.

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past plural indicative form of "be," but obviously "were" in "Jones were hungry" is not this form, since the subject is singular.)

The verb "be" is unique in English in having a subjunctive form; but a clause can be subjunctive without containing the subjunctive form of a verb. Clauses lacking "be" are in fact ambiguous between a subjunctive interpretation and an indicative interpretation. For example, "Jones had run to the store yesterday" can be read as past perfect indicative or as the (simple) past subjunctive. You get the indicative reading in discourses like "Smith asked Jones to run to the store; Jones declined on the ground that he had run to the store yesterday." You get the subjunctive reading in the conditional "If Jones had run to the store yesterday, he wouldn't need to do it today." On the subjunctive reading the "had" has what some grammar books call a "modal remoteness" interpretation rather than a past tense interpretation (Huddleston and Pullum 2005, 46).

4   The Problem of Advanced Modalizing

John Divers has argued that modal realism cannot use (TC) to give truth-conditions to *all* sentences of the form "It is possible that there be Fs"; this is (one aspect of) the "problem of advanced modalizing" (Divers 2002, 48–49). My claim will be that the moodless theory does not need to revise (TC), and that this makes the theory better.

The problem can be put in the form of an argument. Here is the argument, with each premise followed by a reason to believe it ("M" stands for either modal realism or the moodless theory):

1. If M is true, then there are many spatiotemporal systems.

Surely both theories say this.

2. If M is true, then "It is possible that there be many spatiotemporal systems" is true iff there is a spatiotemporal system that has many spatiotemporal systems as parts.

This is just an application of (TC).

3. No spatiotemporal system has many spatiotemporal systems as parts.

This is true by the definition of "spatiotemporal system." Now we can draw some conclusions:

4. So if M is true, it is false that it is possible that there be many spatiotemporal systems [from 2 and 3].

5. So if M is true, "If P, then it is possible that P" has a false instance[12] [from 1 and 4].

6. But "If P, then it is possible that P" has only true instances (indeed, each instance is a logical truth).

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[12]When generating an instance of this schema the sentence going in for the second "P" must have its main verb changed to its plain form; without doing this "possible" has its epistemic meaning.

Just look in any modal logic textbook!

7. Therefore, M is false.

Divers thinks that modal realism, faced with this argument, should reject 2 by giving up the claim that (TC) gives truth-conditions to all sentences of the form "It is possible that P" (where P meets the restrictions stated earlier).

The moodless theory does not need to do this.

What reply can the moodless theory give? It will start by asking whether "there are many spatiotemporal systems" in the consequent of line 1 is supposed to be an indicative clause or a moodless clause.[13]

Suppose it is meant to be indicative. Then line 1 is false. What the theory says is that there ARE, moodlessly speaking, many spatiotemporal systems. It does not say that there are (indicative) many spatiotemporal systems. Indeed, as the argument makes clear, it would be a mistake to assert that, since it would then be asserting something that (by its own lights) has a false truth-condition.

Suppose, on the other hand, that line 1 is to be read as moodless. Then to avoid equivocation we must read line 2 as

2*. If M is true, then "It is possible that there ARE many spatiotemporal systems" is true iff there IS a spatiotemporal system that HAS many spatiotemporal systems as parts.

But this is false. The theory uses (TC) to give truth-conditions to ⌜It is possible that P⌝ when P is a modal sentence. It says nothing when P is moodless, as it is in line 2*.[14]

This reply to the argument perfectly parallels the tenseless theory of time's reply to the analogous argument. Here is the argument:

1. If the tenseless theory of time (TTT) is true, then there are many times.

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[13]I have written the argument as it would be written by someone unaware of the small-caps convention I just introduced. So the lack of small caps does not, in this case, guarantee that the consequent is indicative.

[14]"But then what is the truth-condition of the quoted sentence?" I answer this in section 6.

2. If TTT is true, then "sometimes, there are many times" is true now iff there is a time such that many times are parts of it.

