

# Time, Reality & Experience

ROYAL INSTITUTE OF PHILOSOPHY SUPPLEMENT: 50

EDITED BY

Craig Callender



**CAMBRIDGE**  
**UNIVERSITY PRESS**

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE  
The Pitt Building, Trumpington Street, Cambridge, CB2 1RP,  
United Kingdom

CAMBRIDGE UNIVERSITY PRESS  
The Edinburgh Building, Cambridge CB2 2RU, United Kingdom  
40 West 20th Street, New York, NY 10011-4211, USA  
477 Williamstown Road, Port Melbourne, VIC 3207, Australia

© The Royal Institute of Philosophy and the contributors 2002

Printed in the United Kingdom at the University Press, Cambridge  
Typeset by Michael Heath Ltd, Reigate, Surrey

*A catalogue record for this book is available  
from the British Library*

*Library of Congress Cataloguing-in-Publication Data*

Time, reality & experience/edited by Craig Callender.

p. cm.—(Royal Institute of Philosophy supplement, ISSN  
1358-2461; 50)

Includes bibliographical references and index

ISBN 0-521-52967 0 (pbk.)

1. Time—Philosophy. I. Title: Time, reality, and experience. II.  
Callender, Craig, 1968. III. Series.

BD638.T566 2002

115—dc21

2002067445

ISBN 0 521 52967 0 paperback  
ISSN 1358-2461

# McTaggart and the Truth about Time

HEATHER DYKE

## 1. Introduction

McTaggart famously argued that time is unreal. Today, almost no one agrees with his conclusion.<sup>1</sup> But his argument remains the *locus classicus* for both the A-theory and the B-theory of time. I want to show how McTaggart's argument provided the impetus for both of these opposing views of the nature of time. I will also present and defend what I take to be the correct view of the nature of time.

McTaggart begins by noting that, when we think about when, in the temporal order of things, an event is located, there are two ways in which we can do this. On the one hand, we can locate an event as in either the past, the present, or the future. Once we have designated an event as occurring, say, three days ago, then every other event temporally related to that event will have some determinate location in either the past, the present, or the future. McTaggart called the series of events ordered in this way the A-series. But we can also locate events in time without reference to the past, present or future. We can locate events as temporally related to each other. We say that an event is earlier than, later than, or simultaneous with some other event. We can use these relations to order every event in a temporal series. McTaggart called the series of events generated in this way the B-series.

This claim of McTaggart's is an uncontroversial one about the ways in which, as a matter of fact, we think about the temporal locations and ordering of events in time. The A-series and the B-series are just two different ways of ordering the very same events and moments. For instance, the Great Exhibition of 1851 occupies an A-series location: it is 149 years in the past. It is also located in the B-series. It is, for example, 63 years earlier than the outbreak of World War I, which implies nothing about its location in the past, present, or future. By drawing this distinction between the A-series and the B-series, McTaggart has simply drawn our attention to the fact that we can represent the temporal ordering of events in these two different ways. But in the light of this distinction, genuinely substantial metaphysical questions arise: is one of these two ways of

<sup>1</sup> Sprigge (1992) is an exception.

## Heather Dyke

representing the temporal ordering of events more fundamental than the other? Does one of them truly represent the nature of time?

One characteristic of the A-series, that the B-series lacks, is that events don't keep the same A-series position for very long. If an event is present, then very soon it will be past. An event that is already past is gradually becoming more past. The B-series, on the other hand, is what we might call a static ordering of events. If an event occurs two days earlier than another event, then those two events are forever related to each other in that way. So, the notion of the A-series involves what we might call A-series change, which has also been called the flow of time, or temporal becoming.

Having made this distinction between the A-series and the B-series, McTaggart proceeds to present his argument for the unreality of time. It consists of two theses: a positive and a negative thesis. The positive thesis is that, if time exists at all, it must involve an A-series. His argument for this depends on the claim that there could not be change unless the events and moments of time formed an A-series as well as a B-series. So, the A-series is essential for there to be change, and change is essential for there to be time. His negative thesis is that the notion of the A-series is self-contradictory, so it cannot be part of reality. The conclusion that McTaggart draws is that, since the A-series must exist if there is to be time, but the A-series cannot exist because it is a self-contradictory notion, time itself does not exist.

