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ON A MISAPPLICATION OF THE WORLD-TIME PARALLEL

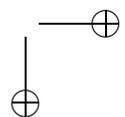
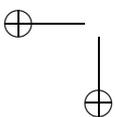
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Abstract

It is widely acknowledged that there is a parallel between the analysis of tense and the analysis of modality. There is a long-standing debate about whether we can give a reductive analysis of tense — can we reduce tensed sentences to tenseless sentences? And there is a similar debate about whether we can give a reductive analysis of modality — can we reduce modal sentences to non-modal sentences? This paper will argue that there is some confusion about just what the precise modal correlate of a tensed or tenseless sentence is.

Philosophers of time frequently talk about a *tenseless* ‘is’.¹ A tenseless sentence is supposed *not* to change its truth value with the passage of time. It is widely acknowledged that there is a parallel between the analysis of tense and the analysis of modality. Just as *is* picks out the present time in a tensed language, *is* can also be used to pick out the actual world in a ‘modal’ language. There is a long-standing debate about whether we can give a reductive analysis of tense — can we reduce tensed sentences to tenseless sentences? And there is a similar debate about whether we can give a reductive analysis of modality — can we reduce modal sentences to non-modal sentences? This suggests the following parallel:

¹Tooley (1997, p. 18) uses the example: “There are (tenselessly) dinosaurs”. Others talk this way too. Quentin Smith 1993, p. 7, defines a ‘B-sentence’ as one which “does not contain a tensed copula or verb”, and places “parentheses around the relevant copulae and verbs” to indicate that they are tenseless. However the issue we are addressing is not the elimination of a tensed verb. Thus it would not count as a reduction of the tensed to the tenseless to translate “There were dinosaurs” as “There are (tenselessly) dinosaurs before the present”, since the latter sentence can equally change its truth value with the passage of time. It matters little to our argument that a sentence such as Tooley’s can be expressed equally well as “There either are, or were or will be dinosaurs”, since although a sentence like this latter may in a sense be said to be ‘tensed’ it still cannot change its truth value as time passes.



FIRST TRY:

corresponding to a tensed sentence is a modal sentence, and corresponding to a tenseless sentence is a *non-modal* (or 'categorical') sentence,

where a non-modal sentence is a sentence whose truth value is supposed to be based irreducibly in the actual. Sider 2003 tries to motivate this kind of modal reductionism:

Sider 2003, p. 184:

Reductionism is required by any ontology that claims to give a comprehensive account of reality in terms of primitive entities and notions that do not include modal notions.

Dyke 2007 notes the similarity between the modal and temporal reductionist projects:

Dyke 2007, p. 279f:

Here we begin to see parallels between the modal and temporal debates. Early on in the temporal debate the question at issue was whether tensed language could be reduced to or replaced by tenseless language. The significance of this linguistic issue, however, was taken to be that it had implications for the metaphysical nature of time. Here, in the debate about modality, the question at issue is whether modal language can be reduced to or replaced by non-modal language. The significance of this linguistic issue is taken to be that it has implications for the question of whether modal entities exist in reality.

Thus one might try to 'reduce' modal properties — like say fragility — to supposedly non-modal properties — like say having a certain physical structure.² The business of reduction then turns towards explanations which attempt to eliminate loaded 'modal' expressions, replacing them by what are (somehow or other) supposed to be less loaded expressions, about some supposedly *more basic* non-modal reality. For instance, in order to progress with the reductionist scheme, we would be supposed to replace a sentence like

[i] This glass is fragile

² See for instance Sider 2001, p. 41f, and 2003, p. 185; and also Mondadori and Morton 1976, pp. 240–242. Melia 2003, p. 13, attributes such a view to Quine.

— meaning something like that this glass would break if it were dropped, even though it is never in fact dropped — with something like

[ii] This glass has a certain molecular structure.

Whether a particular object has a certain physical structure is a contingent fact.³ Trying to give an analysis of such a contingent fact in terms of another contingent fact would be as if we were using one tensed fact to provide the analysis of another tensed fact. And this is what's been missed. The first try is not what the parallel is. We can't proceed from here. We have to address a prior question. *What is the parallel to a tenseless sentence?* It is *not* a non-modal sentence. It is *not* a categorical sentence. It is a *non-contingent* sentence. The logical parallel between time and modality works like this:

SECOND TRY:

corresponding to a tensed sentence is a contingent sentence,
and
corresponding to a tenseless sentence is a non-contingent sentence.