3. But no time has many times as parts of it.

4. So if TTT is true, then it is false that sometimes, there are many times.

5. So if TTT is true, "If P, then sometimes P" has a false instance.

6. But "If P, then sometimes P" has only true instances (indeed, each instance is a logical truth).

7. So TTT is false.

The tenseless theory says that there is no reading of "are" in "there are many times" on which lines 1 and 2 are both true. If "are" is in the present tense then line 1 is false; the theory certainly does not say that there are (presently) many times. It does say that there <u>are</u> many times. But if "are" in the argument is the tenseless "<u>are</u>" then line 2 is false. Line 2 is only true as a claim about the truth-condition assigned to a tensed sentence.

Divers, again, thinks that modal realists should respond to the problem of advanced modalizing by revising (TC) and then rejecting line 2 of the argument. I will repeat (TC) for reference:

(TC) The metaphysical truth-condition for ⌜It is possible that P⌝ is

⌜There is a spatiotemporal system S such that P*,⌝ where P* is derived from P by restricting all the quantifiers that occur in P to the parts of S. (And while P is to be interpreted as a sentence in a modal language, P* is to be interpreted as a sentence in a moodless language.)

Divers thinks that modal realists should say this: (TC) does not give the right results when some quantifier in P is an unrestricted quantifier (in the relevant context). Instead, the metaphysical truth-condition for ⌜It is possible that P⌝ in a context where the quantifiers in P are unrestricted is P itself; the modal operator is redundant.[15]

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[15]Williamson (2013, 16–17) also endorses the claim that modal realism should give this kind of truth-condition when quantifiers are unrestricted.

If the modal realist says this then they can say that line 1 of the argument is only true when the quantifier is unrestricted. Modal realism asserts that there are many spatiotemporal systems *unrestrictedly speaking*; it does not assert this when the quantifier is restricted to this spatiotemporal system. But line 2, which comes from applying (TC), is only true when the quantifier is restricted.

The moodless theory's reply to this argument is better than modal realism's. For one thing, the modal realist reply looks ad hoc. Modal realism starts with the slogan that what is possible is what is true when you restrict your attention to some spatiotemporal system or other. This slogan is revised in the face of an argument—but, it seems, only to avoid the argument, not because the revision has some independent motivation. That is not a good way to build a theory. For another thing, the modal realist reply makes the theory more complicated. The truth-conditions for ⌜It is possible that P⌝ now depend on features of P. The moodless theory, which asserts no such dependence, is simpler, and simplicity is a virtue in a theory.

5 Quantifiers

I said that the moodless theory does not assert "there are many spatiotemporal systems," at least not when it is read as indicative, and have advertised this as a feature of the theory. However, now that the distinction between restricted and unrestricted quantifiers is on our radar, you may wonder whether it is actually a bug. Surely the moodless theory should assert this sentence, even when read as indicative, if its quantifier is unrestricted?

In reply the mooodless theory should say that an indicative clause cannot contain a completely unrestricted quantifier. Indeed, it should say, it is part of the function of the indicative mood to restrict quantifiers to the spatiotemporal system of utterance. The truth-conditions the theory gives to (what we might call) indicative quantifiers makes this clear. "There are (indicative) martian outposts" has, at spatiotemporal system S, the truth-condition: there ARE parts of S (there's the restriction) that are martian outposts.[16]

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[16]Another bit of evidence that the function of the indicative mood is to restrict things to the spatiotemporal system of utterance (or, neutrally, to the actual world) comes from the way it interacts with predicates (what follows comes from

That's what the moodless theory says anyway; plenty think the theory is wrong here. Those who take modality as primitive think an indicative quantifier can be completely unrestricted. It is not my aim here to defend the moodless theory's metaphysical truth-conditions for sentences with indicative quantifiers. The point I do want to make is that the moodless theory, in saying this, perfectly parallels the tenseless theory of time. That theory says that no present tensed quantifier can be completely unrestricted. Indeed, it is part of the function of the present tense to restrict quantifiers to the time of utterance. The truth-conditions the theory gives to present-tensed quantifiers makes this clear. "There are (present tense) dinosaurs" has, at T, the truth-condition: there <u>are</u> among the contents of T (there's the restriction) dinosaurs.[17]