In general, philosophers have accepted one of McTaggart's theses and rejected the other. So, while they recognize that his argument is valid, they have thought it unsound. However, they have disagreed over which thesis to accept and which to reject. The A-theorists agree with his positive thesis, that the A-series is essential for the existence of time. A-theorists think that a description of time that does not make reference to the A-series is an incomplete description of temporal reality. Consequently, A-theorists reject McTaggart's negative thesis, that the notion of the A-series is self-contradictory. B-theorists, on the other hand, tend to accept McTaggart's negative thesis. The notion of the A-series is indeed self-contradictory, so the A-series cannot be part of reality. But they reject his positive thesis. They think that time can exist without its constituents forming an A-series. In particular, they argue that change is possible without the elements of time occupying A-series locations. So, the A-series is self-contradictory, but since it is not essential to time, time itself is real, but consists only of a B-series.

### 2. Why I reject McTaggart's positive thesis

McTaggart thinks that change is of the essence of time. There is a sense in which we all think this, since we all think that time is the dimension of change. Change occurs when something possesses incompatible properties at different times: a tree is fully clothed with leaves, and then bare, and then fully clothed once more. But McTaggart means something more than this. For him, time itself exhibits change. Times, and the events that occur at them, change from being future to being present to being past. When McTaggart claims that time is the dimension of change, he means that it is the dimension of A-series change.

Why does McTaggart think that the existence of change requires the existence of an A-series? He argues that if time consisted only of a B-series, change would not be possible. If all there is to time is B-series facts about the temporal relations between events, then there cannot be change, according to McTaggart, because B-series facts never change. Facts about the B-series relations between events are fixed; they do not change. The only way in which the characteristics of an event can change is if it changes from being future to being present to being past. McTaggart's charge against the B-theory can be put another way. If there is only a B-series so that all events are equally real, no matter when they occur, and no event ever changes its B-series location, then nothing really changes. Reality is a fixed and unchanging entity.

McTaggart's objections to a B-series account of change are, I submit, question-begging. He argues that nothing about a B-series ever changes, so the B-series cannot accommodate change. However, he assumes, for the sake of his argument, that change *means* A-series change. It may be true that the B-series itself never changes, but that doesn't mean that the constituents of a B-series cannot undergo change. It may be true, to use McTaggart's example, that if a poker is hot at one time and cool at a later time, nothing about those facts ever changes, but it doesn't follow that those facts do not constitute a change in the poker. McTaggart is assuming that the paradigm subjects of change are events. It is events that change from future to present to past. But a proponent of B-series change need not accept this assumption. She can argue instead that the paradigm subjects of change are objects. It is objects that change by having incompatible properties at different times.

To put my objection in another way, McTaggart's argument establishes nothing more than that without an A-series there cannot be A-series change. A B-theorist can accept this, because for her,

## Heather Dyke

there is no A-series, and there is no A-series change. McTaggart's conclusion is a conditional. He claims to have established that if there is time, then there must be A-series change. But all that he has really established is that if there is an A-series, then there must be A-series change. This conditional is acceptable to a B-theorist, since for her it is true because both antecedent and consequent are false. If the existence of time depends on the existence of A-series change, then it would indeed follow that without an A-series there could not be time. But all McTaggart has established is that the existence of the A-series depends on the existence of A-series change.

### 3. Why I accept McTaggart's negative thesis

McTaggart's argument that the notion of the A-series involves a contradiction is deceptively simple, and strangely unconvincing on a first reading. His premises are that the A-series positions are incompatible, and that if the A-series exists, and with it A-series change, then every event occupies every A-series position. It follows from these premises that the A-series does not exist. The obvious response, as McTaggart notes, is that no event satisfies all of the incompatible A-series predicates at the same time, but only successively, and there is no contradiction in anything satisfying incompatible predicates at different times.

