

Tense, Propositions, and Facts

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There are two ways of incorporating temporal distinctions into a system of logic: *tensed* theories propose to expand standard logic with intensional tense operators; *tenseless* theories try to make do with the resources of extensional first-order logic, by using quantification over suitably chosen temporal entities, such as metaphysically basic time points or temporal parts. My concern in this paper is whether the adoption of a tensed theory of time also forces us to accept a particular view about propositions. Following Mark Richard (1981), say that a proposition is *eternal* if it always has the same truth value, and *temporal* if it is true at some times and false at others. Then my question is whether a tensed theory requires a commitment to temporal propositions.

Prior thought that tense logic could do double duty as a linguistic theory of verb tense and as a metaphysical theory of the nature of time. However, it quickly became apparent that verb tenses in natural languages do not function like sentential tense operators. To mention just two familiar cases, sequences of tenses in English do not iterate like tense operators (Ogihara 1996), and verb tense often serves as a vehicle for establishing intersentential connections between the various components of a text, rather than shift the time of evaluation of a single sentence, as sentential tense operators do (Kamp and Reyle 1993: ch. 5). As James Higginbotham sums up the situation, “the modal theory of tenses is inadequate: there is no basic part of our language for which it is correct” (1999: 199).

As far as applications of philosophical interest are concerned, this leaves us with the use of tense logic as a metaphysical theory; that is, as a theory of time that is formulated in terms of conceptually primitive tense operators. In Meyer (2013), I argued that such intensional theories of time are superior to their extensional rivals, but this is not an issue I want to revisit here. My thesis in the present paper is that the adoption of a tensed theory of the nature of time allows us to remain agnostic about whether there are any temporal propositions.

What propositions we ought to accept, if any, depends on what we want to do with them. Since propositions are appealed to in many areas of philosophy, there are a number of different issues that need to be considered. Their primary employment of propositions is as the contents of *assertions*. Offhand, this might seem to

speak in favor of a link between tensed theories and temporal propositions. While all utterance tokens of a tenseless sentence type have the same truth value, the same tensed sentence can be used to say something true at one time and something false at another. But this only entails that tensed sentences express temporal propositions if we take it for granted that every utterance of a sentence expresses the *same* proposition, regardless of the time of utterance. I shall argue that there are no compelling reasons to accept this, and that one might well be satisfied with a theory in which the same proposition gets picked out by different sentences at different times. Indeed, such a theory might be far more informative about the temporal features of propositions than one presented in terms of sentences that always pick out the same proposition.

Propositions are also said to form the object of belief, dread, relief, and other *attitudes*. However, it is not clear that these different attitudes take the same type of proposition as object, or that the objects of these attitudes must coincide with the contents of assertion. For instance, one might agree with Mark Richard (1981) that the objects of belief are eternal propositions, but side with Arthur Prior's (1959) claim that the objects of dread and relief are temporal propositions. And even if temporal propositions served as the objects of all attitudes, that alone does not favor a tensed theory of time any more than it did in the case of the contents of assertion.

Moreover, if we regard propositions as abstract objects, as many philosophers do, then there seems to be little point in agonizing about the existence of temporal propositions. Suppose we treat eternal propositions as functions from possible worlds to truth values and temporal propositions as functions from world–time pairs to truth values. The existence of both types of proposition would then be a trivial consequence of any ontology that contains worlds, times, and elementary set theory. The interesting question would be which of these abstract objects performs which of the various proposition roles. But to answer that question would be the job of a theory of content and attitudes; it is not something that a theory of time needs to be concerned with.

The one area where our theory of propositions does appear to have significant metaphysical repercussions is in theories of *facts*. Facts are entities that correspond to contingently true propositions. Very roughly, the idea is that 'the fact that φ ' and 'the fact that ψ ' pick out the same fact just in case the sentences φ and ψ pick out the same true proposition. The distinction between temporal and eternal propositions would thus project onto a distinction amongst facts. A *tensed* fact is one that corresponds to a true temporal proposition, and a *tenseless* fact one that corresponds to an eternal proposition. Since temporal propositions change truth values over time, and since only true propositions pick out facts, tensed facts would come into and go out of existence. Tenseless facts would always be the same.