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Wehmeier 2004). In "If the economy had collapsed yesterday, someone who is rich would be poor" the predicate "is rich" denotes people who have a sufficient amount of money *in this spatiotemporal system,* even though the antecedent has directed us to another spatiotemporal system. That's because "is rich" is in the indicative. Look at what happens when you make it subjunctive: "If the economy had collapsed yesterday, someone who would be rich would be poor." Now the consequent is a contradiction, because now the subjunctive "would be rich" denotes people with a sufficient amount of money in the spatiotemporal system the antecedent has directed us to.

[17]A referee suggested that ordinary people (non-philosophers) can readily hear "There are (present tense) many times earlier than this one" in a way that it is true. But the tenseless theory, as I am understanding it, gives this sentence a false truth-condition. If the referee is right, is this is a problem for the theory? That depends on what "hear in a way that it is true" means. If it means that ordinary people accept the proposition that the sentence expresses, then this is a problem for the theory. But there is, I think, a way for people to "hear it in a way that it is true" without accepting that proposition. That way works by pragmatic mechanisms: mechanisms by which the proposition the audience comes to accept differs from the proposition expressed by the sentence used. Maybe the audience notices (even if subconsciously) that the sentence cannot be true because it is in the present tense, and charitably interprets the speaker as having tried to convey a proposition that could be true; they may, for example, interpret the speaker as having tried to convey that there *have been* many times earlier than this one. The tenseless theory agrees that this is true. (We do this kind of re-interpretation all the time when people make grammatical slips, often without noticing it.)

This helps make clear how the moodless theory's response to the problem of advanced modalizing is similar to modal realism's response, and how it is different. Both theories say that line 1,

1. If M is true, then there are many spatiotemporal systems,

is true when the quantifier is unrestricted and false when it is restricted. The moodless theory goes on to say that to get the unrestricted reading the sentence must be read as moodless, a reading it lacks in English. Modal realism, by contrast, thinks that the unrestricted reading is one it has in English.

6 Expanded Languages

I said that, according to the moodless theory, the sentence

(4) It is possible that there ARE many spatiotemporal systems,

does not have the truth-condition that there IS a spatiotemporal system that HAS many spatiotemporal systems as parts. When I said this I skirted the natural follow-up question: just what truth-condition does the moodless theory assign to (4)? Behind this question lies an objection: when this question is answered the problem of advanced modalizing, far from having been solved, will just re-appear.

The first thing someone who likes the moodless theory should do, in response to this, is challenge the question's presupposition. "There ARE many spatiotemporal systems" is a sentence in a moodless language, call it L, that the moodless theory uses to give moodless truth-conditions. And L, being moodless, lacks modal adjectives like "possible." The string of letters (4) then just is not a sentence in L. So it has no truth-condition (in L). The question of what its truth-condition is just does not arise.

I expect this to be a little unsatisfying; it invites a response like this:

I have asked what the truth-condition is for (4) because I want to know whether, according to the moodless theory, it is true. And of course to ask whether (4) is true is to ask whether, according to this moodless theory, it is possible that there ARE many spatiotemporal systems. That

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is either possible or impossible, and I want to know which. Now by saying that (4) is not a sentence of L, you are dodging this question. Maybe this question can't be asked using any sentence of L. Maybe L isn't powerful enough to express it. So what? The question is still out there to be asked. We just need to find another way to ask it. Surely there is such a way: we could, for example, just expand L to a bigger language L+ that includes "possible," and ask the question in L+. (And in fact that's how I managed to ask the question a few sentences back.)