What exactly is a non-contingent sentence? It is a sentence which does not change its truth value from world to world.⁴ While it may seem strange to reduce the contingent to the non-contingent, this is precisely what Lewis 1970 described as the 'indexical theory of actuality' in his comments on Prior 1968.⁵ More importantly, it is exactly analogous to the reduction of

³ One might deny this by claiming that 'glass' *by necessity* has a certain structure. The contingent fact would then have to be that this particular object, which happens to be a glass, would break if dropped, and it would be *this* contingent fact which would be given an equally contingent reduction.

⁴ In distinguishing between a contingent sentence and a non-contingent sentence, we have talked of a truth value with respect to a world, and there is a lot of suspicion about possible worlds. In a similar fashion some philosophers of time — the so-called 'presentists' — are suspicious of other times (see for instance Prior 1967, p. 188f). So instead of speaking of a (semantically) tensed sentence as a sentence whose truth value can change over time, we could say instead that it is a sentence which happens to be true (or false) now but didn't use to be so. The corresponding modal situation would be a sentence which happens to be actually true (or false), but which might not have been so — i.e., a contingent sentence.

⁵ Prior had written (1968 p. 191):

I wonder whether anybody wants to put forward anything like the following as a piece of serious metaphysics: There really are such objects as possible worlds, and what we loosely describe as propositions of modal logic are in fact predicates of which these objects are the subjects.

the tensed to the tenseless by those who call themselves the followers of the 'new B theory of time'.⁶ Whatever one may say about the standard attempts to reduce the modal to the non-modal, one thing they have in common is that, except for Lewis's modal realism (Lewis 1986a), they do not attempt to reduce the contingent to the non-contingent.

In the above discussion we have talked rather loosely — sometimes in terms of sentences, and sometimes in terms of 'facts' — and we have described reduction as if it were a kind of translation. Dyke 2007 is concerned to argue that there is no need to require a translation of each modal sentence into non-modal language. And indeed the first try can easily be put in non-linguistic terms. All we need is to answer 'no' to the question:

- (1) Can there be two worlds which coincide in all their *non-modal* facts, but differ in their modal facts?⁷

The temporal analogue would seem to be

- (2) Can there be two times which coincide in all their *tenseless* facts, but differ in their tensed facts?

What exactly does (2) mean? If a tenseless fact is one which does not change its truth value from time to time — a truth which is always so — then the answer to (2) is a trivial 'yes', and so the parallel might appear to break down. However, that is the sense in which the modal correlate of a tenseless fact is a non-contingent fact — a fact which does not change its truth value from

He follows this up on p. 192 with

... this seems a tall story, and as I have said, I doubt whether anyone seriously believes it. But plenty of people believe an exactly similar story about tenses, i.e. believe that tensed propositions are predicates of "instants", and that there is — really is — an instant at which I unalterably "am" drinking.

In footnote 6 on p. 185 of Lewis 1970, Lewis says, "A.N. Prior states the indexical theory of actuality in [Prior 1968] but, sadly, he goes on to say 'this seems a tall story, and ... I doubt whether anyone seriously believes it.'"

⁶ See for instance Mellor 1981. The new B-theory distinguishes itself from such views as that of Russell 1915 who seems to have supposed that every tensed sentence could be translated into a semantically equivalent untensed sentence. The new B theory explains tensed truth in terms of truth at a time, in just the way that you can explain modal truth in terms of truth in a world.

⁷ For an elaboration of this see Melia 2003, pp. 1–4.

world to world. So that the modal analogue of (2) in this sense is not (1) but is:

- (3) Can there be two worlds which coincide in all their *non-contingent* facts, but differ in their contingent facts?

The answer to (3) is also a trivial 'yes', since any two worlds will coincide in their non-contingent facts.

An important feature of (1) is that it is neutral on the question of whether there is a metaphysically privileged 'actual' world. An answer 'no' to (1) would not only be acceptable to an 'actualist' like Sider, but would also be acceptable to Lewis, who holds (Lewis 1986b, p. ix) that a world is constituted by "local matters of particular fact", so that all modal truths in a world are determined by (or supervene on if you prefer that language) non-modal facts. So if (2) is the temporal parallel of (1), then (2) would be neutral on the question of whether there is a metaphysically privileged present. Yet that question is one form of the difference between the tensed and the tenseless theories of time. For that reason, even if there is a way of construing (2) which makes it parallel with (1), the difference between the tensed theory of time and the tenseless theory of time cannot give any enlightenment to it. Metaphysicians who allude to the parallel between time and modality need to take extreme care that they get its structure right.⁸

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