The obvious response, however, doesn't work. It says that nothing is ever past, present and future at once, but only at different times. There are two ways in which we can cash out this response. Are the different times at which an event is past, present and future, different times in the A-series or in the B-series? Taking the second option first, the response now goes as follows: of course nothing can be future, present and past. But something can be future at one time,  $t_1$ , present at a later time,  $t_2$ , and past at a still later time,  $t_3$ . This way of understanding the obvious response does indeed avoid the contradiction. But it is unacceptable to anyone wishing to retain a genuine A-series in her ontology. To say that an event,  $E$ , is future at  $t_1$ , present at  $t_2$ , and past at  $t_3$ , is to say no more than that  $E$  occurs at  $t_2$ , which is later than  $t_1$  and earlier than  $t_3$ . The A-series claims collapse into B-series claims. By anchoring the possession of incompatible properties to different times in the B-series, the A-series, and A-series change, have fallen out of the picture. Qualifying the A-series claims in this way yields B-series claims, which do not change their truth-value as things change their A-series position.

## McTaggart and the Truth about Time

All that is described by these qualified claims is a fixed and unchanging B-series.

So in order to avoid the contradiction, and retain A-series facts and change, a defender of the A-series must relativize the possession of the incompatible A-series predicates to different times in the A-series. Now the response goes as follows: of course nothing can be future, present and past. But something can be present now, while it *was* future and *will be* past. This move also succeeds in removing the contradiction, but it does so by introducing a set of second level temporal predicates, and while some of these are compatible with each other, there are some that are not. But if the A-series, and A-series change, are real, then every event possesses every second level temporal predicate, even the incompatible ones. So the contradiction has not been removed, merely shifted up to these second level temporal predicates.

What has happened is this. By saying that an event is present, was future, and will be past, we have described things as they are now. But because reality undergoes A-series change, things have not always been as they are now, and they won't remain as they are now. In order to incorporate A-series change into our description of A-series-involving temporal reality, we must recognize that the same event also will be future, and was past. But these second-level temporal predicates are incompatible with the ones we used to avoid the contradiction in the first place. So, relativizing the possession of incompatible A-series predicates to different times in the A-series cannot eliminate the contradiction.

### 4. An alternative expression of McTaggart's paradox

I often find that people are initially resistant to McTaggart's reasoning in establishing his negative thesis. I therefore wish to unearth the contradiction that he identified in a different way. Recall McTaggart's A-series. The properties of events by which they are ordered in the A-series are the properties of being past, being present and being future.<sup>2</sup> If we suppose that events really are ordered according to these A-series characteristics, then we must also admit that they change their A-series characteristics over time. An event, like the Sydney Olympics, was once in the remote future, and was recently in the near future. It is now in the present, will soon be in the recent past, and will gradually recede into the more

<sup>2</sup> There are also finer gradations of A-series locations such as being three weeks ago, being this week, and being two minutes hence.

## Heather Dyke

remote past. The question for McTaggart, and for us, is: does time, in reality, exhibit these A-series characteristics? Do events really possess the characteristics of being in the past, present or future, and do they really change in respect of them over time?

Let's suppose that events really do possess these characteristics. In that case, we can plausibly suppose that they are properties in some sense. Indeed, this is a common way of ascribing an ontological status to these characteristics, by those who think they are real.<sup>3</sup> How do the properties of pastness, presentness and futurity differ from each other? One thing that we can say is that they have different extensions. The property of pastness applies to all those things that are earlier than the present moment. Presentness applies to all those things that are occurring simultaneously with the present moment. Futurity applies to all those things that occur later than the present moment. But now notice that I have presented a picture of temporal reality that is only accurate for a moment. We can distinguish between past, present and future, in terms of their extensions, but by doing so, we leave out the other feature of the A-series: the continual change from future to present to past that everything undergoes.

So we must try to distinguish between past, present and future in a way that accommodates A-series change. But accommodating A-series change removes our means of distinguishing between past, present and future. Because everything successively possesses every A-series property, it follows that the extensions of the properties of pastness, presentness and futurity are all exactly the same. They all apply to everything. And it is not simply that these properties have the same extensions as a matter of mere contingent fact. If A-series change occurs, then they necessarily have the same extensions, reinforcing the conclusion that there is no genuine distinction between them.