I think that someone who likes the moodless theory should deny that there is a question out there to be asked, and deny that L can be expanded to L+. This is another way (or another aspect of the way) in which the moodless theory differs from modal realism (as usually understood anyway). Divers assumes that when the modal realist uses "There are many spatiotemporal systems" to say something true, she should accept that it makes sense to ask about the modal status of what she said (Divers 2014, 862–63).[18] And it is hard to see how this could be rejected: after all, the sentence modal realism is using is a sentence of English, so the result of prefixing it with "It is possible that" is also a sentence of English, which is presumably either true or false.

What grounds does the moodless theory have for denying that the moodless language L's lack of (for example) "possible" makes it expressively incomplete? Well, the theory can say, modal languages contain "possible," "necessary," and other modal vocabulary in order to talk about certain aspects of reality that they would otherwise be unable to talk about. They are a way to talk about what spatiotemporal systems other than ours are like. Modal languages cannot talk about those aspects directly, since those languages' indicative quantifiers cannot reach that far on their

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[18]There is also some evidence that David Lewis accepted that it made sense to ask about the modal status of bits of "advanced modalizing." At one point he calls our knowledge that there are talking donkeys in some spatiotemporal system "necessary knowledge," which presumably means "knowledge of a necessary truth" (1986, 112); if so, then Lewis thought it necessary that there are talking donkeys in some spatiotemporal system. At another point he says that he does not forbid "mixture of ordinary modal language and talk of counterparts" (196; thanks to a referee for this reference).

own. But a moodless language with unrestricted quantifiers can talk about those aspects of reality directly. So such a language is missing nothing through its lack of modal vocabulary.

Compare this to the analogous response to the analogous argument against the tenseless theory of time. The tenseless theory says that there <u>are</u> many times. Was that always the case? Will it always be the case? The tenseless theory says that these questions make no sense. The fundamental language is tenseless, so "Will it always be the case that there <u>are</u> many times?" is not well-formed. But this does not show that the theory's fundamental language is expressively incomplete. It is part of the theory that the role of tense is to give natural languages like English, which lack unrestricted quantifiers, the power to talk about times other than the present time. A language that has that power by other means, as a tenseless language with unrestricted quantifiers does, is therefore not limited in its expressive power for lacking tense.[19]

The objection might linger: what's to stop us from expanding L to L+ by adding "possible," and then having a language in which (4) is a sentence? But it's not enough just to have a language in which the string of letters (4) is a sentence. It has to be a language in which (4) is a sentence *and "possible" means what it does in English*. There certainly are expansions of L that contain an adjective spelled "possible." But, the moodless theory will say, in none of them does this word mean what it does in English. It is part of the meaning of "possible" in English (and of its translation into other natural languages), the theory will say, to introduce a quantifier over spatiotemporal systems that restricts modal (for example indicative) quan-

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[19]A referee questioned whether this is really so, and mentioned as an example propositional attitude ascriptions. One standard claim is that "Jones believes that it is (now) noon," at a time of utterance T, does not mean the same as "Jones <u>believes</u> at T that T <u>is</u> noon." This is a big topic that I can't hope to do justice to here. I'll just point out that many proposed solutions to this problem are consistent with the tenseless theory of time. David Lewis's proposal is one example (Lewis 1979). He still thinks that "Jones believes that it is (now) noon" has a tenseless truth-condition, he just denies that in the truth-condition the object of belief is a proposition; it is instead a "centered proposition" (set of individuals). But sets of individuals can still be described tenselessly, and the belief-relation that relates thinkers to those sets can still be described tenselessly.

tifiers in its scope to the variable it binds. So "possible" in English is semantically linked to other aspects of mood. But the moodless language L lacks any aspects of mood for "possible" to link to. So adding "possible" to a moodless language like L couldn't result in "possible" meaning in L what it means in English.

7   Comparison to Cowling

Sam Cowling, in "The Limits of Modality" (Cowling 2011), presents a response to the problem of advanced modalizing that resembles the one I've proposed for the moodless theory. It will be worth comparing the responses. (Cowling's response is on behalf of a generic reductionist theory, not of the moodless theory or modal realism in particular.)

