

# Evans's Challenge to Temporalism\*

Jonny McIntosh

## Abstract

This paper concerns a challenge raised by Gareth Evans in his article 'Does Tense Logic Rest on a Mistake?' to *temporalism*, the view that propositions, the objects of speech acts like assertion, can vary in truth value over time. I set out the challenge, arguing that it is best understood in terms of a distinction Michael Dummett draws between what he calls the *assertoric content* of a sentence, i.e., the proposition expressed, and its *ingredient sense*, i.e., the sentence's contribution to the propositions expressed by more complex sentences of which that sentence is a constituent part.

*Keywords:* temporalism, relativism, Gareth Evans, assertoric content, ingredient sense

## 1 Introduction

This paper concerns a challenge raised by Gareth Evans in his article 'Does Tense Logic Rest on a Mistake?' to *temporalism*, the view that propositions, the objects of speech acts like assertion, can vary in truth value over time. Temporalism is a prominent species of *relativism*, the view that propositions can vary in truth value over some or other parameter—standard of taste, moral sensibility, etc. Though recent debate over relativism has been intense, Evans's challenge to temporalism has been largely neglected.<sup>1</sup> Reasons for this are not hard to find. For one thing, it is not immediately clear that Evans intends to present a challenge to temporalism. The main aim of his paper is to argue that the notion of truth relative to a time, employed in the semantics of tense logic, cannot be understood by analogy with the more familiar notion of truth relative to a possible world, employed in the semantics of modal logic developed by Saul Kripke and others in the 1950s and 60s. The argument, however, is not that the notion of truth relative to a time is incoherent. On the contrary, Evans argues that, though it cannot be understood by analogy with the notion of truth relative to a possible world, the notion of truth relative to a time *can* nevertheless be understood. At best, this raises a puzzle about the nature of any challenge to temporalism Evans might be taken to pose: it cannot simply be that the notion of truth relativised to a time is incoherent. But then, what exactly *is* the challenge? Worse, it might be thought to show that, far from presenting a challenge to it, Evans is in fact presenting a defence of temporalism, however limited in scope, by showing that it is possible to make sense of its central notion.

Addressing these concerns, I argue that Evans's challenge is best understood in terms of a distinction Michael Dummett has drawn between the *assertoric content* of a sentence, i.e., the proposition expressed, and its *ingredient sense*, the contribution that the sentence makes to the propositions expressed by more complex sentences of which that sentence is a constituent part. Put briefly, in arguing that the notion of truth relative to a time can be understood, Evans argues that it may be that the ingredient sense of a sentence can vary in truth value over times; attention to the details of the argument seems to reveal that the same cannot be said of its assertoric

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<sup>1</sup> For a recent collection of papers on the topic, see Garcia-Carpintero and Kölbel (2008).

content, however: even if the notion of truth relative to a time can be understood, *propositions* are true, if at all, relative to all times. Evans's argument thus seems to show that, even if its central notion can be understood, temporalism itself must be rejected.

## 2 The core argument: some preliminaries

Evans's core argument concerns the relationship between tense logic, founded and developed by Arthur Prior, and modal logic.<sup>2</sup> At least superficially, tense logic and modal logic are quite similar. The distinctive feature of tense logic is its treatment of tenses and temporal adverbs as operators, achieved via semantic clauses like (1) and (2) which assign sentences truth-values relative to times. Structurally, this parallels the treatment in modal logic of expressions of modality like 'possibly' and 'necessarily' as operators via semantic clauses like (3) and (4) assigning sentences truth-values relative to possible worlds.

- (1)  $(\forall t)$  ('It is raining' is true<sub>*t*</sub>  $\equiv$  it is raining at *t*)<sup>3</sup>
- (2)  $(\forall t)$   $(\forall S)(\ulcorner \text{PAST}(S) \urcorner$  is true<sub>*t*</sub>  $\equiv (\exists t')$  ( $t' < t$  &  $S$  is true<sub>*t'*</sub>))
- (3)  $(\forall w)$  ('Snow is green' is true<sub>*w*</sub>  $\equiv$  snow is green in *w*)
- (4)  $(\forall w)$   $(\forall S)(\ulcorner \text{POSSIBLY}(S) \urcorner$  is true<sub>*w*</sub>  $\equiv (\exists w')$  ( $S$  is true<sub>*w'*</sub>))

In the first instance, Evans's argument is designed to show that these structural similarities in fact disguise important differences—differences which undermine any attempt to understand tense logic by analogy with modal logic.