One could object that the extensions of these properties are not identical if there is a first or a last moment of time. A first moment of time is never future, and a last moment of time is never past. But this does not avoid the co-extensiveness objection. In that picture, the property of presentness is co-extensive with the property of being either past or future, or alternatively, of being non-present. My conclusion stands, as being present, and being non-present are necessarily co-extensive if A-series change occurs.

Here, then, is McTaggart's paradox in my terms. We can only distinguish between the properties of pastness, presentness and

<sup>3</sup> See for example, Smith (1993).



futurity *at* some moment of time. But this yields a static 'snap-shot' picture of tensed time, a picture that is patently false, because everything is constantly changing its A-series property. But as soon as we try to incorporate A-series change into the picture, we lose our means of distinguishing between the A-properties. The distinction between pastness, presentness and futurity collapses because everything successively possesses them all.

To put my point another way, to suppose that the A-series is real requires commitment to two theses. Firstly, one must hold that there is a real, observer-independent distinction between past, present and future. Secondly, one must hold that different distributions of past, present and future obtain at different times. But it seems that one cannot hold both of these theses. Marking the objective distinction between past, present and future requires leaving A-series change out of one's account because one can only distinguish between past, present and future at a particular moment of time. Holding the second thesis, that the distribution of pastness, presentness and futurity changes from moment to moment, involves relinquishing our grip on the first thesis, that there is an objective distinction between past, present and future. As the distribution between A-properties changes the distinction between them collapses, since they all apply to everything. The entire account thus collapses under the weight of this contradiction.

It follows that time cannot be such that its constituents form an A-series. To suppose that the A-series is real is to suppose that time has these two features: an absolute distinction between past, present and future, and a continual change in respect of this distinction that the constituents of time undergo. But time cannot possess both of these features, so the A-series is not real.

### 5. The A-theory's options

If, as I have argued, McTaggart's attack on the reality of the A-series succeeds, what options remain? One option is simply to deny that times and their contents form an A-series at all. There is no objective, observer-independent distinction between past, present and future; nothing really changes from being future to being present to being past. Taking this line involves explaining why, if there is no past, present, and future, we are misled by our experience into thinking that there is. But for many this sort of response will be unsatisfactory. What is needed, they argue, is not an error theory of our possession of A-series concepts, but an account of them that

does not collapse in the face of McTaggart's paradox. I think there are two potentially viable options for those sympathetic to the A-theory, which I will briefly outline.

McTaggart himself suggests the first option when he says 'It is never true that [an event] *is* present, past, and future. It *is* present, *will be* past, and *has been* future.' (McTaggart (1927) 21). For McTaggart the explanation cannot stop here, since it merely introduces more complex tenses than the three simple ones, and because A-series change is continually occurring, every event has every complex tense, just as it has every simple tense, and some of them are incompatible. So, as we have seen, for McTaggart this line of response cannot avoid the contradiction. But an A-theorist could take issue with McTaggart's claim that the explanation cannot stop at this point. Take any event, *E*, that is happening now. We can say of *E* that it is present, was future, and will be past, and in saying this we do not contradict ourselves. What we have described is the present state of affairs. *E* has the property of being present. It also has the past tense property of being future, and the future tense property of being past. Provided the A-theorist is willing to concede that the present state of affairs is all that there is, she can avoid McTaggart's paradox.

There are some A-theorists, presentists, who are willing to make this concession,<sup>4</sup> and I grant that it does offer a way out of McTaggart's paradox, but whether it can constitute a viable metaphysics of temporal reality is another question. For many, commitment to the unreality of past and future will be too high a price to pay for avoidance of McTaggart's paradox. Those presentists who are willing to pay it must still show us that their picture of the world is coherent, and coheres with our experience. And it is not obvious that they can do this. The presentist's response to McTaggart effectively involves denying that A-series change takes place. Certainly the presentist can talk about events that will be present, and events that will, in a week's time, be two weeks past, and this way of talking gives the impression that A-series change is consistent with the presentist picture. But all these expressions really convey is that every event is located somewhere in the A-series, and that, were a different moment present, they would be located elsewhere in the A-series. Presentism, it seems to me, cannot accommodate the change in A-series positions that events and times undergo, for as soon as it attempts to do so, it falls right back into McTaggart's paradox.