Like the moodless theory, Cowling wants to deny that there is always an answer to the question "Is that possible, impossible, necessary, contingent, or what?" So he thinks that the victim of the problem of advanced modalizing should reject line 2 of the argument. I think (when wearing my moodless theorist had) that he is absolutely right in his denial and his rejection. The difference between Cowling and the moodless theory comes out when we ask what motivates his denial. When someone asks whether it is possible that there ARE many spatiotemporal systems, why, according to Cowling, should I reject the question?

I can't find an answer to this question in his paper. He does say that "there are many spatiotemporal systems," when used by the reductionist to express a truth, falls outside of the expressive resources of modal logic (485).[20] There is no sentence R in the language of modal logic the translates it, and so there is no sentence $\ulcorner \diamond R \urcorner$ in that language about which we can ask: is it true or false? But: why does the sentence lack a translation? Again, no answer.

The moodless theory has an answer: the true reading of the sentence is the reading on which it means "there ARE many spatiotemporal systems"; since modal logic is the logic of modal languages, its sentence letters are for translating indica-

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[20]He later proposes a new meaning for "possible" on which "It is possible that there are many spatiotemporal systems" is well-formed, and indeed true. But it is a disjunctive meaning, and one of the disjuncts is a non-modal meaning.

tive and subjunctive clauses, not moodless ones like this one.[21]

8 Common Opinion

If a metaphysical theory conflicts with common opinion, that is a mark against it; at least, many metaphysicians think so. Suppose they are right. Does the moodless theory of modality conflict with common opinion? David Lewis thought that modal realism did:

> Modal realism *does* disagree, to an extreme extent, with firm common sense opinion about what there is. [...] When modal realism tells you — as it does — that there are uncountable infinities of donkeys and protons and puddles and stars, and of planets very like Earth, [...] small wonder if you are reluctant to believe it. [...]
>
> I might ask, of course, just what common sense opinion it is with which my modal realism disagrees. Is it the opinion that there do not *actually* exist an uncountable infinity of donkeys? I don't disagree at all with *that* [...] Or is it, simply, the opinion that there do not exist an uncountable infinity of donkeys — with the quantifier wide open, entirely unrestricted, and no 'actually' either explicit or tacit in the sentence? *That* opinion I do indeed deny. But if you ask a spokesman for common sense, out of the blue, which opinion it is that he holds, doubtless he will say that he cannot tell the difference between the two. (1986, 133–34; original emphasis)

If David Lewis thought that modal realism conflicted with common opinion, I take him at his word; it is his theory. But a proponent of the moodless theory of modality will deny that there is any conflict. True, the theory asserts "There ARE uncountably many donkeys," but in asserting this it is not asserting something that common

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[21]How does the translation of an indicative clause into the language of modal logic differ from the translation of its subjunctive counterpart? Actually it doesn't, but that is a problem; see (Wehmeier 2004) for the trouble this causes and a proposal for reforming the formalism. (The reform does *not* involve including moodless sentences.)

opinion rejects. Common opinion can only reject it if a sufficient number of people reject it, but no one, or at best a very few people, reject it. It's not that a huge number of people accept it instead. No, almost no one has even so much as asked him- or herself whether it is true. Almost no one has learned to speak a moodless language (at best, maybe a few metaphysicians have). And someone who has never learned to speak a moodless language is extremely unlikely to ever entertain the thought that there ARE uncountably many donkeys. Of course it is certainly commonly believed that there are (indicative) finitely many donkeys. But this does not conflict with the moodless theory; indeed the theory agrees.

Lewis says that "there are uncountably many donkeys" has in English an unrestricted reading; that's the reading that he (a modal realist) asserts. Well if this is a reading the sentence has in English, then it is a reading that isn't particularly hard for native English speakers to entertain and have an opinion about. So if Lewis is correct then he is right to worry that many many people have rejected it (even if only implicitly or unconsciously). The moodless theory says that he is not correct and that there is no reason to worry.