The argument proceeds by examining different ways in which the truth relative to a time or possible world of *sentences* might connect up with the correctness of *utterances*. In the background here is a certain conception of semantic theorising. This can be understood to arise from two thoughts. The first thought is that it is a requirement on any adequate semantic theory for a language that it be capable of serving as a *theory of sense*, i.e., that it articulate principles knowledge of which would enable a speaker to use and understand the language. The second thought is that it is a conceptual truth about assertion that any particular act of assertion can be assessed as correct or incorrect depending on whether or not the proposition that is thereby expressed—what is thereby asserted or said—is true.<sup>4</sup> Since a central component of the ability

<sup>2</sup> For Prior's work on tense logic, see Prior (1957, 1967, 1968).

<sup>3</sup> The notation 'true<sub>*t*</sub>', which is Evans' own, raises some issues which deserve mention. The subscript '*t*' is not to be understood as syncategorematic, but as occurring in a position of quantification. This being so, why not use the notation 'true(*t*)'? A further issue concerns his use of the notation 'Correct-at-*t*(*u*)' in (5) below. Again, '*t*' here is to be understood not as syncategorematic, but as occurring in a position of quantification. So why not use the notation 'Correct(*t*, *u*)'? Or, consistent with the notation 'true<sub>*t*</sub>', 'Correct<sub>*t*</sub>(*u*)'? While I am not entirely sure, it may be that Evans wanted to leave open whether the relevant notions of truth and correctness are to be understood as *relations* between sentences or utterances and times or rather as *properties* of sentences or utterances, subject to temporal modification. The different notations reflect the fact that times *may* be playing different roles in each case. Thanks to Mark Eli Kalderon for pressing me on this.

<sup>4</sup> An anonymous referee put it to me that, however appropriate it may be in arguing that tense logic cannot be understood by analogy with modal logic, the claim that an assertion can be assessed as correct or incorrect depending on whether or not the proposition expressed is true begs the question against temporalism, as the temporalist denies that propositions have truth values *simpliciter*. But the temporalist does *not* deny that propositions have truth values *simpliciter*. According to the temporalist, propositions can vary in truth value over time, and pending

to use and understand a language is the ability to use, and to understand the use of, certain sentences of the language to perform assertions, the idea is that knowledge of a semantic theory for a language therefore ought to enable a speaker “to determine that certain utterances are correct or incorrect” (Evans, 1985, p. 346).

I will look at this conception of semantic theorising in more detail later, but it is worth stressing right at the outset that the idea is not that knowledge of a semantic theory should suffice for determining whether or not certain utterances are correct or incorrect, but that it should be an *enabling* condition, i.e., that knowledge of the theory *together with appropriate worldly knowledge*—about the time of utterance and the state of the weather at that time, for example—should jointly suffice for determining whether or not certain utterances are correct.<sup>5</sup>

In order to determine whether the semantic theories of tense logic can meet this requirement, we need to know how the tense logician’s notion of truth relative to or at a time, expressed by means of the predicate ‘true<sub>t</sub>’, is supposed to connect up with the relevant assessment of utterances as correct or incorrect. To this end, Evans considers three interpretations of ‘true<sub>t</sub>’—which he takes to exhaust the available options—together with the three semantic theories,  $T_1$ ,  $T_2$ , and  $T_3$ , that result when (1) and (2) are interpreted in each of these ways. In each case, Evans argues, tense and modal logic turn out to be crucially dis-analogous with another.

The argument is presented over the next two sections. §3 discusses the first interpretation and §4 discusses the second and third. Evans argues that, while its modal analogue is unproblematic, the first interpretation of ‘true<sub>t</sub>’ is untenable. In the case of the second and third interpretations, by contrast, the situation is reversed: while the modal analogues are untenable, the interpretations of ‘true<sub>t</sub>’ are unproblematic. It is this that raises the interpretive puzzle mentioned in the introduction: if Evans is arguing that there are interpretations on which the notion of truth relative to a time is unproblematic, what exactly is the challenge to temporalism supposed to be? I take up this question in §5, arguing that it is best understood in terms of Dummett’s distinction between assertoric content and ingredient sense. §6 concludes, briefly touching on the question of whether Evans’s challenge to temporalism can be met.