<sup>4</sup> For example, Prior (1970), Bigelow (1996), Craig (1998), and Hinchliff (1996).

## McTaggart and the Truth about Time

The second A-theoretic response to McTaggart, that seems viable at first sight, is suggested by Dummett (1960). Dummett argues that what McTaggart's argument really shows is that there cannot be a complete description of reality independent of some perspective. According to Dummett, McTaggart implicitly assumes that there can be such a description. When that assumption is combined with his thesis that the temporal cannot be completely described without the use of A-series expressions, the contradiction quickly follows. If time is real, then the complete description of reality contains incompatible facts, viz., for any event  $E$ ,  $E$  is past, present and future. McTaggart concludes that, since the complete description of reality cannot contain incompatible facts, time is not real. Dummett concludes instead that the false premise is the one that says that there can in principle be a complete description of reality. So time is real, but reality only contains some of the incompatible temporal facts.

If there can be no complete, observer-independent description of temporal reality, then one of two possibilities follows. Either temporal reality consists of two domains: that which we can consistently describe and that to which we can in principle have no epistemic access. If this is the right interpretation of Dummett, then the burden of proof lies squarely with him. Why should we think that there is any more to temporal reality than that to which we have epistemic access? Alternatively, we can interpret Dummett as arguing that the maximal consistent description of temporal reality that can be given from a particular temporal perspective describes all that there is. This alternative reduces to presentism. We can give a complete description of the A-series location of every event given a particular temporal perspective, and this would constitute a complete description of present fact. If present fact is all there is, then presentism is true. But if this is the right interpretation of Dummett, then he faces the same problem that I outlined above for the presentist.

### 6. Moving on from McTaggart

I think that time itself exists, but that the A-series doesn't. There are no characteristics of pastness, presentness or futurity. There is no flow of time. Nothing really changes from future to present to past. But all of our temporal experience seems to suggest that there is an A-series. How come we seem to be deceived by our experience on such a massive scale? In what follows I will present an account

## Heather Dyke

of our temporal experience that appeals only to the existence of a B-series.

The feature of our experience that is most suggestive of the existence of an A-series is that we talk about events as if they were located somewhere in the past, present or future. We say, for example, 'It's nearly 5 o'clock', which suggests that 5 o'clock is located in the proximate future, and will soon be present. We say 'World War II ended 55 years ago', which suggests that the end of World War II is located 55 years in the past. And when we say things like this, what we say is determinately either true or false. I will call sentences like this, which appear to locate events or times somewhere in the A-series, A-sentences. It is undeniable that many A-sentences are true when they are uttered, but what makes them true, if not the fact that a certain event or time is located somewhere in the A-series?

According to the B-theory of time, the fact that makes a sentence like 'World War II ended 55 years ago' true is the fact that the event that it is about (the end of World War II) is 55 years earlier than the utterance of the sentence.<sup>5</sup> All events stand in fixed and unchanging B-series relations to each other. Utterances of sentences are events like any other, so they stand in temporal relations to other events. In particular, they stand in temporal relations to the events that they are about. An A-sentence that appears to locate an event somewhere in the A-series will be true if and only if that event and the utterance of the A-sentence itself stand in the requisite temporal relation to each other. An A-sentence that locates an event in the present is true if and only if the utterance of the A-sentence and the event occur at the same time as each other. An A-sentence that locates an event in the future is true if and only if the event occurs *after* the utterance of the A-sentence. An A-sentence that locates an event in the past is true if and only if the event occurs *before* the utterance of the A-sentence. Facts about the temporal relations that obtain between events and utterances about them are sufficient to account for the truth of every true A-sentence.