What the moodless theory says here again parallels what the tenseless theory of time says about the analogous issue (and again what modal realism says does not). The tenseless theory says that there are dinosaurs. Does this conflict with common sense opinion? Some presentists think so: Markosian, after noting that the tenseless theory asserts the existence of non-present things, writes that it is presentism that "the average person on the street would accept" (2004, 48; see also Zimmerman 2007, 221). But what is commonly believed is that there are (present-tense) no dinosaurs, and also that there were dinosaurs. Neither of these conflict with the tenseless theory, which endorses both claims. Is there any common opinion as to whether there are (tenselessly) any dinosaurs? There is not. This question can only be framed in a tenseless language, a language that only specialists in certain parts of philosophy and physics ever encounter. Maybe those specialists have opinions about what there is, including opinions about whether there are dinosaurs; but they are too much of a minority for their opinions to count as common—and anyway, most of them probably believe that there are dinosaurs. Since the vast majority of people have never entertained the question of whether there are dinosaurs,

they have no opinion about its answer.

9   Necessitism

Are there things that exist contingently? Or does everything exist necessarily? Timothy Williamson has defended, not just the yes answer to this second question, but the stronger thesis of *necessitism:* necessarily, everything exists necessarily. Just as surprising as the fact that he accepts this thesis is the fact that he thinks that modal realism entails it. Following Divers, he holds that if modal realism is true, then in contexts where quantifiers are unrestricted modal operators are redundant. In such a context "Necessarily everything necessarily exists" is equivalent to "Everything exists." Since the second is true, indeed a triviality, the first is true if modal realism is true (Williamson 2013, 17).

Now it is a good question whether this is really that bad for modal realism. For that theory says that "Necessarily everything necessarily exists" also has a reading (where the quantifier is restricted) where it is not equivalent to a triviality. So if modal realism is true then necessitism is ambiguous. Why can't a modal realist say that the debate that non-modal realists are having about necessitism is, in their terms, a debate about this restricted reading, not the unrestricted one?

Williamson has an answer to this question (2014, 758–59), but it is not my aim here to discuss it. What I want to point out is that if the moodless theory of modality is true, necessitism is not ambiguous;[22] and on its one reading, it is not a triviality (though of course it may be true; the moodless theory is not incompatible with necessitism).

According to the moodless theory the moodless truth-condition for "Necessarily everything necessarily exists" is as follows (since this claim involves de re modality we will need to talk about counterparts):

> For every spatiotemporal system S, every part R of S is such that, for
> every spatiotemporal system T, some part of T is a counterpart of R.

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[22]Well even Williamson should think that "Necessarily everything necessarily exists" is ambiguous, or at least context-sensitive, since the quantifier is context-sensitive. By "ambiguous" I mean that it has more than one possible meaning that should be of interest to metaphysicians.

On this reading the "everything" becomes the restricted quantifier "every part R of S." And — here's the important bit — there is no reading of the sentence where the quantifier is completely unrestricted.

Again it is worth looking at the parallel with the tenseless theory of time. The claim that necessitism is true if the moodless theory of modality is true is similar to the claim that nothing ever changes if the tenseless theory of time is true, a claim often made as part of an argument against the tenseless theory. (This claim is not perfectly analogous to necessitism: the strict analogue is the weaker claim that if the tenseless theory is true then nothing every comes into or goes out of existence. Looking at it from the other direction, necessitism is the thesis that there cannot be contingency *of a certain sort*: there cannot be contingency in what there is. If "Nothing ever changes" means "If P was ever or will ever be true, then P has always been and will always be true," then its exact modal analogue is "If P is possibly true, then P is a necessary truth": the claim that any kind of contingency is impossible. But the analogy between the claims I'm focusing on is close enough for our purposes.)