I noted earlier that one might well be happy with a theory of assertion and

attitudes according to which the same proposition gets picked out by different sentences at different times. There is no reason why our theory of the nature of time must also serve as our theory of propositional attitudes, or vice versa. The matter is different for theories of facts. A theory of the nature of time whose sentences always pick out the facts seems to be far more illuminating of the temporal aspects of reality than one that does not.

If we think about the philosophy of time in these terms then the main question is whether the facts are tensed or tenseless. As Kit Fine (2005: sec. 1) notes, this is a question to which we are unlikely to get a decisive answer. What sort of facts we get depends on what sort of propositions we postulate. Yet if the main employment for propositions is in an account of facts, rather than in accounts of assertion or attitudes, then we cannot get a non-circular argument for or against tensed facts. Fine concludes that the debate only makes sense against the backdrop of what he calls a “distinctively metaphysical concept of reality” that is concerned with how things *really* are. I do not see how this avoids the circularity problem, but that is not an issue I want to press here. Instead, I want to argue that there are good reasons why an advocate of a tensed theory of time should reject facts altogether, in which case Fine’s problem never arises.

It is widely thought that contingent propositions are not true on their own, but are so in virtue of the way the world is: “truth supervenes on being,” we are told. One popular way of spelling out this idea is in terms of the Truthmaker Principle, which requires every true proposition to possess a truthmaker. This is an object whose existence alone would guarantee the truth of that proposition. Many advocates of the Truthmaker Principle, notably D. M. Armstrong, also believe that metaphysically basic facts are the only plausible candidate for truthmakers.

I propose that we reject the Truthmaker Principle. I will rehearse some of the standard objections to this principle, but what is of particular interest here is a reason for rejecting the Truthmaker Principle that arises from tensed theories of time themselves. Quentin Smith complains that Prior “never adequately clarified the positive ontological import of his tense operators” (1994: 11). But to demand an extensional theory with transparent ontological commitments that spells out the “deep truth” behind a tensed theory of time is to miss the point of the proposal. Tensed theories propose to account for temporal distinctions by inflating their *ideological* commitments with conceptually primitive, intensional tense operators, rather than by expanding their ontological commitments with temporal entities. By requiring metaphysical theories to have exclusively ontological commitments, the Truthmaker Principle is incompatible with tensed theories of time.

Proponents of a tensed theory cannot accept the Truthmaker Principle, but they do not need to reject the more general claim that “truth supervenes on being”; they just need to spell out this maxim in a slightly different way. David Lewis

(1992: 216) distinguishes two views about truth-making: that truth depends on *how* objects are, and that truth depends on *whether* they are. The Truthmaker Principle demands a truthmaker in the latter sense. What the advocates of tensed theories ought to say instead, I propose, is that truth supervenes on how things *were, are,* and *will be*, and that is all that can or needs to be said about this.

There might be reasons for rejecting tense logic as a theory of time. But once we have accepted such a theory, we are naturally led to a rejection of the Truthmaker Principle. This eliminates the main reason for thinking that there is a metaphysically basic category of facts, and also removes that last remaining reason for thinking that there is any interesting connection between tensed theories of time and temporal propositions. While there are interesting questions about temporal propositions, they concern what is happening within time. They are independent of the issues at stake in figuring out the best theory of the nature of time itself.

References

- Fine, Kit. 2005. Tense and reality. In *Modality and Tense*, 261–320. Clarendon Press, Oxford.
- Higginbotham, James. 1999. Tense, indexicality, and consequence. In Jeremy Butterfield, ed., *The Arguments of Time*, 197–215. Clarendon Press, Oxford.
- Kamp, Hans and Reyle, Uwe. 1993. *From Discourse to Logic*. Kluwer, Dordrecht.
- Lewis, David. 1992. Critical notice of D. M. Armstrong, *A Combinatorial Theory of Possibility*. *Australasian Journal of Philosophy* 70: 211–24.
- Meyer, Ulrich. 2013. *The Nature of Time*. Clarendon Press, Oxford.
- Ogihara, Toshiyuki. 1996. *Tense, Attitude, and Scope*. Kluwer, Dordrecht.
- Prior, Arthur. 1959. Thank goodness that's over. *Philosophy* 34: 12–17.
- Richard, Mark. 1981. Temporalism and eternalism. *Philosophical Studies* 39: 1–13.
- Smith, Quentin. 1994. General introduction: The implications of the tensed and tenseless theories of time. In Nathan Oaklander and Quentin Smith, eds., *The New Theory of Time*, 1–14. Yale University Press, New Haven.