### 3 The first interpretation

On the first, “revolutionary” interpretation of ‘true<sub>t</sub>’, specified by (5), an utterance is correct *at a time* just in case the sentence uttered is true at that time.

$$(5) (\forall t)(\forall S)(\forall u) [\text{Of}(S, u) \supset (\text{Correct-at-}t(u) \equiv \text{True}_t(S))]$$

According to Evans,  $T_1$ , i.e., the semantic theory that results when (1) and (2) are interpreted this way, implies that the correctness of an utterance may vary over time. If it was raining yesterday but is not raining today, for example,  $T_1$  seems to entail that an utterance of ‘It is raining’, made yesterday, will be correct yesterday but incorrect today. “Such a conception of assertion is not coherent”, Evans claims (1985, p. 349), pressing the following two objections:

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further argument, this is consistent with propositions having truth values *simpliciter*. Thus, while the lesson of Evans’s argument may ultimately be that she should reject it, the claim that an assertion can be assessed as correct or incorrect depending on whether or not the proposition expressed is true does not beg the question against temporalism.

<sup>5</sup> This is a point on which Evans himself seems to have been unclear. For although the argument to be spelt out below relies only on this weaker, enabling claim, at points in ‘Does Tense Logic Rest on a Mistake?’ Evans does in fact invoke the stronger, sufficiency claim in the course of an argument to the effect that the third interpretation of ‘true<sub>t</sub>’, discussed below, “involves the recognition of a hitherto unknown form of embedding” (1985, p. 362).

In the first place, I do not understand the use of our ordinary word ‘correct’ to apply to one and the same historical act at some times and not at others, according to the state of the weather. Just as we use the terms ‘good’ and ‘bad’, ‘obligatory’ and ‘permitted’ to make an assessment, once and for all, of non-linguistic actions, so we use the term ‘correct’ to make a once-and-for-all assessment of speech acts. Secondly, even if we strain to understand the notion ‘correct-at-*t*’, it is clear that a theory of meaning which states the semantic values of particular utterances solely by the use of it cannot serve as a theory of sense. If a theory of meaning permits a subject to deduce merely that a particular utterance is now correct, but will later be incorrect, it cannot assist the subject in deciding what to say, nor in interpreting the remarks of others.

(Evans, 1985, p. 349)

The first objection is that the ordinary notion of correctness, unlike the one that  $T_1$  seems to employ, is one on which the correctness of an utterance cannot vary over time. We can understand this in terms of a line of thought stressed by Philip Percival (1994): to say an utterance is correct is to say that, in performing it, the speaker successfully pursues a certain aim. On this line of thought, the reason the correctness of an utterance cannot vary over time is that whether or not one successfully pursues a given aim by performing an action is something that cannot vary over time. Suppose that I press the button on the remote control in order to turn on the TV. Whatever else happens, I successfully pursue this aim just in case, in pressing the button, I turn on the TV. If I fail to turn on the TV, nothing that subsequently happens will change this fact. I might go on to turn on the TV by doing something else—by changing the batteries and pressing the button again, perhaps—but that will be to successfully pursue the relevant aim by performing a different action; it does nothing to change the fact that, in pressing the button first time around, I failed to achieve the aim.

Though Evans does not spell it out, notice that this first objection marks a clear contrast between the first interpretation of ‘true<sub>*t*</sub>’ and the corresponding interpretation of the predicate ‘true<sub>*w*</sub>’, on which an utterance is correct at a possible world just in case the sentence uttered is true at that world: while the correctness of an utterance cannot vary over time, it can vary over possible worlds. Equivalently, while the correctness of an utterance cannot change, it can be contingent. This is consonant with the conception of correctness just sketched, as marking success. While whether or not, in performing an action, one successfully pursues a given aim is not something that can vary over time, it is something that can vary over possible worlds. Consider again the example of my pressing the button on the remote control. Had the batteries been working, I *would* have succeeded to turn on the TV, even though I actually failed.

Evans’s second objection is that, even if we can make sense of a notion of changeable correctness, a theory, such as  $T_1$ , that states the semantic values of utterances solely in such terms cannot serve as a theory of sense. The thought here is that knowledge of a theory enables a speaker to use and understand a language only if it enables her to determine whether or not an utterance is correct *simpliciter*, but knowledge of a theory like  $T_1$  does not do this. Again, it is worth stressing that the complaint is not that knowledge of the theory is insufficient on its own for determining whether or not an utterance is correct, but that knowledge of the theory is not even an enabling condition. Even together with omniscience as to the state of the weather at every moment, knowledge of a theory like  $T_1$  would not suffice for determining whether or not an utterance is correct; it would only suffice for determining whether or not it is correct at such and such times.