The tenseless theory of time is sometimes called the "static" theory of time.[23] But this is a terribly inapt description of the theory. It is supposed to convey the thought that, according to the theory, nothing ever changes. If you ask "what do you mean by 'according to the theory nothing ever changes'" you might get this response: "Well for example if Jones is standing at noon 11/11/11 and sitting at 1pm 11/11/11 then he is *always* standing at noon 11/11/11 and sitting at 1pm 11/11/11." But this speech does not say anything true. Suppose that in fact Jones was standing at noon 11/11/11 and sitting at 1pm 11/11/11. Then on one interpretation the speech amounts to this:

> Jones <u>is</u> always standing at noon 11/11/11 and <u>is</u> always sitting at 1pm
> 11/11/11.

On this reading, the sentence is supposed to be a sentence in a tenseless language.

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[23]Calling it this is a widespread phenomenon; for one example see (Bardon 2013, 87).

But a tenseless language lacks adverbs like "always"[24] so the displayed sentence is not well-formed and thus not true (or false). On another interpretation, the speech amounts to

> Jones is (present tense) always standing at noon 11/11/11, and is always
> sitting at 1pm 11/11/11.

But this sentence is odd. Insofar as I understand the sentence, it is false, for reasons that have nothing to do with the tenseless theory of time. *Stand at noon 11/11/11* is something Jones could do at most once; so it couldn't be true that he always does it.[25]

Since the speech I have been discussing is supposed to articulate the thought that in the tenseless theory of time nothing ever changes, it follows that either there is no such thought, or it is false.

The tenseless theory of time says that, speaking fundamentally, in a tenseless language, the question of "whether things will continue to be as they are" makes no sense. This question only makes sense at a non-fundamental level of description, a level of description couched in tensed language. At this level, the yes answer does not follow from the tenseless theory alone (though of course some tenseless theorists might like the yes answer).

It is the same with necessitism. In the moodless theory of modality, "If X exists, then necessarily, X exists" has two interpretations. First interpretation: "If X ᴇxɪsᴛs, then necessarily, X ᴇxɪsᴛs." This is nonsense; it is not well-formed in a

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[24]Or it has them but they lack temporal interpretations: maybe in a tenseless language "Quadratic equations always <u>have</u> roots" makes sense. For simplicity I will ignore non-temporal interpretations. (David Lewis argued that adverbs of quantification like "always" have just one interpretation; he held that they are unselective quantifiers, binding all free variables in their scope (Lewis 1998). Maybe this means that in some sense "always" can have the same interpretation in a tensed and in a tenseless language. Then I should say that I am ignoring cases where "always" lacks temporal *significance*; in the displayed sentence "always" is supposed to have temporal significance.)

[25]If somehow the calendar "resets" every so often, so that there are many times called "noon 11/11/11," then the sentence ceases to be odd, and could be true. But whether it was would have no bearing on the tenseless theory of time.

moodless language. Second interpretation: "If X exists (indicative), then necessarily, X exists." This has the moodless truth-condition "If X EXISTS and IS part of this spatiotemporal system, then each spatiotemporal system HAS a part that IS a counterpart of X." The moodless theory does not assert that this truth-condition obtains (or that it does not); you can accept the moodless theory without being a necessitist, in any sense.

10 Conclusion

In this paper I have presented and developed a new reductive theory of modality, the moodless theory of modality, by following a strict analogy with the tenseless theory of time. The moodless theory is more closely analogous to the tenseless theory than David Lewis's modal realism is. Just as the tenseless theory introduces novel tenseless vocabulary to give tenseless truth-conditions to tensed sentences, the moodless theory introduces novel moodless vocabulary to give moodless truth-conditions to modal sentences. Crucially, the sentences that receive truth-conditions include indicative sentences that contain no modal lexical items, sentences like "There are talking donkeys"; this sentence is in the indicative, so is not already moodless. It is important that the moodless truth-conditions the theory provides cannot be stated in some moodless fragment of English; there is no such fragment (that is adequate for stating truth-conditions), just as there is no tenseless fragment of English adequate for stating tenseless truth-conditions. This property of the theory has a downside: do we really understand these moodless truth-conditions? But it has many advantages: no ad hoc changes to the rules for giving truth-conditions are needed to solve the problem of advanced modalizing; the theory's central ontological claims, stated as they are in an esoteric language, cannot conflict with common opinions about what there is; and there is no reading of the thesis of necessitism on which it is a triviality.