The B-theory thus treats time in a way that is similar to our treatment of space. When I say that 'London is here' I am not attributing to London the property of being here. What makes my utterance true, if it is true, is that the utterance occurs *in the same*

<sup>5</sup> There are two different B-theoretic accounts of the facts that make A-sentences true: the date version and the token-reflexive version. I argue elsewhere (Dyke, forthcoming) that the token-reflexive version is preferable. For the sake of simplicity, I only discuss the token-reflexive account here.

*place as London. Similarly, when I say that 'it is now Autumn', I am not attributing to Autumn the property of being present. What makes my utterance true, if it is true, is that the utterance occurs at the same time as Autumn.*

A-sentences appear to change their truth-value over time. The sentence 'The train is now arriving' is true at some times and false at other times. According to the A-theory of time, the fact that A-sentences change their truth-value over time reflects the fact that events and states of affairs are continually changing their location in the A-series. The reason why the sentence 'The train is now arriving' is sometimes true and sometimes false, is because the fact that the train is now arriving is only a present fact at some times, but not at others. It is only when it is a present fact that the sentence is true. All this is denied by the B-theory of time.

The B-theory invokes the distinction between sentence-types and sentence-tokens. A sentence-type has a 'changing' truth-value if and only if some of its tokens are true and others false. Two tokens of the sentence-type 'The train is now arriving' might have different truth-values, but the truth-values they have are fixed and unchanging. The truth-value that any token of this type has depends on when it is produced. So, the claim that A-sentences change their truth-value over time is wrong. The fact of the matter is that some tensed sentence-types have some true and some false tokens. This gives the impression that the sentence-type itself is a determinate object with a changing truth-value, but sentence-tokens are the proper bearers of truth and falsity, and their truth-values are fixed and unchanging.

### 7. An objection to the token-reflexive version of the B-theory

The B-theory provides a token-reflexive account of the truth conditions of A-sentences. According to this account, a token of an A-sentence is true if and only if the event the A-sentence is about stands in the appropriate temporal relation to the token of the A-sentence itself. For example:

For any token  $u$  of 'The train arrived 2 hours ago'  $u$  is true if and only if the train's arrival is 2 hours earlier than  $u$ .

The token-reflexive version is so called because the token itself constitutes part of its own truth conditions. It intuitively delivers the right truth conditions for tokens of A-sentences, but it has been criticized on the grounds that there are some circumstances where

it delivers the wrong truth conditions.<sup>6</sup> For example, William Lane Craig (1996) argues that that ‘The New B-theory can give no coherent account of the truth conditions of tensed sentences which are not tokened.’ (Craig (1996) 18) He asks what the truth conditions are for a sentence like ‘There are no sentence-tokens now.’ Any token of this A-sentence-type would be false, because if the token existed, the time at which it existed would not be a time of which it is true to say that there are no tokens. However, it also seems to be the case that there are some times of which it *is* true to say that there are no tokens then. The point of this objection is that the sentence-type ‘There are no sentence-tokens’ can express something true even though no true token of it can ever be produced.

The force of this criticism stems from the intuition that truth, or what is true of the world, does not depend on what anybody happens to say. But the token-reflexive version seems to imply that truth depends on true tokens being produced. This criticism has been articulated in some depth by Quentin Smith (1993), so I shall address his statement of it. He says:

‘If a normal A-sentence is used on some occasion to express something true, what the A-sentence expressed on that occasion would have been true then even if it had not been expressed.’ (Smith (1993) 83)

Smith is appealing to an intuition that we have about the concept of truth. The intuition is that the way the world is does not depend on there being utterances expressing that the world is that way. Smith thinks that the token-reflexive theory is committed to the denial of this intuition because it gives truth conditions that can only be fulfilled when sentence-tokens are produced. I shall argue that the token-reflexive theory is not defeated by this objection.