For Evans, this also marks a contrast between the temporal case and the modal case, since a theory that states the semantic values of utterances solely in terms of a notion of correctness

that can vary across possible worlds *can* serve as a theory of sense. As Evans explains it, the thought here is that an utterance is correct *simpliciter* just in case the sentence uttered is true at a certain privileged possible world, the actual world:

the ascription to thoughts of truth-in-*w* (truth that varies with worlds) is consistent with the ascription to them of simple truth, and hence is consistent with the ascription of correctness or incorrectness to utterances. Indeed, given the fundamental principle that there is a world ('the actual world') such that all and only truths are true with respect to that world, we may *derive* the absolute truth conditions of sentences (and utterances) from these 'truth-in-*w*' conditions

(Evans, 1985, p. 351)

So the modal logician can consistently respond to the second objection by insisting that a speaker who knows the theory can determine whether or not an utterance is correct *simpliciter* by determining whether or not the sentence uttered is true at the actual world.

This raises the question of why the tense logician cannot offer a similar response. Indeed, one might wonder whether Prior himself wouldn't have offered such a response. Prior, who was both an actualist and a presentist, would have agreed that an utterance is correct *simpliciter* just in case the sentence uttered is true at the actual world, but insisted on what might seem an analogous claim in the temporal case: that an utterance is correct *simpliciter* just in case the sentence uttered is true at a privileged time, the present moment.<sup>6</sup>

An initial point to note is that the claim that an utterance is correct *simpliciter* just in case the sentence uttered is true at the present moment can be understood in either of two ways, depending on whether we take "the present moment" to designate the time at which the utterance is assessed, i.e., now, the time at which you are reading this, or the time of utterance, i.e., the time at which the utterance is made. Assuming that there are utterances made at times other than now, it is clear that only the second of these claims can be correct. An utterance of 'It is raining', made some time in 1967, is correct just in case the sentence 'It is raining' is true *then*, at the time of utterance, not now, at the time of assessment.

Of itself, this marks a difference with the modal case, for the corresponding understanding of the claim that an utterance is correct *simpliciter* just in case the sentence uttered is true at the actual world is unproblematic. Even if, as possibilists contend, there are utterances made in possible worlds other than this world, it is unproblematic to say that such an utterance *is* correct—as opposed to *would* be correct, were the circumstances of utterance to obtain—just in case the sentence uttered is true at *this* world, the world of assessment. So while the claim that an utterance is correct *simpliciter* just in case the sentence uttered is true at the actual world can be unproblematically understood as the claim that an utterance is correct just in case the sentence uttered is true at the world of assessment, the putatively analogous claim that an utterance is correct *simpliciter* just in case the sentence uttered is true at the present moment can be unproblematically understood only as the claim that an utterance is correct just in case the sentence uttered is true at the time of utterance.

Worse, however, while the claim that an utterance is correct just in case the sentence uttered is true at the time of utterance is plausible, perhaps even obvious, it serves only to reinstate a stable assessment of utterances as correct or incorrect, once and for all: a sentence is true at the time of utterance if and only if it is *always* true at the time of utterance. In short, insofar as it is plausible, the claim that an utterance is correct *simpliciter* just in case the sentence uttered is true at the present moment seems to amount to an *abandonment* of (5), and the first

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<sup>6</sup> For a concise statement of Prior's presentism, see Prior (1970).

interpretation of ‘true<sub>*t*</sub>’, for an alternative interpretation specified by (6):

$$(6) (\forall t)(\forall S)(\forall u) [(Of(S, u) \& At(t, u)) \supset (Correct(u) \equiv True_t(S))]$$

#### 4 The second and third interpretations

On the second and third interpretations of ‘true<sub>*t*</sub>’ that Evans considers, the connection between the notion of truth at a time and the correctness of utterances is as specified by (6): an utterance is correct just in case the sentence uttered is true at the time of utterance. (For our purposes, the differences between the two interpretations are unimportant.) As Evans would have it, the situation in either case is the reverse of that of the first interpretation: while the interpretation of ‘true<sub>*t*</sub>’ is at least coherent, the corresponding interpretation of ‘true<sub>*w*</sub>’, on which an utterance is correct just in case the sentence uttered is true at the world of utterance, is problematic.