My aim in this paper has not been to convince you to accept the moodless theory; that is a much bigger project. But I do hope to have made you less skeptical. When people stared incredulously at David Lewis maybe they were thinking, I certainly don't think now that there are many spatiotemporal systems, you're going

to need some amazing argument to get me to change my mind, and I haven't seen it. The moodless theory should not evoke this response (or, at least, by its own lights it shouldn't). It says: before hearing about this theory you didn't have any opinions about how many spatiotemporal systems there ARE, anymore than before hearing about the tenseless theory of time you had any opinions about how many dinosaurs there <u>are</u>. The tenseless theory of time says that by coming for the first to time have an opinion about how things <u>are</u> (tenselessly speaking) you can simplify (and in other ways improve) your overall theory of the world. Many philosophers have agreed with this and have come accept the theory. Well then, where is the objection to the moodless theory's claim that, by coming for the first time to have an opinion about how things ARE (moodlessly speaking), you can simplify and in other ways improve your overall theory?[26]

References

Bardon, Adrian 2013. *A Brief History of the Philosophy of Time.* Oxford University Press.

Bourne, Craig 2009. *A Future for Presentism.* Oxford University Press.

Cameron, Ross 2012. "Why Lewis's analysis of modality succeeds in its reductive ambitions." *Philosophers' Imprint* 12 (8).

Cowling, Sam 2011. "The Limits of Modality." *The Philosophical Quarterly* 61: 473–95.

Divers, John 2002. *Possible Worlds.* Routledge.

——— 2014. "The Modal Status of the Lewisian Analysis of Modality." *Mind* 123: 861–872.

Fine, Kit 2012. "Guide to Ground." In Fabrice Correia and Benjamin Schnieder (eds.), *Metaphysical Grounding.* Cambridge University Press, 37–80.

Huddleston, Rodney and Geoffrey Pullum 2005. *A Students Introduction to English Grammar.* Cambridge University Press.

Lewis, David 1979. "Attitudes de dicto and de se." *The Philosophical Review* 88:

513–43.

——— 1986. *On the Plurality of Worlds.* Blackwell.

——— 1998. "Adverbs of Quantification." In *Papers in Philosophical Logic.* Cambridge University Press, 5–20.

Markosian, Ned 2004. "A Defense of Presentism." In Dean Zimmerman (ed.), *Oxford Studies in Metaphysics, volume 1.* Oxford University Press, 47–82.

Prior, Arthur N. 2003. *Papers on Time and Tense.* Oxford University Press.

Quine, W. V. O. 1960. *Word and Object.* MIT Press.

Rosen, Gideon 2010. "Metaphysical Dependence: Grounding and Reduction." In Bob Hale and Aviv Hoffman (eds.), *Modality: Metaphysics, Logic, and Epistemology.* Oxford University Press, 109–36.

Skow, Bradford 2015. *Objective Becoming.* Oxford University Press.

Smart, J. J. C. 1963. *Philosophy and Scientific Realism.* Routledge & Kegan Paul.

Stalnaker, Robert 1987. *Inquiry.* MIT Press.

Tichý, Pavel 1980. "The transiency of truth." *Theoria* 46: 165–82.

van Inwagen, Peter 2001. "Two concepts of possible worlds." In *Ontology, Identity, and Modality: Essays in Metaphysics.* Cambridge University Press.

Wehmeier, Kai Frederick 2004. "In The Mood." *Journal of Philosophical Logic* 33: 607–30.

Williamson, Timothy 2013. *Modal Logic as Metaphysics.* Oxford University Press.

——— 2014. "Replies to Bricker, Divers, and Sullivan." *Philosophy and Phenomenological Research* 88: 744–764.