Suppose an event occurs, and lasts for a certain amount of time. A forest fire starts at  $t_1$  and burns itself out by  $t_2$ . During that period of time no one utters any sentence that expresses that the forest is now burning. Because the forest actually burns during this period of time, our intuition is that if someone had uttered such a sentence it would have been true. But how can the token-reflexive theory cohere with this intuition? I would explain it by putting forward the following counterfactual: between  $t_1$  and  $t_2$ , if someone had uttered a token of the sentence-type ‘The forest is now burning’, that token would have been true. The reason why it would have been true is that its tenseless token-reflexive truth conditions would

<sup>6</sup> See, for example, Smith (1993), Craig (1996) and Mellor (1998).

have been satisfied. The truth conditions for a token of this sentence-type are:

Any token  $u$  of 'The forest is now burning' is true if and only if the burning of the forest *is* simultaneous with  $u$ .

In order for these truth conditions to be satisfied two events must occur simultaneously: the burning of the forest and the production of a token of the sentence-type. Between  $t_1$  and  $t_2$  the forest burns so if, during that period of time, a token of the sentence-type is produced, its truth conditions would *ipso facto* be satisfied. However, if no such token is produced, the forest still burns during that period of time, but there is no token the truth or falsity of which we have to account for.

The project of providing truth conditions for A-sentence-tokens has both semantic and ontological significance.<sup>7</sup> On the one hand, it specifies what the world must be like in order for those tokens to be true. This is its ontological function. If the truth conditions of A-sentences only require the existence of B-facts, then that shows that A-facts are not needed to account for the truth of A-sentence-tokens. It also explicates how the truth or falsity of a sentence-token depends on what its semantic constituents mean when produced in a given context. This is its semantic function. If the project is successful it will show that the world need not be an A-world to account for the fact that we sometimes utter true and meaningful A-sentence-tokens, and it will also explain why the true A-sentence-tokens we utter are true. The provision of truth conditions makes perspicuous both the relationship between truth and reality, and that between truth and meaning.

The concept of truth is connected both to meaning and to reality. We might even say that it is ambiguous in that it has two distinct domains of application. Linguistic entities are capable of being true or false, and the world is that which makes true or false our utterances about it. Consider the difference between the predicate 'true' and the operator 'It is true that'.<sup>8</sup> The predicate 'true' applies to linguistic entities. It is sentence-tokens that can correctly be described as true or false. However, if we prefix a sentence with 'It is true that' we are making a claim about the world, not about the sentence. I can describe the sentence 'The forest is now burning' as true or false. But if I say 'It is true that the forest is now burning' I am making a

<sup>7</sup> Davidson (1986) recognizes both kinds of significance when he says 'The truth of an utterance depends on just two things: what the words as spoken mean, and how the world is arranged.' (Davidson (1986) 309)

<sup>8</sup> I am grateful to Colin Cheyne for suggesting this explanation to me.

## Heather Dyke

claim about what the world is like; I am describing reality, not a sentence about it.

It is important to be clear, when expressing one's intuitions about truth, whether those intuitions are about the connection between truth and meaning or that between truth and reality. It is the connection between truth and reality that generates our intuition that truth is independent of the production of any sentence-tokens. The world is the way it is independently of what anyone happens to say about it. This is the intuition that Smith thinks the token-reflexive theory is unable to explain. His example constitutes a sentence-type, a token of which would have been true if it had been uttered at a certain time, but no such token was uttered. He argues that the token-reflexive theory cannot account for our intuition that this sentence expresses a truth whether or not a token of it is produced. But the token-reflexive theory can account for this intuition, simply by upholding the distinction between the ontological and the semantic aspects of truth. We have an intuition that the sentence 'The forest is now burning' is true between  $t_1$  and  $t_2$ . The intuition can be explained by appealing just to the ontological aspect of truth. Between  $t_1$  and  $t_2$  *it is true that* the forest is burning, but if no sentence-token is produced, there is nothing to which we can ascribe the predicate 'true'. But reality remains the same whether or not sentences about it are produced.

Lastly, to return to the original challenge, I must explain how I would assign truth conditions to the sentence-type 'There are no sentence-tokens now' of which there can be no true tokens, even though *what it expresses* can be true. The general truth-conditional formula for this sentence-type is:

Any token,  $u$ , of 'There are no sentence-tokens now' is true if and only if  $u$  occurs at a time at which there are no sentence-tokens.