As Evans presents it, the argument against the modal version of (6) trades on a distinction between what he calls *world-indexed* and *world-neutral* propositions—those, like the proposition that snow is green in the actual world, expressed by statements which contain a reference to the world of utterance and those expressed by statements which do not. According to Evans, the modal version of the (6) has the consequence that the proposition expressed any utterance whatsoever is world-indexed. This, he argues, seems to lead to an “unacceptable form of modal realism”, conflicting with the conception “of the actual world as the world in which all and only true propositions are true” that forms the basis of a “sane view of possible worlds” (1985, p. 363).

Evans’s reasoning, and the distinction between world-indexed and world-neutral propositions on which it is based, is less than clear, but fortunately for our purposes, the underlying problem can be made out without invoking the notions of world-indexed and world-neutral propositions. The heart of it is the fact that, according to the modal version of (6), the correctness of an utterance depends only on the world of *utterance*. Thus, it implies that the utterance of a contingently false sentence, i.e., a sentence, like ‘snow is green’, which is true relative to some worlds but false relative to the actual world, made in a world in which that sentence is true, is correct, and remains correct regardless of how things are in the actual world. More generally, the correctness of an utterance, according to the modal version of (6), is independent of the world of *assessment*, and so is correct, if at all, relative to every possible world. But now, since an utterance is correct in the relevant sense just in case the proposition expressed by that utterance is true, it follows that the truth value of the proposition expressed by an utterance is independent of the world of assessment. The modal version of (6) thus implies that the propositions expressed by utterances have their truth values *necessarily*: that they have the same truth values relative to one possible world as they have relative to every other possible world.

There are at least two problems with this. Perhaps the most obvious problem—though not one that Evans himself points out—is that it rules out the possibility of propositions having their truth values contingently. Though *sentences* may have truth values relative to other possible worlds which differ from the truth values they have relative to the actual world, *propositions*—at least those expressed by utterances—do not. Secondly, as Evans does point out, it conflicts with the conception of the actual world required for what Evans calls a “sane” view of possible worlds. For if every proposition is true, if at all, relative to every possible world then the actual world is not *uniquely* that world at which all and only true propositions are true. More generally, for each set of propositions, there will no unique possible world at which those propositions are true: insofar as they are true at one world, they are true at every possible world.

This is obviously a problem for those, such as Prior, who hold that possible worlds can be individuated by sets of propositions—and not vice-versa. But it is even a problem for modal realists like David Lewis (1986) who do not think that worlds are to be *individuated* by propositions, but who may still want to allow that, at least for certain purposes, they can nevertheless be *represented* by propositions. If, for each set of propositions, there is no unique world at which those propositions are true, then this cannot be the case: insofar as one can use a given set of propositions to represent one world, one can use it to represent every world.<sup>7</sup> It is for this reason that Evans takes the modal version of (6) to lead to an unacceptable form of modal realism: it seems to require a conception of possible worlds as problematically antecedent to, or at least independent of, what would have been the case were they to have been actual.

The modal version of (6), then, has a consequence, namely that the propositions expressed by utterances have their truth values necessarily, which is doubly problematic: it precludes us from allowing propositions to have their truth values contingently, and also, it seems, from individuating or representing possible worlds as sets of propositions. By contrast, however, there does not seem to be any corresponding problem in the temporal case, i.e., with (6) itself. To be sure, by parity of reasoning, (6) must have the corresponding consequence that the propositions expression by utterances of sentences have their truth values *eternally*: that they have the same truth value relative to one time as they relative to every other time. This, in turn, rules out the possibility of propositions having their truth values temporarily, i.e., of their having truth values relative to other times which differ from the truth values they have now, as well as of individuating or representing times as sets of propositions. Accordingly, it seems to lead to a form of temporal realism which parallels that to which the modal version of (6) seems to lead, i.e., a conception of times as antecedent to or independent of what was, is, or will be the case when those times are present. But while this is a position that many would be loath to endorse in the modal case, most will be quite happy to endorse it here, in the temporal case.<sup>8</sup>

## 5 Evans's challenge to temporalism

Evans's core argument is the argument just sketched. If it is sound, modal logic can only be understood on the first interpretation of 'true<sub>*t*</sub>', while tense logic can only be understood on the second or third. This raises the puzzle, mentioned in the introduction, about the nature of any challenge to relativism—and in particular temporalism—that Evans is supposed to be raising. The challenge is presumably to explain how the correctness of an utterance connects with the truth relative to a time of the proposition that is thereby expressed. Evans's objections to the first interpretation of 'true<sub>*t*</sub>' seem to show that the temporalist cannot maintain that an utterance is correct at a time if and only if the proposition expressed is true at that time, but why can she not instead maintain that an utterance is correct if and only if the proposition expressed is true at the time of utterance? After all, we have just seen that it is possible to maintain that an utterance is correct if and only if the sentence uttered is true at the time of utterance. Why should matters

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<sup>7</sup> There is perhaps some scope for the proponent of the modal version of (6) to resist the objection here by insisting that it merely implies that the propositions expressed *by utterances* are true, if at all, relative to every possible world, and not that propositions more generally are true, if at all, relative to every possible world. This would enable her to hold on to the view that possible worlds can be both individuated and represented by sets of propositions that are true at those worlds, but at the cost of having to concede that none of the individuating propositions can be expressed. It is hard to see independent motivation for this response, and I will set it aside.

<sup>8</sup> Prior himself, who sometimes suggests times can be regarded as sets of propositions (see, e.g., Prior 1968, pp. 122–126), is a noteworthy exception, suggesting he would resist the second and third interpretations of 'true<sub>*t*</sub>'.

be any different in the case of the *proposition expressed* by an utterance?

The answer should be clear from the details of Evans's argument: it *is* possible to maintain that an utterance is correct if and only if the proposition expressed is true at the time of utterance, but to do so is to preclude oneself from *also* maintaining the view that propositions—at least those expressed by utterances—can be true at some times and others, i.e., temporalism. To see this, notice that the argument against the modal version of (6), and so against the modal analogues of the second and third interpretations of 'true<sub>t</sub>', has two parts. In the first, it is argued that the propositions expressed by utterances have their truth values necessarily, that they are true, if at all, relative to every possible world. In the second, it is argued that this is problematic, leading to an unacceptable form of modal realism. It is because the second part of this argument does not go through in the temporal case that Evans thinks the second and third interpretations of 'true<sub>t</sub>' are at least coherent. Crucially, however, the first part of the argument *does* go through. Since the correctness of an utterance, on (6), depends only on the time of utterance, it has the consequence that an utterance is correct, if at all, relative to every time. Given that an utterance is correct in the relevant sense just in case the proposition thereby expressed is true, it follows that the proposition expressed by an utterance is true, if at all, relative to every time—that propositions expressed by utterances have their truth values eternally.

There may nevertheless be a residual worry. If (6) comes at such a price, isn't the coherence of 'true<sub>t</sub>' something of a Pyrrhic victory? The worry is that it is hard to reconcile the idea that Evans is offering a defence of the notion of truth relativised to time, however limited, with the idea that he is arguing against temporalism, its most obvious application. What purpose can a notion of truth relativised to time serve if its coherence is incompatible with temporalism?

The worry can be addressed by invoking a distinction Michael Dummett has drawn between what he calls the *assertoric content* of a sentence, the proposition expressed by that sentence, and its *ingredient sense*, what it contributes to the assertoric contents of more complex sentences of which that sentence is a constituent part. Dummett observes that the two need not coincide. Consider a sentence  $\phi$  containing an empty name, for example, and  $Tr(\phi)$ , the result of embedding that sentence under the operator 'It is true that ...'. Taking the proposition expressed by a sentence to be given by its truth conditions, i.e., the conditions under which the sentence is determined as true by competent speakers of the language to which it belongs,  $\phi$  and  $Tr(\phi)$  express the same proposition: each is true in precisely the same conditions as the other. The results of embedding each sentence under negation, however, express different propositions. For although  $\neg Tr(\phi)$ , the sentence that results when  $Tr(\phi)$  is embedded under negation, is true,  $\neg\phi$ , the sentence that results when  $\phi$  is embedded under negation, is not.  $\phi$  and  $Tr(\phi)$  thus seem to differ in ingredient sense, making different contributions to the propositions expressed by more complex sentences of sentences of which they are constituent parts.