Now, consider some arbitrary token of that sentence-type. The time at which it is produced cannot be a time at which there are no sentence-tokens, so no true token of that sentence-type can be uttered. And the token-reflexive analysis explains why this is the case. However, if we turn now to the ontological aspect of truth, we can see that reality can be such that there are times at which it is devoid of sentence-tokens. That is all that is meant by the claim that there are times at which this sentence, or what it expresses, is true. It is, indeed, misleading to say that there are times at which this sentence is true. It is misleading in two ways. Firstly, it is ambiguous between sentence-types and sentence-tokens. As I have argued, it is sentence-tokens, not sentence-types that have truth-values, and there



can be no times at which a token of this sentence can be true. Secondly, it equivocates between the semantic and the ontological aspects of truth. There are times at which *it is true that* there are no sentence-tokens, but there are no tokens of this sentence-type that can be described as *true*.

I have only dealt with one objection to the token-reflexive version of the B-theory of time, but it is, I believe, one of the most compelling. Those who reject this theory, very often do so on the grounds that it cannot account for the truth of unuttered propositions.<sup>9</sup> By restricting the application of the predicate 'true' to sentence-tokens, and by upholding the distinction between the semantic and the ontological aspects of truth, the problem for the token-reflexive theory evaporates. Furthermore, I hope to have deflected the criticism that the token-reflexive theory has the unacceptable consequence that the way the world is depends on what human beings happen to say about it.

### 8. Conclusion

My hope in presenting this paper has been to guide you all on a journey, starting from McTaggart's argument for the unreality of time, and finishing up with what I believe to be the truth about time. I think McTaggart was right to argue that our world cannot be an A-world: it cannot be a world in which anything is *really* past, present or future. But I think he was wrong to argue that our world has to be an A-world if time itself is to be a part of it. Our world is a B-world, in spite of the fact that we talk and think as if it were an A-world. Indeed, the fact that we live in a B-world can provide the best explanation for the truth of our true A-sentences.

### References

- Bigelow, J. 1996. 'Presentism and Properties', in James E. Tomberlin (ed.) *Philosophical Perspectives 10, Metaphysics*, (Oxford: Blackwell Publishers Ltd, 1996) 35–52.
- Craig, W. L. 1996. 'Tense and the New B-theory of Language', *Philosophy* 71, 5–26.
- 1998. 'McTaggart's Paradox and the Problem of Temporary Intrinsic', *Analysis* 58, 122–27.

<sup>9</sup> Mellor (1998), for example, rejects the token-reflexive theory in favour of the date theory for just this reason.

## Heather Dyke

- Davidson, D. 'A Coherence Theory of Truth and Knowledge', in Ernest LePore (ed.) *Truth and Interpretation: Perspectives on the Philosophy of Donald Davidson* (Oxford: Basil Blackwell, 1986) 307–19.
- Dummett, M. 1960. 'A Defense of McTaggart's Proof of the Unreality of Time', *Philosophical Review* 69, 497–504.
- Dyke, H. (forthcoming, 2002) 'Tokens, Dates and Tenseless Truth Conditions', *Synthèse*.
- Hinchliff, M. 1996. 'The Puzzle of Change' in James E. Tomberlin (ed.) *Philosophical Perspectives 10, Metaphysics*, (Oxford: Blackwell Publishers Ltd, 1996) 119–36.
- McTaggart, J. M. E. *The Nature of Existence*, Vol II, (Cambridge: Cambridge University Press, 1927)
- Mellor, D. H. *Real Time II*, (London: Routledge, 1998)
- Prior, A. N. 1970. 'The Notion of the Present', *Studium Generale* 23, 245–48.
- Smith, Q. *Language and Time*, (New York: Oxford University Press, 1993)
- Sprigge, T. L. S. 1992. 'The Unreality of Time', *Proceedings of the Aristotelian Society* 92, 1–19.