How does this help to address the worry? One way to capture the difference in ingredient sense between  $\phi$  and  $Tr(\phi)$  is to distinguish two ways in which a sentence may fail to be true. In order to accommodate the intuition that negation only maps false sentences onto true sentences, for example, we can say that  $Tr(\phi)$  is false and that  $\phi$  is neither true nor false. Importantly, the notion of truth value that we employ to capture the difference—that on which a sentence's truth value consists in its being true, false, or neither, say—can play this role even if it is not required to characterise any differences in assertoric content, i.e., in the propositions expressed by any sentences, since all we need to do *that* is the notion of a sentence's being true or not being true. The suggestion, then, is that Evans's argument shows the notion of truth relativised to time may play a similar role, characterising differences in ingredient sense between sentences even though it is not required to characterise any difference in propositions sentences express.



The point here emerges as a consequence of the so-called “double-indexing” considerations advanced by Hans Kamp in his paper ‘Formal Properties of “now”’ (1971). Consider:

- (7) (a) It is raining in London.
- (b) It is raining in London now.
- (8) (a) It will always be raining in London.
- (b) It will always be raining in London now.

Taking the proposition expressed by a sentence, relative to a context, to be given by its truth conditions, relative to that context, there is no difference in proposition expressed between (7a) and (7b): both are true, relative to a context, just in case it is raining at the time of utterance. The propositions expressed by (8a) and (8b), however, do differ. (8a) is true, relative to a context, just in case it is raining in London at the time of utterance *and at all subsequent times*. (8b) is true, relative to a context, just in case it is raining in London at the time of utterance. One way to explain this is to treat (7a) and (7b) as differing in ingredient sense, and characterise the relevant difference in terms of a notion of truth relativised to times. On this approach, (8a) and (8b) are constructed by embedding (7a) and (7b), respectively, under an operator, ‘It will always be the case that ...’, whose output, relative to a context, is true relative to a time  $t$  just in case the embedded sentence, relative to that context, is true relative to  $t$  and all subsequent times. We can then say that (7a), relative to a context, is true relative to a time  $t$  just in case it is raining in London at  $t$  and that (7b), relative to a context, is true relative to a time  $t$  just in case it is raining in London at  $t_c$ , the time of utterance. Given the connection between the notions of truth relative to a time and truth *simpliciter* specified by (6), taken in conjunction with the principle that an utterance is correct just in case the proposition thereby expressed is true, we will have a difference in ingredient sense between (7a) and (7b), manifested by the difference in the conditions under which each, taken relative to a context, is true relative to a time, without a corresponding difference in the propositions they themselves express, relative to any context.

## 6 Conclusion

I have argued that, even though it constitutes a defence of the notion of truth relativised to time, the core argument in Evans’s (1985) article raises a challenge to temporalism, the view that propositions can vary in truth value over time. I have argued that this challenge is best understood in terms of the distinction between *assertoric content* and *ingredient sense*: though the notion of truth relativised to time is not required for characterising any differences between the propositions expressed by sentences, their assertoric contents, it may nevertheless have a role to play in characterising differences in what sentences contribute to the propositions expressed by more complex sentences of which they are constituent parts, their ingredient sense. I have not considered whether Evans’s challenge can be met, however. Two avenues of inquiry suggest themselves. First, one might try to argue that Evans’s three interpretations of ‘true <sub>$t$</sub> ’ do not exhaust all the available options—that there are interesting alternatives to (5) and (6) to consider. Second, one might try to reject the background conception of semantic theorising on which Evans’s challenge rests. I have no space to explore either of these avenues of inquiry in any detail,<sup>9</sup> but I would like to close with some brief comments on the second.

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<sup>9</sup> I discuss both in detail in forthcoming work. See McIntosh (forthcoming).

As we saw in §2, Evans holds that it is a requirement on an adequate semantic theory for a language that knowledge of the theory enable one to determine whether or not utterances of sentences of the language are correct. I distinguished this from the stronger requirement that knowledge of the theory suffice for determining whether or not utterances of sentences of the language are correct. The requirement is merely that it be an *enabling condition*, i.e., that knowledge of the theory *together with appropriate worldly knowledge*—about the time of utterance and the state of the weather at that time, for example—should jointly suffice for determining whether or not utterances of sentences of the language are correct. But is there perhaps some scope for the temporalist to reject even this comparatively weak requirement?

An initial point to note is that the requirement only figures twice in the core argument as I reconstructed it: in the second objection to the first interpretation of ‘true<sub>t</sub>’—that a theory that implies that the correctness of an utterance may vary over time cannot serve as a theory of sense—and in motivating the idea that the notion of truth at a time needs to connect somehow with the relevant notion of correctness in the first place. The second objection is inessential to the overall argument: even if we drop it, there is still the first objection—that the correctness of an utterance cannot vary. But the idea that the notion of truth at a time needs to connect somehow with the relevant notion of correctness is crucial, since it is this that prompts the various interpretations of ‘true<sub>t</sub>’. The important question is therefore more whether we can reject this idea than whether we can reject the requirement that Evans uses to motivate it.

The idea that the notion of truth at a time needs to connect somehow with the relevant notion of correctness is usefully understood to have two parts. The first part, articulating the relevant notion of correctness, is the picture of assertions as always assessable as correct or incorrect, depending on whether the proposition expressed is true or false. The second part forges the connection to the notion of truth at a time; it is the thought that the notion of truth at a time ought to have implications for the truth of propositions. I take it that it would be self-defeating for the relativist to deny this, at least insofar as he wants to motivate relativism by appeal to tense logic. So we can narrow our focus further, to the question of whether we can reject the picture of assertion as always assessable as correct or incorrect, depending on whether the proposition expressed is true or false. Of course, this picture of assertion also plays a crucial role in the discussion of the second and third interpretations of ‘true<sub>t</sub>’, warranting the move from the observation that (6) implies that the correctness of an utterance is independent of the time of assessment, and so is correct, if at all, relative to every time, to the conclusion that the propositions expressed by utterances are true, if at all, relative to every time.

Can the picture be rejected? I won’t try to settle the question here, but I do want to stress that it is a quite minimal picture of assertion, perhaps more so than at first appears. The picture is not one on which the truth of the proposition expressed is the *only* dimension along which an assertion can be assessed for correctness. Clearly, an assertion can be assessed for correctness along a variety of dimensions: whether or not the speaker knows, or can adequately defend the proposition expressed, whether or not it is an appropriately polite thing to say in the circumstances, whether or not the speaker delivers the assertion at an appropriate volume, and so on. But one can allow all this and still insist that *one* of the ways in which an assertion can be assessed for correctness is according as the proposition expressed is true or false. Similarly, the picture is not one on which the truth of the proposition expressed is in any interesting sense a *fundamental* or *constitutive* dimension of assessment. Some philosophers have argued that truth is a constitutive norm or rule of assertion. Others have argued that it is the aim of assertion, i.e., that, in performing an assertion, a sincere speaker intends to express a true proposition. But while these views arguably entail the picture of assertion on offer here, none of them are entailed by it. Perhaps there are no constitutive norms or rules of assertion, and there is nothing

in particular that a sincere speaker need be intending to do in performing an assertion.<sup>10</sup> It is consistent with all this that an assertion nevertheless can be assessed as correct or incorrect, depending on whether the proposition expressed is true or false, just as it is consistent with all this that it can be assessed as correct or incorrect, depending on whether or not it was delivered at an appropriate volume. Again, I am not trying to settle the question of whether we can reject this picture of assertion.<sup>11</sup> But I hope it is clear that it is a very minimal picture, one that may appeal to a wide range of theorists, and specifically not just those who think that truth is in some sense a constitutive norm or rule of assertion, or the aim of assertion.

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<sup>10</sup> For a useful survey of these debates, and further references, see MacFarlane (2011).

<sup>11</sup> While it can be interpreted in various ways, on one interpretation of John MacFarlane's discussion of Evans in his paper 'Future Contingents and Relative Truth' (2003) he is rejecting this picture, preferring in its stead one on which, in performing an assertion, the speaker undertakes a commitment to defend the truth of the proposition expressed relative to any time at which she is legitimately challenged to do so. This is not to reject the idea that assertions cannot be assessed as correct or incorrect; they can—depending on whether or not the speaker is always able to give the requisite defence, for example. It is rather to reject the idea that assertions can be assessed as correct or incorrect *depending on whether the proposition expressed is true or false*. I discuss this position and offer a defence of the idea that assertions can be assessed as correct or incorrect, relating it to Dummett's distinction between assertoric content and ingredient sense, in (McIntosh, forthcoming).